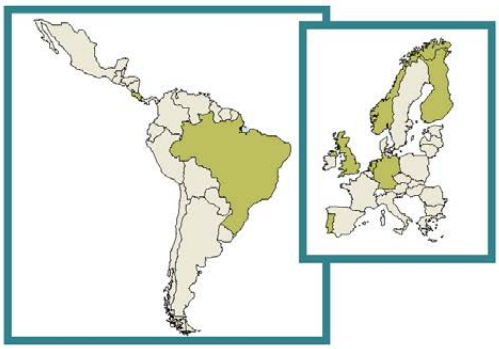

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POLICYMIX - Assessing the role of economic instruments in policy mixes for biodiversity conservation and ecosystem services provision

Legal analysis of the relationship between European state aid and nature conservation law, and economic instruments for biodiversity protection.

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Jukka Similä (SYKE) and Eeva Primmer (SYKE) (Eds.)

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Abstract

This report addresses the multiple ways in which international institutions and national conservation policies influence each other and in particular the use of economic instruments in conservation policy. The report consists of four substantive chapters, two of which focus on REDD+ and two on EU policies. The first substantive chapter analyses this development and its opportunities by focusing on four alternative governance arrangements that differ in their degree of market and government involvement and control. These four "architectures" are then evaluated and their characteristics analyzed comparatively. The author concludes that although the most market-like and ad hoc arrangements receive heightened attention, they face the biggest challenges in monitoring and achieving targeted outcomes and co-benefits. Importantly, the fit of any potential architecture depends on the ecological and institutional conditions of the implementing country, and will require special attention to good governance.

Next substantive chapter takes a closer look at national level REDD+ implementation and policy environment in Brazil. The analysis of the legal and political frameworks that govern REDD+ initiatives provides an overview of the contextual conditions that affect the REDD+ policy in the Brazilian Amazon. Based on multiple sources, it lays out the context in which national REDD+ strategies are being developed. The authors find that the federalist governance structure and the asymmetrical political power generate path dependency in the ways in which REDD+ is developed. Basing on these and the current status of REDD+ policy initiatives, the authors infer possible constraints, including policy legitimacy and legal and institutional conditions. The chapter concludes with recommendations for the formulation of an effective national REDD+ strategy for Brazil.

As the EU is still lagging behind in reaching its biodiversity conservation objectives, economic instruments provide an opportunity to advance conservation in an efficient fashion. The authors analyze existing instruments under the Birds and the Habitats Directive, the common agricultural policy and the policies concerning the forestry sector. This cross-sectional analysis of the current policies produces inferences of the constraints and opportunities for the introduction of additional economic instruments. The authors conclude that the added value of economic instruments would be to provide a higher level of biodiversity conservation at a given cost or given target level of conservation at minimum cost to society.

An economic instruments adopted by a member stated of EU, may be in conflict with the EU law. In the chapter focusing on the relationship between state aid law and economic instruments, the the authors identify influences of state aid law on the adoption and design of national economic instruments. They identify a number of constraints but also ways how member states may develop the national policy mixes. The analyses is illustrated by a number of examples. Drawing from the analysis, propositions are made for developing EU and national policies to include protecting and enhancing nature values in legitimate state aids.

Finally, we conclude by drawing together the messages from the analyses.

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Summary

Institutions matter. This report illuminates the various ways in which international and national environmental policies interact and how they shape policy instruments – and eventually the outcomes of the policies. The policies reported here range from international policies on REDD the mechanisms of which are still being developed, to established EU state aid law, the implementation of which has stable mechanisms. Despite the broad substantive range, the reported policies have common features. The commonalities disclose the tight linkages between international and national policies and demonstrate how international policies can both constrain and enable national conservation policies and economic instruments. Other commonalities include the political nature of interpreting principles: different state and non-state actors influence the interpretation that eventually can be settled in legal terms.

The reported policy settings where international policy frames national policies show that environmental policy design needs to cover a number other issues than the "pure" environmental ones. The aims of the REDD+ policies are not limited to carbon sequestration and climate change mitigation. Instead, the co-benefits to poverty alleviation and biodiversity protection are equally important goals. The way that national policies frame these parallel goals is not clear-cut; it depends both on the recent policy evolution and on which actors are engaged in formulating and implementing both international and national policies. The REDD+ analyses of this report highlight certain extremely important linkages between institutional design and the role the different actors may have in different institutional settings as well as how this might affect the realization of parallel policy goals. Where the international mechanism is still open, national and sub-national actors gain more power.

The chapters demonstrate that the ways in which different governance levels interpret and interact in implementing both emerging policies like the REDD+ and established policies, like the EU biodiversity policies, or state aid policies, eventually reformulate these policies. The active stance of Brazil on first opposing to REDD and then developing national and sub-national initiatives is a good example of this. Similarly, the EC allowing Germany to rearrange the nature conservation area governance referring to ideas of public interest shows how the interpretation of higher level policies is not only hierarchical implementation.

Another finding is that policies targeted at other sectors frame conservation policies. Understanding the EU agri-environment policies or Amazonian forest protection in Brazil requires that attention is paid also to the general goals of agricultural and commodity policy. Seeing EU state aid policies only as limiting the possibilities to adopt new kinds of economic environmental policy instruments, may make hinder recognising the general aims of that policy.

The REDD+, which might make huge amount of resources available to some actors, can easily be seen as an enabling institutional arrangement for national level economic instruments. In this case, the key issue is how to design instruments to be sufficiently effective and able to direct the resource to the purpose their aimed to be directed.

The governance solution adopted at the international level has important implications for what kinds of policy instruments are suitable at the national level. Chapter 2 shows that if internationally agreed

compliance markets are chosen as the model and will be developed, the design of national instruments is bound to this approach. The national level instruments should enable the compliance markets to work and the degree of freedom of national authorities to choose the instrument or set of instruments would be strongly limited by international policy design. A global fund approach would leave more options for national governments to choose the instruments and possibly include both economic and command-and-control instruments. Monitoring of the achievement of the target at national level could be separated from the choice of national policy instruments – at least to a certain extent. Clearly, there would be a need to use some sort of economic instruments to channel the funds to ecosystem services provides, but this could take a variety of forms.

The national level solutions presented in Chapter 2 have also implications in terms of the type of policy instruments. A market or project based mechanism points strongly the direction what kind of instrument national governments need to adopt. The other mechanisms have the nation state engaged in channeling the funds to the local level. As the case of Brazil Chapter 3 demonstrates, the instruments that are developed at the national and sub-national levels tend to rely heavily on the previous institutional arrangements. Conditional budget support would allow the maximum use of existing economic instruments like agri-environment schemes, other kinds of subsidies, payments for ecosystem services, regional development programmes or fiscal transfer, to the extent the country concerned is able to meet the international conditions. It would, however, limit national sovereignty, which many of the countries potentially receiving funds from REDD+ oppose. One could assume that path-dependency of a national fund under the present administration would be stronger than that of outside administration, but theoretically both options may rely on various governance architectures contain multiple set of instruments. While the development of new kinds of economic instruments would be possible under whatever national funding mechanisms, national funds outside existing national administrations would particularly encourage to seek for new kinds of solutions.

Brazil, the largest global emitter of greenhouse gases from deforestation and forest degradation, is a good example showing how international and national developments are interlinked and affect each other, sometimes by creating tensions between them. In the implementation of REDD+ goals, Brazil uses a great variety of instruments and measures and the role of three major policy programmes is critical as they coordinate numerous policy activities. Despite new policy programmes, path dependency has significantly contributed to the policy development and the international influence has not changed this. The governance architecture contains economic instruments, although the analysis of Chapter 3 finds no major policy shift towards new kinds of instruments and policy despite the identified acute need for increasing the use of sustainable production incentives. Also participation and transparency, monitoring and coordination of policies and instruments need further development. Overall, it seems clear that REDD+ is clearly providing a fruitful background pressure for reducing deforestation and for the adoption of development of economic instruments.

In EU member states, the EU law is the key international law that creates opportunities and sets constraints for the development of national economic instruments. Chapter 4 analyses how *de jure* and *de facto* constraints and opportunities influence the use of different instruments and how they could be taken into consideration in the design of a policy mix for the protection of biodiversity, while Chapter 5 discloses how European state aid law affects the design of national economic instruments.

The basic notion of the biodiversity conservation policies in Europe is that there are rather few economic instruments of biodiversity policy in use either at the European or at the national level. Apart from agri-environment schemes and certain other EU financing mechanisms like the Life+, EU does not make funds available for national biodiversity conservation and hence the funding of national policies is a responsibility of member states. While greening of common agricultural policy may provide opportunities for the development of new EU wide economic instrument, a large group of member states opposes legislative proposals increasing the total budget of EU. A subsidy reform (Vatn et al. in review) at the EU level is not ruled out. National governments still have a key role in financing nature conservation policies and hence, developing economic instruments relying on public budget in Europe.

The key pieces of EU nature conservation law, namely the Birds and Habitats Directives, need to be implemented at the national level using command-and-control type of regulation, although EU law leaves some opportunities to use national economic instruments in the site-selection for EU wide Natura 2000 network of protected areas. Still, the outcome must, regardless of the process how sites are selected, fulfil the EU legal requirement and this limits the use of economic instruments for the purpose of meeting EU requirements. Chapter 4 shows that there is some justification for this due to lack of dependability of economic instruments and their inability to address possible ecological disasters or tipping-points. EU biodiversity law does not forbid the member states to use economic instruments while selecting sites for domestic conservation purposes. Some member states, like France and Finland, have used this opportunity and rely in their domestic efforts on economic instruments, whereas policy development exceeding the ambition level set by EU has been very slow particularly in eastern and southern member states.

While EU law does not set any limitation on the range of conservation measures other than those required by EU biodiversity law a member states wish to adopt, the EU state aid affects the design of national economic instruments. Chapter 5 highlights the general restrictions that the EU state aid law imposes on national policy makers for adopting new economic instruments. Despite these restrictions, certain types of economic instruments rarely raise problems under the state aid regulation. For example, environmental taxes, fees and charges are in accordance with the state aid principles due to their non-discriminatory character. Some other instruments, like tax reliefs and subsidies, are often problematic, because many forms of them can be considered discriminatory. This is of major importance for biodiversity policy, because subsidies are a commonly used instrument for biodiversity policy. However, the question is not whether the use of subsidies is generally allowed, but what kinds of forms subsidies may take. Perhaps the most important issue is to what extent it would be possible to use payment schemes that are not strictly based on economic losses, but on other considerations, like nature values. There might be ways to avoid this limitation, like framing nature value trade as a service of general economic interests. Despite some positive indications, there are many uncertainties how this could be done in different circumstances and hence there is a need for further research with this regard. Developing EU-wide mechanisms would raise the considerations of general interest and the role of biodiversity to a higher level and perhaps avoid the discriminatory interpretations. However, WTO law may constrain this type of economic instrument development, and it might also face opposition based on subsidiarity principles.

The analyses presented in this report demonstrate that developing new policy instruments requires interaction between different governance levels. In addition to the technical coordination between

international and national policy mechanisms, also the principles by which instruments are developed are negotiated at multiple levels. The goals of biodiversity protection and reduction of deforestation are coupled with other substantive and procedural goals, including poverty reduction, participation, fairness, efficiency and open competition. While this report gives only a first glimpse to the evaluation of how different mechanism contribute to achieving these goals, it lays out the interactions that take place in an emerging policy arena and in an established one.

1 Introduction

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1.1 Background

National conservation policies emerge as responses to both national demand and international pressure to advance environmental and nature protection (Sand 2001; Perrin and Bernauer 2010; Primmer 2011). The demand for increasing conservation at the national level is often entangled with fluctuations in politics and economy, and can make use of new local initiatives. International policies typically develop more gradually and their design can appear distanced from the range of those local contexts that they eventually influence. International law and policy can affect national policies in different ways, and at the same time national policies can influence the implementation effectiveness of international regulation. Some international targets and regulation create new opportunities for the development of economic instruments in conservation policies, whereas other aspects can be seen as constraining national conservation initiatives (Paavola et al. 2009). A similar pattern can appear the other way around; in some cases national policies can be a constraint to the achievement of international targets and are at other times are enabling (Gulbrandsen 2003).

An example of what has been typically considered enabling economic instruments in conservation policy is the new strategy for Reducing Emissions from Deforestation and Degradation, known as REDD+. It is being negotiated under the United Nations Framework Convention of Climate Change (UNFCCC) with the aim to enhance carbon stocks and protect forest ecosystems. Another example of a framework that is anticipated to be enabling the implementation of the Convention on Biological Diversity (CBD) is the new Biodiversity Strategy 2020 of the European Union. An example of international regulations that can be considered constraining national biodiversity conservation policies is trade law. In these enabling and constraining settings, international institutions can seem external and rigid for those actors who initiate and design conservation at a national level. A similar rigidity can be observed in the way that national polices influence international ones. National positions on conservation policy regularly constrain setting new international goals and developing mechanisms for their implementation.

Originally we aimed to cover both EU state aid law and its international policy equivalent, namely WTO law. However, we decided to focus REDD+ instead of WTO law, because of the huge importance of REDD+, the key international economic instrument for forest conservation. REDD+ has the potentiality to become by far the most important piece of international regulation affecting directly and through national regulation on the use and conservation of forest resources. Hence, we ended to make only some references to WTO law in this report.

International policies are turned into legal principles at a very slow pace, and tend to remain fairly soft and difficult to monitor, while national policies are culturally and politically embedded. For these reasons, multilevel environmental governance faces the challenge of matching local and national environmental targets and action with the international environmental targets and being conditioned by economic regulation, like regulation on competition (Young 2002).

1.2 Purpose and structure of the report

This report addresses the multiple ways in which international institutions and national conservation policies influence each other and in particular the use of economic instruments in conservation policy. The report consists of four substantive chapters, two of which focus on REDD+ and two on EU policies. International and national governance structures for REDD+ are under development; in the negotiations over a Post-Kyoto agreement, the main emphasis has been on the general rules for implementing REDD+. Anticipating the national implementation, various countries have started to formulate their governance structures. The international process is only partly connected to the national development supported by the UN and the World Bank under the so called "REDD Readiness" activities. The first substantive chapter (Chapter 2) analyses this development and its opportunities by focusing on four alternative governance arrangements that differ in their degree of market and government involvement and control. These four "architectures" are then evaluated and their characteristics analyzed comparatively. The author concludes that although the most market-like and ad hoc arrangements receive heightened attention, they face the biggest challenges in monitoring and achieving targeted outcomes and co-benefits. Importantly, the fit of any potential architecture depends on the ecological and institutional conditions of the implementing country, and will require special attention to good governance.

Chapter 3 takes a closer look at national level REDD+ implementation and policy environment in Brazil, the largest global emitter of greenhouse gases from deforestation and forest degradation. The analysis of the legal and political frameworks that govern REDD+ initiatives provides an overview of the contextual conditions that affect the REDD+ policy in the Brazilian Amazon. Based on reviews of existing literature, national and international data, legal opinions and selected expert interviews, it lays out the context in which national REDD+ strategies are being developed. The authors find that the federalist governance structure and the asymmetrical political power generate path dependency in the ways in which REDD+ is developed. Basing on these and the current status of REDD+ policy initiatives, the authors infer possible constraints, including policy legitimacy and legal and institutional conditions. The chapter concludes with recommendations for the formulation of an effective national REDD+ strategy for Brazil.

Chapter 4 analyzes and evaluates the constraints and opportunities that the EU nature conservation law and related sector policies pose for the implementation of an efficient and effective mix of policy instruments for the protection of biodiversity in habitats. As the EU is still lagging behind in reaching its biodiversity conservation objectives, economic instruments provide an opportunity to advance conservation in an efficient fashion. The EU biodiversity conservation policy ranges from protection orientation to integration into economic policies. For this reason, it is important to analyze the opportunities of economic instruments across these policy fields. The authors analyze existing instruments under the Birds and the Habitats Directive, the common agricultural policy and the policies concerning the forestry sector. This cross-sectional analysis of the current policies produces inferences of the constraints and opportunities for the introduction of additional economic instruments. The authors conclude that the added value of economic instruments would be to provide a higher level of biodiversity conservation at a given cost or given target level of conservation at minimum cost to society.

Chapter 5 analyses the regulatory frames under which the economic incentives may be interpreted as state aid, as defined in the Treaty on the Functioning of the European Union. Based on this

analysis, the authors identify the terms and conditions on which these aids may still be granted to land-owners. By focusing on the Finnish Funding for Sustainable Forestry the influence of the European State Aid Law on the development of national biodiversity conservation regulation is examined and legal constraints on developing economic instruments are identified. Drawing from the analysis, propositions are made for developing EU and national policies to include protecting and enhancing nature values in legitimate state aids.

Finally, we conclude by drawing together the messages from the analyses.

International conventions on biodiversity are analogous with the EU biodiversity law, as is world-wide trade law with competition law (of which state aid law is part), although the global rules are far less strict and detailed. The global level rules have less comprehensive implementation mechanisms than the geographically and substantially defined laws. It goes without saying that EU law cannot be in contradiction with the commitments EU has made at higher international level with regard to biodiversity or trade. Instead of global or regional international biodiversity conventions we present the influence of international REDD+ policies, as they present new challenges for the development of national economic instruments.

2 Governance structures for REDD+: What will the solutions be?

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2.1 Introduction

Reduced deforestation and forest degradation (REDD+) is considered to be an important climate mitigation option (IPCC 2007). The idea is that (actors in) developed countries pay (actors in) developing countries to reduce emissions from forests. There are two main reasons behind this strategy. First, deforestation presently takes place mainly in developing countries. Second, it is considered a cheap mitigation option (e.g., Stern 2006). Hence, there is interest in the North for paying the South to reduce deforestation to reduce own total mitigation costs. REDD+ is often presented as a win-win solution along several dimensions. The effect on climate change is the main reason for developing the mechanism. That it is cheap is a second reason. Third, it is also emphasized that REDD+ payments could help combating poverty. Finally, protecting forests from deforestation is expected to protect biodiversity.

Establishing REDD+ demands creating new governance structures – both at the international and national level – to generate, transfer and disperse the necessary financial resources to various activities. While there are many positive potentials of REDD+, there are also many challenges. It may seem to be a cheap solution for the North, but creating reduced deforestation is a complex task and payments may not guarantee results. REDD+ may reduce poverty, but it may as well curb development in the South. The money may not end up as compensation for those facing reduced livelihoods, but find its way to the pockets of 'middlemen' and various elites.

The rationale behind this paper is that the format of the involved governance structure is important for outcomes along such dimensions. My aim is therefore to evaluate the capacity of different REDD+ governance structures to reduce emissions, but also foster poverty reduction and enhanced protection of biodiversity. While I will look at both the international and national level, the main focus will be on the latter.

The paper is structured as follows. First I will clarify what is meant by a governance structure and discuss how such structures may influence outcomes. Next I will emphasize some specific characteristics of reduced deforestation as a policy issues. Based on these insights, I will then characterize and evaluate alternative international governance structures for REDD+. Fourthly, I will study a set of possible national governance structures for REDD+. While the analysis of the international level will mainly concentrate on the capacity of different governance structures to rise funding for REDD+, the analysis at the national level will focus more on potential results related to emission reductions, poverty alleviation and biodiversity protection. The paper ends with a brief conclusion emphasizing policy implications.

2.2 Governance structures

Governance is about shaping social priorities and establishing structures to facilitate the realization of these priorities. It is typically developed in a context of conflict and as such it will imply taking

sides or trying to resolve these. Governance is a wider concept than government, as it emphasizes the involvement of a broad set of actors. It also encompasses a wider set of interactions than state command including e.g., trade and community engagement.

Following from this, the governance structure or 'architecture'[1] can be seen as consisting of two main components (Vatn 2011): a) the *type of actors* involved, characterized by their interests, their capacities and competencies, rights and responsibilities; b) the *institutional structures facilitating the interaction/coordination* between the actors. Both actor types and systems of interaction are institutionalized features structured by a set of conventions, norms and formal rules (Scott 2008; Vatn 2005). The type of actors involved, their capacities, interests and specific roles in the initial governance structure influence the outcome. The same goes for the kind of interactions that are facilitated.

Concerning the actors, it is standard to distinguish between private, public and community organizations. Each group carries some distinct characteristics regarding their aims and format of decision-making. Concerning the interaction between these actors, we may typically distinguish between market exchange, command and various cooperative/reciprocal arrangements. We may further encounter situations with no rules or identifiable patterns. We should also note the existence of 'hybrids', i.e. mixed forms of the above actor structures – e.g. public-private partnerships (see Lemos and Agrawal 2006) – with specific characteristics as decision-making entities.

Governance structures vary along many different dimensions. I find it especially important to emphasize the motivation, rights and responsibilities, production and dissemination of information/knowledge, and finally transaction costs. To illustrate, the motivation behind the operation of private businesses is the generation of profits for its owners, while a public authority bases its legitimacy on representing the interests of its citizens. Rights and responsibilities define which interests are protected. They concern both the rules defined for decision-making and implementation, and those defining access to economic resources – e.g., property rights. Access to information as well as its quality and transparency have also important systems-dependent dimensions – e.g., what information is considered private and what is public. Finally, transaction costs – the costs of interactions between actors – vary both due to the characteristics of the goods involved and the type of governance structure (Williamson 1985). Some services may be easily handled through the market while in other cases high costs of market contracting may favor public systems.

From the above, governance structures of different kinds are expected to support different outcomes concerning which goods and services are delivered, the costs of delivery and how gains and costs are distributed. Two issues should be emphasized. First, principles for the running of public bodies could be quite variable coming sometimes close to characteristics of private firms. My point is therefore not what a governance structure may be named, but what it implies concerning motivations and interaction forms. Second, all governance structures may be plagued with various perversions – e.g., corrupt private or public bodies. Highlighting the potential differences between private, public and community actors implies therefore an emphasis on their characteristics as 'type forms' or generic structures.

[1] This is the concept often used in the REDD+ discourse.

2.3 Challenges related to reducing deforestation

The core focus of REDD+ is the ability of forests to store carbon. Forests are biological systems, subject to natural variation implying a series of specific risks. Another aspect concerns additionality. It is acknowledged that REDD+ resources should only be used for changes in carbon stocks that would not otherwise happen (Angelsen 2008). Permanence and leakage are other important issues related to protecting forests. Since forest products are tradable goods, reduced deforestation at one place may be offset by increases somewhere else (op.cit.).

Forests represent livelihoods for millions of people delivering firewood, timber and non-timber forest products. They are important for commercial timber harvests and as land to clear for agriculture. Payments are involved in REDD+ to compensate for reduced access to these resources. How and who to compensate is contingent on a series of factors like power relations, rights to land, payment systems and transaction costs. Forests in the South are dominantly owned by states, but local communities have use rights that are protected to a varying degree. There is hence substantial conflict over the use of these resources, and REDD+ will demand clarification of rights. These processes are easily manipulated by e.g., local elites. They may, however, also result in compensations remaining in the hand of states as formal owners. Sensitivity to existing power relations and existing institutions become very important for the outcomes of REDD+.

In relation to the above, it is important to note that forest resources are relatively more important for the poorest section of the rural population (Vedeld et al. 2007). Many of these are landless and are at special risk when REDD+ is introduced. Similarly, the conditions for agriculture, including expansions into new land to feed a growing population, may become completely changed. Therefore, one may also need to establish programs to support changes in farming practices, make new energy sources available etc. This highlights the multi-sectorial characteristics of REDD+.

REDD+ is expected to attract much resources (Meridian Institute 2009), and it could end up ruling the forestry sector of involved countries. Due to the amount of resources involved, it could also create a lot of temptations. The forest sector is already haunted by corruption in many regions – e.g., Mill-edge et al. (2007). REDD+ could risk adding fuel to that fire.

2.4 International REDD+ governance structures

In the debate over the international governance structures for REDD+ two main solutions have been emphasized – compliance markets and global funds (Angelsen 2008). Also a solution based on ordinary development aid (ODA) is mentioned (ibid), emphasizing direct payments between single countries. As however, the above solution with a global fund will have to be based to a large extent also on public resources, I will not discuss an ODA based solution specifically.

A compliance market is based on a system of climate forcing gas emission reduction responsibilities. What these will look like in the future is as yet not at all clear – cf. the negotiations about a post-Kyoto agreement. The idea of a compliance market is still quite straightforward. It implies that countries (economic actors) with reduction responsibilities may offset (some of) these by paying other countries (economic actors) to take on their responsibilities. This offset is expected to happen to the extent it is cheaper to reduce emissions elsewhere. Hence, it is the limit or cap set on emissions that influences the total discharges while the offset market is a way to ensure cost-efficiency. The size of this market will depend on how strictly the limits are set and the cost differentials involved between the various actors.

The global fund solution – as typically presented – is based on voluntary disbursements in the form of public (e.g., ODA) or private donations. The size of this resource flow will depend not least on the willingness of states to pay. A study of Milder et al. (2010) shows that most of today's payments for ecosystem services (PES) comes from public sources. Vatn et al. (in review) emphasize that this can be explained partly by the free rider problems involved in voluntary systems for public goods and by the high transaction costs involved when raising funds through trades. State command – e.g., taxes and user fees – may reduce these costs substantially.

From the above it is standard to conclude that using a compliance market will raise much more resources for REDD+ – e.g., Saunders et al. (2008). States will not have the capacity to raise what is needed. Moreover, it also seems right to let the industry/those emitting pay rather than tax payers. This reasoning seems sensible, but misses one aspect. A global fund could also be based on a compliance system. This could be instituted by giving the fund the right to issue or sell certified emission reductions (CERs). The fund could next finance REDD+ activities in the South being equivalent in emission reductions as traded with buyers of CERs.

There are at least two reasons for including such a solution. First, a global fund makes it possible to expand the options for national REDD+ architectures increasing flexibility to local/national conditions. Specifically, it opens up for a more active and direct role of nation states in the South to engage. Second, using a compliance market means that the strongest emphasis will be on finding the cheapest carbon mitigation options. This is the main motivation for opening up for trading. While cost-efficiency may be a valuable attribute, the challenge is that REDD+ is a multi-purpose engagement where poverty alleviation and biodiversity protection are also heavily emphasized. Putting the latter kind of aims as restrictions on carbon trades has proven difficult – e.g., in the experience with the so-called Clean Development Mechanism (CDM) under the Kyoto Protocol. Using a fund opens up further opportunities to institute responsibilities for the wider set of aims for REDD+.

2.5 National REDD+ governance structures

Concerning national REDD+ governance structures, options are many. I will here concentrate on four 'generic' types – i.e., a) a market/project based architecture; b) a system with national REDD+ funds outside existing national administrations; c) conditional budget support, and d) a national REDD+ fund organized under the present administration. These options seem to cover the most important principal issues.

The market/project based structure includes buyers and sellers of forest carbon. Buyers will dominantly[2] be actors with emission reduction responsibilities according to a post-Kyoto agreement as previously emphasized. Sellers will be owners of forests. Actors with use rights to forest resources may also be involved dependent on the degree of formalization. Interaction between these actors will take the form of trades. This system would be quite similar to that of today's CDM and some PES systems.

The second governance structure contains the establishment of a national fund as an intermediary between forest owners/users and potential financiers of REDD+. Being independent of the present

[2] Also some voluntary involvement may happen.

state administration, we imagine that the board would typically include representatives from the private sector, civil society and public authorities. While the market solution may also include intermediaries, the idea behind this fund is to establish a non-commercial actor to be nationally responsible for REDD+ activities. Finally, the independent national funds may not only make trades with local forest owners. They may also have the capacity to support/run larger programs in cooperation with local communities. This system will be quite similar to today's conservation trust funds (Spergel and Wells 2009). Both in this and the above cases, the state will be involved as a regulator defining rules for trading/program activities and overseeing the working of the systems.

The last two options involve the state and state administration directly. Concerning conditional budget support, the idea is to utilize the existing state structures with its parliaments and ministries. Resources flow from an international fund to the respective state conditioned on the fulfillment of REDD+ activities. Resources are then allocated to various activities/forest owners/users relying foremost upon the command power of the state. Experience from conditional budget support is valuable for assessing this option.

The idea behind the fourth alternative – a fund in the national state administration – is to utilize some of the capacities and competencies of present state administrations, while avoiding some of its potential rigidities and increase transparency. Allocation of resources is here made by a separate board with REDD+ responsibilities only. This fund is set up as independent of ordinary budgetary processes with a specified responsibility to allocate funds to REDD+. It reports to the government, but may also include representatives from civil society and the business sector. Concerning interaction rules, this structure could be institutionalized to both use the capacities of state administrations to command, but also be involved in direct trades with forest owners/users. The existing structure that comes closest to this kind of solution is that of so-called forest funds (Rosenbaum and Lindsay 2001)

The various national governance structures would have to be differently linked to the international level. While the market/project based structure would be based on a compliance market, a national fund outside the state administration could be linked to both systems. The systems involving the state administration directly would demand a fund at the international level.

The coming analyses of the proposed governance structures will to some extent be based on experiences with similar systems – cf. those mentioned in the presentation above. One should, however, note that there are several specificities of REDD+ that must be accounted for. Hence, the coming analysis will also be based on a principal reasoning to be added to empirically grounded insights.

The coming analysis will be structured in four parts. I start with three sections focused around the aims of REDD+ - i.e., the carbon mitigation potential, the capacity to alleviate poverty, and the potential to protect biodiversity. In a final section I will discuss some issues concerning the wider legitimacy of the different ways of instituting REDD+ at the national level. The analysis will be based on a more comprehensive study presented in Vatn and Vedeld (2011). For details and a more complete documentation of sources, I refer to that publication.

2.5.1 Carbon mitigation potential

Looking at the potential to reduce deforestation/forest degradation and hence emissions of carbon dioxide, the capacity to raise funds is core. This actually depends mainly on the international governance structures for REDD. If a compliance market is compared to a fund founded on voluntary donations, the market/project based architecture and the solution with separate national funds would seem to out-compete the two other options as they will depend then on voluntary support. Experiences with the carbon markets and with payments for ecosystem services clearly indicates that caps on emissions are necessary to create high levels of funding (Vatn in review).[3] I have, however, emphasized that a global fund can be financed through a compliance system. Hence, there will be no significant difference between the four national structures in that regard, and the issue can be disregarded.

There is one exception to this. Very few CDM projects are forest related. Robledo and Ma (2008) explain this tendency with reference not least to complicated rules. Note that these projects only concern afforestation and reforestation as paying for deforestation was considered even more demanding in terms of transaction costs – i.e., costs of setting up and controlling contracts – when the rules for CDM were set. Hence, REDD was kept outside of the CDM. So while Stern (2006) found combating deforestation to be cheap, other options seem nevertheless to compete better in the market. For REDD+ to attract large resources, one may have to make REDD+ investments compulsory.

While the above is about the general efficiency of REDD+, it is typically assumed that the market is better than public systems to discover the most efficient solutions. Wunder et al. (2008) support such a conclusion also in the case of REDD+. Their argument is based on the idea that the evaluation of the values involved is more accurate. Moreover, budget fights within governments are avoided, and payments are expected to be better targeted. As the cases they review show, the delineation between what they call 'user-based' and 'government-based' systems relates very much to kinds of services characterized by different exclusion costs. 'User-based' programs focus typically on a single service that is comparatively easy to demarcate, whereas government programs tend to cover less specific services/package of services that can be associated with land uses or agricultural and forest practices. The authors' efficiency claim, therefore, does not acknowledge the variation in the services involved. Given less specific and easily demarcated services, broader programs may be more efficient due to lower transaction costs obtained by lowered precision in what is paid for.

Looking specifically at transaction costs, we noted above that REDD+ activities may be demanding to establish and run. It may imply quite substantial and conflicting processes concerning defining rights – i.e., who receivers of payments should be. To the extent that public systems do not demand as strictly defined rights as a market transaction, it implies that the former solution could reduce costs. In relation to this, we note that Corbera and Brown (2008) in a study of PES in Mexico conclude that common property regimes with insecure property rights may constrain forest carbon project development. Lack of title increases uncertainty, and private buyers tend to demand formal titling. On the other hand Corbera et al. (2007) show that PES arrangements have been established on land held in common, and in the Noel Kempff PES carbon project in Bolivia on avoided deforestation, the

[3] Note that a tax on carbon is an alternative to a cap. I do not here go into a discussion of what is the best of these two solutions, just noting that a REDD compliance system would depend on setting caps. If a tax was to be used, these resources could be channeled to REDD+ through e.g., a global fund.

project developers' recognition of informal, customary rights of local communities was important for the success of the project (Asquit et al. 2002). The latter is a public-private partnership, and indicates that it may be easier for public authorities to set up programs in areas with customary rights. Noting this, clarifying property rights to forests may be a generally good thing for local communities – cf. the previous emphasis on problems related to competing claims to resources. Hence, this could be a positive effect of a market solution. It demands, however, that the complexities of the systems of customary rights are well captured. Put the other way around, markets may favor simplification through privatization in a context where common property arrangements are locally favored.

Markets are often seen to be less costly in transaction costs terms than public systems. This conclusion depends both on the type of good and number of actors involved. In the case of REDD+, it is both very demanding to specify the good and large numbers of actors are typically involved. This would favor a solution with intermediaries. Using funds or conditional budgetary support with states as intermediary could be a way to reduce transaction costs. Arguments for favoring conditional budgetary support or a fund within the public administration would moreover be that present governance structures can be utilized. It should be observed that many states in the South have weak administrative systems at the local level, and some further development may seem unavoidable, though. Arguments for a separate fund outside of the present administration could in relation to this issue be avoidance of rigid public administrative structures that haunt many developing countries. A fund under the state administration could be given some of the same authority, including the capacity to shortcut levels of public administration going directly to district and local levels.

A core aspect for mitigation is to ensure additionality. This concerns first defining baselines – what would happen without REDD+. This is a process dependent on international decisions on rules and procedures. Hence, the issue seems independent of national architectures as discussed here. Another aspect concerns whether reductions being paid for relative to that baseline are in fact real. Starting with the market solution, there is a special 'twist' to markets in ecosystem services in the case of compliance markets. Neither the buyer nor the seller has any specific interest in the product delivered except ensuring that – in our case – CERs are issued. Hence, many examples of fraud are observed in the case of CDM – e.g., Schneider (2007); Sovacool and Brown (2009). Similar tendencies are found in the case of so-called biodiversity offsets/habitat banking, where high rates of non-compliance are found (Gibbons and Lindenmayer, 2007).

Would we expect the other systems to fare any better? It is an argument for both fund systems that they are dedicated to the specific cause of reducing deforestation. Hence, the motivational structures are distinctly different. Note also that in these cases resources may come from an international fund with similar commitments. If we look at a fund under the national administration, all funding will come this way. This strengthens the argument that the identification with the aims of REDD+ is stronger. In the case of conditional budgetary support the 'equation' is less easy to determine. Again the 'buyer' – the global fund – is dedicated, while the 'seller' faces a lot of competing aims and claims, and may further have an interest in over estimating carbon effects. Experience with budget support in the form of ODA is moreover that money is spent despite weak delivery – e.g., Checkel (2000) – using money already allocated. Fund models may avoid this kind of 'pressure'.

The problem of permanence is also one that may be demanding for all systems. There are, however, two kinds of vulnerabilities that are especially important. The market/project model is especially vulnerable to buyers 'pulling out'. If better options appear, buyers have the incentive to switch to those. Conditionalities must therefore be defined in contracts to avoid that what is gained is suddenly lost when a buyer stops paying. This may make REDD+ less attractive and more demanding to control. Another aspect raised is change in political leadership that may alter the interest of being involved in REDD+. Again conditionalities would potentially be a remedy. While I evaluate the chance of states 'pulling out' to be smaller than that of firms, these observations points again towards the two fund solutions as more attractive.

The final issue I will discuss is that of leakage. None of the proposed solutions can solve leakage problems across borders between countries. This has to be resolved at the international level favoring solutions involving a global fund. While not a system that per definition ensures avoidance of leakage, it has more options available through being globally administered. The limitations facing such a system would be related to countries that will not engage in REDD+. Separate institutions need to be in place to avoid this kind of 'free riding'. Establishing these may be quite demanding, though.

Going back to the national level, we here encounter a situation where conditional budgetary support comes out as the best alternative. States have the necessary formal power to ensure that leakage is avoided within its territories. The issue is one about will. I emphasize 'formal' as the observed levels of corruption in the forest sector of many developing countries create a big obstacle also in relation to leakage. In the case of the market/project solution leakage may become a very large problem. If leakage is observed, the project based system will have no power to correct for this as there is no arrangement for coordinating activities. The power there is, will be with the regulator – the state – to dismiss projects. But that is a weak measure in this instance. Note finally that for all systems to be viable in the sense of avoiding leakage, monitoring and control schemes (MRV) must be set up outside the project areas as well.

2.5.2 Capacity to alleviate poverty

Turning to poverty alleviation, it should first be noted that in the REDD+ terminology this is considered a 'co-benefit'. The focus is hence first and foremost on reduced carbon emissions. Anyway, a policy like REDD+ resulting in increased marginalization of rural poor would face great legitimacy problems. There is already a quite viable debate among the public in many northern countries about the appropriateness of paying developing countries to solve our problems. I also note that it is somewhat curious to think that REDD+ could be – in and of itself – a way to reduce poverty. What it does is to reduce livelihoods. Paying compensation may make people equally well off, but there is nothing in transforming 'wood to money' that in itself fosters development. Dependent on local markets for substitutes etc., money may or may not be as valuable as the resources lost. For poverty alleviation to happen, some extra pay beyond the lost livelihoods – the opportunity costs – is needed.

Markets work best when they can allocate well defined goods and services. The problems encountered when paying for complex ecosystem services are greater when also including 'services' like poverty alleviation. The literature is quite coherent concerning the problems with market solutions and poverty alleviation in similar fields. Looking first at the experience with at PES, specific

pro-poor initiatives and safeguards are found to be needed to ensure the protection of the poor. This is emphasized throughout the literature – e.g., Grieg-Gran et al. (2005); Wertz-Kanounnikoff et al. (2008). Similarly, CDM has delivered rather weakly on co-benefits, while there are some good examples of job creation. These are not least the effect of implied building activities related to e.g., hydro power projects. One cannot expect similar effects of REDD+ as we are now looking at protection. As noted before, those buying emission reductions are looking for the cheapest options to reduce emissions. For co-benefits to do well in a market setting, these must then be jointly produced with the cheap carbon. Olsen (2007) and Olsen and Fenhann (2008) show that this is often not the case.

In line with this, CDM funds do not tend to flow to the poorest regions. Hence, Africa has received a low percentage of CDM investments (UNFCCC, 2009). Lack of secure property rights, and costly transactions compared to low carbon effects gained per trade are important explanations (e.g., Lipper and Cavatassi 2004). Similar observations are made in the case of PES (e.g., Grieg-Gran et al 2005; Muradian et al. 2010).

Concerning the other three options, they have a better basis for handling multi-purpose objectives. Fighting poverty is a high priority of most governments in developing countries. Hence, in the case both of conditional budget support and a fund under state administration, instituting poverty alleviation as a core element of REDD+ is a viable option. However, policies to reduce poverty have often been criticized for being ineffective – e.g., Hulme (2010). The interests of indigenous peoples are often left unaccounted, sometimes even opposed. Also lacking efficiency/corruption in state administrations is a very serious challenge and diversion of funds is a potentially large problem. Certainly, in these areas, success will depend heavily on the engagement and will of the government in the specific countries. In this, the fund solution may offer some extra opportunities both because civil society could be more directly involved and because it is a more transparent system (more on this in Section 5.4). Also in the case of a separate fund, the bylaws could be used to institute poverty alleviation as an important aim. Hence this system could have some of the same strengths as a fund under state administration. It may have fewer measures at hand than the state, though.

A great challenge with REDD+ is to avoid that people with various forms of customary rights lose their access to land without compensation. Land becomes more valuable with REDD+. We might expect some considerable ‘engagement’ in capturing the involved rents. The most important power in this game concerns one’s political positioning. We should expect various strategies to ‘grab land’ appearing that would systematically hit poor, informal rights holders (e.g., Mustalahti et al. 2012). Moreover, there may be information asymmetries involved putting local rights holders in the weaker position in negotiation with external buyers over land. We would also expect such asymmetries internally among local people where those being politically well positioned are favored. Hence, I think that authors like Okereke and Dooley (2010) and Thompson et al. (2011), are right when emphasizing that protecting interests of local communities/indigenous people therefore demands action beyond the market. These issues are, however, no less complex than those raised above. Hence, there are substantial challenges also with the other three models. One could even envision ‘coalitions’ between centrally positioned politicians and local elites creating pressures upon the local poor that would be even more difficult than those referred to in a market setting. I note, though, that to the extent that this is acknowledged, stopping payments to a country would be easier with systems linked to a global fund than with a compliance market.

It should also be noted that sizeable PES programs may raise the price for provisioning services (e.g., food and energy). Protection may also reduce the opportunities for jobs, while in some cases there is a need for managing the protected resources. Again poor people depending on rented land/buying food are vulnerable.

Finally, I will emphasize that REDD+ will demand inter sectorial engagement. The lost livelihoods will include energy, land for agricultural expansion, building material and maybe loss of feed for animals. Paying compensation may not be enough if a shift to alternative livelihoods – e.g., other energy sources, fertilizers – demands investments in educational programs and infrastructures. Concerning these issues, the state based systems come forward as better than the other two in that existing sector policy actors can be mobilized. A separate fund comes forward as clearly better than the market/project solution

2.5.3 Potentials for biodiversity preservation

While the challenges for making REDD+ a strategy for reducing poverty is quite a challenge, issues are much less problematic when turning to biodiversity protection. This is simply the case because tropical forests are very rich on biodiversity and protecting their carbon will also protect their biodiversity.

Nevertheless, specific care may be necessary. Venter et al. (2009) documents that there are trade-offs between cheap carbon and high levels of biodiversity protection. They emphasize that "if REDD focuses solely on cost-effectively reducing carbon emissions, its benefits for biodiversity are low,… However, if the same REDD funds were targeted to protect biodiversity, almost four times the number of species would be protected." They note at the same time that costs of putting more weight on biodiversity are not high. They estimate that "the biodiversity benefits of REDD can be doubled while incurring just a 4 to 8% reduction in carbon benefits, depending on the amount of REDD funds expended" (p. 1368).

As this emphasizes again the need for policies going beyond the market, differentiating between the three other options is not clear cut. If existing conservation trust funds would be involved in REDD+, there might be a gain for biodiversity as this is where these have their main competencies today. If the separate fund solution is based on setting up new 'carbon funds', the formulation of their bylaws will be especially crucial.

Concerning the state based systems we observe substantial variation across countries when looking at existing public programs for biodiversity protection. In Africa, we observe quite substantial programs for protection of biodiversity, typically at the cost of the interests of the rural population (e.g., Hutton et al. 2005). The interests of indigenous people are often left unaccounted, sometimes even opposed. This is totally different in countries like Brazil where biodiversity is protected through protecting the interests of indigenous people. So while state engagement seems important to ensure that REDD+ takes biodiversity protection seriously, political will as well as social and biological conditions are also important for expected success.

2.5.4 The overall legitimacy

While the results concerning carbon mitigation, poverty alleviation and biodiversity protection all influence the general legitimacy of REDD+, issues concerning the process of decision-making are also

important. If that process is found to be illegitimate among actors involved, it could even jeopardize some of the potential outcomes.

Traditionally, the literature on legitimacy has focused on 'due process' emphasizing legality. Over the years the issues are broadened including the form of participation (e.g., discursiveness) and fairness in distribution of power and outcomes (e.g., Bäckstrand 2006; Okereke and Dooley 2010). In this section I will briefly discuss the aspect of participation as related to our four governance options. The issues of accountability and transparency will also be covered.

A strength of the market solution is that the trade ensures voluntary participations among the parties. As implicit in the above, the relations between parties may, however, not be equal – e.g., the issue of information asymmetries and unclear rights. Moreover, third parties are excluded. In the case of public goods like forests, this may be a serious challenge.

The other three solutions ensure third party participation to some extent – e.g., civil society representation; election processes. Hence, the systems will put different emphasis on the various parties involved. Choosing between emphasis on parties to a trade vs. wider societal engagement is clearly a value judgment. We also note that the three other systems will offer some opportunities to combat information asymmetries.

In relation to this, it is an issue whether decisions about a country's land use should be left to market forces. In the context of legitimacy, this takes us to the question of accountability. Market actors are accountable foremost to themselves, while states are accountable to its citizens. If REDD+ 'grows big', this may become an issue as large parts of a country's land in the case of the market solution may become *de facto* controlled by international investors. One could argue that many governments in the South are weak at building democratic decision-making systems, so international investors could just as well decide. Nevertheless, one may view the matter of who decides to be a political issue of principal importance. One may argue that the overall principles of land allocation should be politically decided. One may also maintain that while present political processes may in many ways be deficient compared to the ideal standards of democratic decision making, REDD+ may offer the resources needed to strengthen democratic involvement in the making of forest policies. REDD+ could make a difference not only to carbon, but also to political accountability.

Finally, concerning transparency, markets and budgetary support seem to come out as weakest. In the case of markets, information is principally with the parties to the trade. Certainly, states may claim insight concerning specified issues. The danger with budgetary support is that information 'gets lost' in bureaucratic systems where REDD+ issues moreover becomes only one among many other issues. The strengths with the fund solutions is that a) a wider set of actors are involved ensuring wider links to society; b) their attention is exclusively on REDD+, hence the focus of the information is much clearer. Formulation of bylaws may be used to further strengthen strong emphasis on the obligation to inform. It should also be noted that a high level of transparency will be an important element in combating the huge risk of corruption that will follow in the wake of REDD+. Concerning this, the establishment of independent MRV systems is crucial whatever national governance structure is chosen.

2.6 Conclusion

Instituting REDD+ is demanding. This is the core policy message from the above analysis. This implies that no solution can be ideal, a conclusion following also from the fact that no solution comes forward as clearly best – at least at the national level.

Concerning the international REDD+ governance structure, the analysis is quite clear and points toward a global fund based on a compliance system offering the fund the right to issue CERs as the best solution. This conclusion is also supported by the fact that the market/project based solution is the weakest of the options at the national level. There is therefore no conflict between what is best internationally and nationally.

Moving to the national architectures studies, the first observation to make is that given the proposed solution for the international governance structure, all solutions become equally effective concerning raising funds for REDD+. As to the market/project based solution it may be better at finding cost-efficient solutions. It may also offer a stronger position to some local interests. These observations are, however, quite conditional. Main weaknesses concern accountability, additionality, leakage, permanence, co-ordination across sectors, transaction costs, and the expected weak delivery of co-benefits. We note at the same time that there seem to be quite strong international pressures towards using this solution. It reflects a general trend towards neoliberal thinking in many international organizations like the World Bank and many UN organizations. This analysis points towards a need for a much more profound evaluation of the arguments behind their positioning.

Concerning the other three options, it is more difficult to conclude. In countries with very high level of corruption and/or very rigid public administrations, a separate fund may be advisable. Involving the state administration may simply be too risky. I have three main arguments to qualify such a conclusion. First, it may not be up to the international community to decide. If a state does not accept a separate fund, the only option may be to not include the country at all. Second, the 'exemplar' upon which this option is modeled – the conservation trust funds – where not established to combat corruption, but to attract private funding. This is not an issue here as long as the international solution is fund based. Third, REDD+ funds could be used to combat corruption in the forest sector instead of allocating money 'around it'. The amount of resources may certainly increase various temptations. REDD+ may, however, be systematically used to change administrative cultures. Again the attitude of the host country is crucial.

Turning lastly to comparing budgetary support with a fund in the state administration, the arguments for the former are mainly related to accountability/democratic processes and capacity to coordinate across sectors. The fund solution seems to offer better possibilities to increase transparency, ensure permanence and combat corruption when important. It may also – like separate funds – involve representatives from civil society and be organized to avoid some of the (necessary) rigidities for standard state administrations. Finally, it may be easier for external donors to formulate stronger conditions if the fund solution is used compared to paying via state budgets. This points towards a fund under state administration to be the best solution in many cases.

REDD+ is a demanding political endeavor. Independent of the main architecture chosen, there will be substantial needs for capacity and competence building. This concerns participatory systems, necessary local institutions including the clarification of property rights, establishing principles for distribution of funds, and the development of various technical competencies not least in MRV.

3 REDD+ Initiatives in Brazil - How are Global Climate Accords reflected on the ground?

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3.1 Introduction

The United Nations Framework Convention on Climate Change (UNFCCC) was opened for signature at the UN Conference on Environment and Development (UNCED) in Rio de Janeiro 20 years ago. Many Parties have ratified the Convention and its Kyoto Protocol up to now–with the prominent exception of the United States–and have thereby committed themselves to a measureable reduction in greenhouse gas (GHG) emissions. This study analyses the implementation of actions to reduce GHG emissions from deforestation and forest degradation under the UNFCCC. The introduction of forest initiatives has always provoked controversies between developing and developed countries and among advocacy groups—from indigenous and local communities to business and industry. National positions on inclusion of forest activities under the Kyoto Protocol have remained highly polarized. Some representatives of developing and developed countries, among them scientists and NGOs view reducing emissions from deforestation and forest degradation (REDD+) as an opportunity to reduce GHG emissions in a cost-effective way and also to achieve other important objectives of global environmental governance (Santilli et al 2005, IPCC 2007, Stern 2007). Others however regard the mechanism as yet another mechanism created to offset emissions from developed countries that will not be able to deal with challenging forest related issues. Brazil, for example, has always been opposed to REDD+ as a scheme that would allow emissions compensations from developed nations to gain carbon credits by supporting forest conservation in developing countries. Nevertheless, there is now widespread acceptance that REDD+ must form part of a post-2012 international climate agreement. This policy arena involves actors from various countries with highly divergent interests ranging from development aid, commercial interests in the timber and agribusiness sectors, environmental activism to pure research. In the current stage of negotiations, despite the existence of a number of disparate national and regional regulations that address the issue no international consensus as yet exists.

Despite lack of a broad consensus, during the second decade since the UNFCCC entered into force, mutual understanding within the international governmental and non-governmental community has grown of the urgency of an internationally agreed approach to REDD+. The implementation of REDD+ can be characterized as a pragmatic step-by-step approach that takes account of the existence of different rationales and interests. What renders the REDD+ debate an interesting case for analysis is the fact that countries are now implementing different pilot projects and strategies, on which basis it is now more feasible to identify the effectiveness of policy options within the global accords once

they reach the ground. In addition, investments in REDD+ are increasing dynamically, and the velocity of this growth in donor and investor interest poses new challenges for political responses. Any international agreement on REDD+ will have to respond to these processes and divergent interests in a flexible institutional design able to take account of the diversity of national and local responses.

This paper will analyze legal and political frameworks that are governing REDD+ initiatives in Brazil – the largest global emitter of greenhouse gases from deforestation and forest degradation. While focusing our analysis on the Brazilian case we seek to improve the overall perspectives for coordinated international responses to national realities. The paper is structured as follows. Section 1 provides an overview of the contextual conditions that affect the REDD+ policy environment under the UNFCCC. Section 2 looks at the historical context of deforestation in the Brazilian Amazon, including a number of factors which have affected the process of land use change in this biome and its effective control, such as the federalist governance structure, asymmetrical political power and developmental path dependency. Section 3 provides background on the context in which national REDD+ strategies are being developed in Brazil. Against this background, section 4 focuses on analysing the current status of REDD+ initiatives in Brazil and looks to possible constraints related to their success. The article concludes with issues that should be considered in the formulation of an effective national REDD+ strategy for Brazil.

3.2 Forest activities and REDD+ under the UNFCCC

The positive role of forests in mitigating climate change has been recognized widely since at least the 1950s (Southgate 1952). In the Declaration of the World Climate Conference in 1979, it was highlighted that deforestation and changes in land use are contributing to the increased amount of carbon dioxide (CO_2) in the atmosphere. In 1989, the Noordwijk Declaration on Atmospheric Pollution and Climatic Change[4] stressed the importance of sustainable forestry, reforestation, afforestation, and conservation activities. Shortly after the first assessment report of the Intergovernmental Panel on Climate Change (IPCC), the Second World Climate Conference held in Geneva in 1990, called upon national governments to take measures to increase "sinks" of greenhouse gases. A more comprehensive and legally binding scheme to curb the Earth´s increased temperature was put in place in 1992, with the adoption of the United Nations Framework Convention on Climate Change (UNFCCC). Forest and forestry activities are implicitly addressed by this important multilateral environmental agreement, but it was not until the 1997 Kyoto Protocol to the Framework Convention that a more detailed and specific legal framework began to be shaped.

As already shown by Sampaio and Gebara (2011) forests and forestry activities experienced two distinct phases within the climate change regime. The first phase was characterized by the definition of generic concepts of sink, reservoir, and source, provided by the UNFCCC. The second phase is characterized by the more precise and specific notions of these terms being provided by the Kyoto Protocol and subsequent Conferences and Meetings of the Parties.[5] The UNFCCC's broad definitions

[4] See "Noordwijk Declaration on Atmospheric Pollution and Climatic Change", Ministerial Conference on Atmospheric Pollution and Climatic Change, Noordwijk, 7 November 1989.

[5] For a discussion of the importance of developing clear definitions for terms such as "forests," "afforestation," "reforestation," and "deforestation", see Robert T. Watson and David J. Verardo, "Preface to the Intergovernmental Panel on Climate Change (IPCC)", IPCC Special Report: Land Use, Land-Use Change, and Forestry (LULUCF) – Summary for Policymakers, 2000, available on the Internet at

for the terms sink,[6] reservoir,[7] and source[8] subsumed the concepts of forest and forestry; and as a result, they supported forestry project activities during an experimental phase called Activities Implemented Jointly (AIJ) Pilot Phase.[9] Legally, at least until the Kyoto Protocol, Article 4(1)(d) of the UNFCCC provided the formal connection between forests and forestry and reservoirs and sinks. This provision called on all Parties to promote the enhancement of sinks and reservoirs of GHG. Such broad definitions allowed for forests and forestry activities to be equated to reservoirs and sinks, or sources when disturbed (Sampaio and Gebara 2011).[10]

In practice, this is important because the broadness of the definitions in the period leading up to the Kyoto Protocol allowed for project-based activities beyond merely afforestation and reforestation practices (which under Kyoto were restricted as the only allowed activities)[11] to include also conservation and sustainable forestry practices.[12] While the Kyoto Protocol expressly embraced forestry practices, it narrowed the UNFCCC's broad definitions of sinks, reservoirs, and sources.[13] That was an important contribution, because soon thereafter, negotiators began shaping a more specific legal regime for addressing land use, land-use change and forestry (LULUCF).[14] The initial legal framework dealing with LULUCF was launched by Articles 3(3) and 3(4) of the Kyoto Protocol, followed by Decision 9/CP.4. At first, the Parties opted for limiting LULUCF activities to afforestation, reforestation, and deforestation practices.[15] Amidst intense political debate over conflicting

<www.grida.no/publications/other/ipcc_sr/?src=/Climate/ipcc/land_use/index.htm> (last accessed on 15 March 2011).

[6] See United Nations Framework Convention on Climate Change (UNFCCC), New York, 9 May 1992, in force 21 March 1994, 1771 UNTS 107, Art. 1(8) ("'Sink' means any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere.").

[7] See UNFCCC, supra, note 8, Art. 1(7) ("'Reservoir' means a component or components of the climate system where a greenhouse gas or a precursor of greenhouse gas is stored.").

[8] See UNFCCC, supra, note 8, Art. 1(9) ("'Source' means any process or activity which releases a greenhouse gas, an aerosol or a precursor of a greenhouse gas into the atmosphere.").

[9] See Decision 5/CP.1, Report of the Conference of the Parties on its 1st Session — Part Two: Action Taken by the Conference of the Parties at its 1st Session, under Paragraph 1 (b) of the Conference of the Parties, UN Doc. FCCC/CP/1995/7/Add.1, 6 June 1995 ("[A]ctivities implemented jointly should be compatible with and supportive of national environment and development priorities and strategies, contribute to cost-effectiveness in achieving global benefits and could be conducted in a comprehensive manner covering all relevant sources, sinks and reservoirs of greenhouse gases.")

[10] See UNFCCC, supra, note 8, Art. 1(9) ("'Source' means any process or activity which releases a greenhouse gas, an aerosol or a precursor of a greenhouse gas into the atmosphere."); Lavanya Rajamani, "Re-Negotiating Kyoto: A Review of the Sixth Conference of the Parties to the Framework Convention on Climate Change", 12 *Colorado Journal of International Environmental Law and Policy* (2000), 201, at 207 ("Forests can be sources, sinks, or reservoirs of [greenhouse gases].").

[11] See Decision 5/CP.1, supra, note 11 (deciding that activities implemented jointly "could be conducted in a comprehensive manner covering all relevant sources, sinks and reservoirs of greenhouse gases.").

[12] See Review of the Implementation of the Convention and of Decisions of the 1st Session of the Conference of the Parties – Activities Implemented Jointly: Annual Review of Progress Under the Pilot Phase, under Paragraph 13, UN Doc. FCCC/CP/1996/14, 4 June 1996 (reporting that there are five ongoing projects in forest preservation, restoration, or reforestation and four in afforestation).

[13] See Kyoto Protocol to the United Nations Framework Convention on Climate Change, Kyoto, 10 December 1997, in force 16 February 2005, 37 *International Legal Materials* (1998), 22 *et sqq*.

[14] See Sebastian Oberthür and Hermann E. Ott, *The Kyoto Protocol: International Climate Policy for the 21st Century* (Berlin: Springer, 1999) at 9, 132 (suggesting that the issue of sinks was problematic in that there was little information available for the purposes of making a decision).

[15] See Kyoto Protocol, supra, note 15, Art. 3(3) ("The net changes in greenhouse gas emissions by sources and removals by sinks resulting from direct human-induced land-use change and forestry activities, limited to afforestation, reforestation and deforestation.") Deforestation, when characterized as a LULUCF activity, refers to the practice of preventing or reducing deforestation. See Pedro Moura-Costa and Marc D. Stuart, "Forestry-

interests,[16] the Parties agreed upon additional activities at the seventh session of the Conference of the Parties (COP-7) in Marrakesh for domestic accountability of forest and forestry activities (Sampaio and Gebara, 2011).[17]

However, the inclusion of forest sinks in mitigation activities has been one of the most controversial issues in climate change negotiations: accounting for forest sinks was frequently viewed as a "loophole" arrangement that would enable GHG emitters to sidestep serious measures for emissions reduction (Mwandosya, 2000). Several parties stressed the potential risks of forestry projects: carbon removals by forests are considered to be only temporary (trees could be attacked by fire or pests, or be slashed and burned for agriculture). Moreover, the establishment of plantations could contribute to deforestation, loss of biodiversity and harmful impacts on local livelihoods. These risks and related scepticism have, to a certain degree, impaired the political process as well as the potential of forestry activities.

Due to the resulting methodological and technical uncertainties, negotiators had great difficulty in agreeing on a scheme to account for carbon sequestration by forests (Schlamadinger and Marland, 2000). Other oppositional observers emphasized the risk of including forestry activities under the mechanism, saying that these could lead to the creation of neo-colonialist “Kyoto lands”, characterised by the spread of commercial plantations to the benefit of large corporations (Dutschke, 2001; Kill, 2001). On the other hand some claimed that a range of abatement strategies had to be put into practice for lowering the costs of reaching emissions targets during the commitment period. It was also argued that emissions from deforestation were responsible for a significant percentage of overall global emissions and that Clean Development Mechanism (CDM) projects could work against this trend and bring financial incentives to conservation and rural development programmes (Fearnside, 2001; Klooster and Masera, 2000; Masera and Sheinbaum, 2000)

In the end, only Afforestation and Reforestation activities were identified as qualifying for CDM activities. The negotiation of modalities and procedures for forestry CDM took two years longer than for other CDM sectors (e.g., energy), which also caused some delay in investment in this sector. To address the "loophole" risk, negotiators limited the amount of allowable emissions reductions through forestry to 1% of countries' total 1990 emissions annually for the first commitment period of the Kyoto Protocol (2008-12), or 5% overall. This level, however significant, was far from being reached in practice.

In the years following the Marrakesh Accords that defined CDM activities, the importance of forest measures under the UNFCC began to receive greater attention when afforestation and reforestation were identified as those that were least attractive to investors in the CDM pipeline.[18] It was in 2003 that the first proposal to compensate national efforts to reduce emissions from deforestation and

Based Greenhouse Gas Mitigation: A Short Story of Market Evolution, 77 *Commonwealth Forestry Review* (1998), 191, at 191–192.

[16] See Rajamani, “Re-Negotiating Kyoto: A Review of the Sixth Conference of the Parties to the Framework Convention on Climate Change”, supra, note 12, at 223 (“At COP-6, the Umbrella Group argued in favor of including additional activities in the first commitment period. However, the AOSIS and the EU opposed it.”).

[17] See Decision 11/CP.7, Report of the Conference of the Parties on its 7th Session – Part Two: Action Taken by the Conference of the Parties (Volume I), under Paragraph 1(b) – (c), of the Conference of the Parties, UN Doc. FCCC/CP/2001/13/Add.1 (21 January 2002).

[18] In the period since ratification of Kyoto, fewer than 20 forestry projects were approved for carbon credits by the CDM Board.

degradation was brought in to the table by a group of Brazilian environmentalists (Santilli et al 2005) under the argument that countries undergoing or at risk of large-scale deforestation, such as Brazil, Indonesia, Bolivia, Peru, Columbia, and central African nations, had no incentive within the climate regime to adopt policies to reduce deforestation and forest degradation and their consequent emissions.

The concept of "compensated reduction" as proposed by Santilli et al (2005) was seen as a means for both reducing the substantial emissions of carbon from deforestation and facilitating significant developing country participation in the Kyoto Protocol framework. The idea was that developing countries that elect to reduce their national emissions from deforestation during the 5 years of the first commitment period (taking average annual deforestation over some agreed period in the past, measured with robust satellite imagery techniques, as a baseline), would be authorized to issue carbon certificates, similar to the Certified Emissions Reductions (CERs) of the CDM, which could be sold to governments or private investors. Once having received compensation, countries would agree not to increase, or to further reduce, deforestation in future commitment periods. A country that committed to reducing deforestation and was compensated, but instead increased deforestation, would take the increment increased as a mandatory cap in the next commitment period (Santilli et al 2005). Concerns that such an accord would offer a loophole for northern emitters were assuaged by inclusion in the proposal that no such credits would be afforded to Annex I nations that had not complied with their mandatory emissions reduction requirements under Kyoto or its successor.

In December 2005, the Coalition for Rainforest Nations[19] led by Costa Rica and Papua New Guinea presented a formal proposal for reducing GHG emissions from deforestation to the 11th COP and first Meeting of the Parties to the Kyoto Protocol (COP 11/MOP 1). It was finally in 2007, that negotiators agreed upon a draft decision on REDD sent to COP-13 in Indonesia.[20] Decision 1/CP.13 adopted the Bali Action Plan and in its article 1(b)(iii) expressly embraced economic instruments to foster REDD practices in developing countries.[21] This resulted in the adoption by COP-13 of Decision 2/CP.13 specifically dealing with REDD, at this time without the plus (+).[22] The decision called for policies and measures for positive incentives toward avoided deforestation and forest degradation; recognizing the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries. During COP-15, Decision 4/CP.15 built on methodological guidance for REDD activities, adding the plus (+) to the mechanism, which calls for co-benefits (e.g. poverty reduction, later guaranteed by safeguards) and requesting a set of actions from developing country Parties and relying on the technical guidance to be provided by the Intergovernmental Panel on Climate Change (IPCC) to strengthen the technical work required for a successful REDD+ regime.[23]

[19] Bangladesh, Bolivia, Central African Republic, Cameroon, Chile, Congo, Colombia, Costa Rica, Democratic Republic of Congo, Dominican Republic, Ecuador, El Salvador, Fiji, Gabon, Ghana, Guatemala, Honduras, Indonesia, Kenya, Lesotho, Malaysia, Nicaragua, Nigeria, Panama, Papua New Guinea, Paraguay, Peru, Samoa, Solomon Islands, Thailand, Uruguay, Uganda, and Vanuatu (see, http://www.rainforestcoalition.org/eng/)

[20] See Reducing Emissions from Deforestation in Developing Countries: Approaches to Stimulate Action – Note by the Secretariat, 27th Session of the Subsidiary Body for Scientific and Technological Advice, Bali, Indonesia (2007 SBSTA Report) UN Doc. FCCC/SBSTA/2007/L.23/Add.1/Rev.1, 12 December 2007.

[21] See Decision 1/CP.13, Report of the Conference of the Parties on its 13th Session – Part Two: Action Taken by the Conference of the Parties at its 13th Session, under Paragraph 1(b) (iii), of the Conference of the Parties, UN Doc. FCCC/CP/2007/6/Add.1, 14 March 2008.

[22] Ibid.

[23] Ibid.

Since then, developing countries have been implementing pilot projects and strategies on REDD+ following the few guidelines provided by the above described UNFCCC decisions and in a country-driven approach. Some countries are implementing their projects with the support of programs like the United Nations Program for REDD (UN-REDD) and the World Bank Forest Carbon Partnership Facility, such as Vietnam, Peru, Cambodia, etc. Others, such as Brazil and Indonesia, are implementing REDD+ without guidance from multilateral agencies, relying mostly on voluntary donations from developed countries, but with an increasing reliance on national counterpart incentives.

Many of the challenges facing CDM afforestation/reforestation projects are of concern to negotiators dealing with REDD+. In summary, they include: scope and scale for REDD+, financing and benefits distribution, monitoring, reporting and verification (MRV), environmental and social co-benefits (Verchot and Petkova 2009). The scope of these concerns will be described below in reference to the construction of a national REDD+ strategy for Brazil.

3.3 Deforestation governance in the Brazilian Amazon – Historical Background

The Amazon Basin comprises more than seven million square kilometres in seven countries. It includes a tropical rainforest biome of some 5.5 million square kilometres, about 60 per cent of which is within Brazil. The Amazon, however, and in particular the Brazilian Amazon, has suffered deforestation at an alarming rate, from the 1960s (after construction of the Brasília-Belém Highway) and even more so from the 1970s onwards, largely consequent upon access provided by construction of the Trans-Amazonian Highway and of the highway linking the capitals of Mato Grosso and Rondonia (Highway BR-364).

Though there are some extensive areas of cerrado (savanna), most of the Brazilian Amazon is forested. However, by 2009 the forested area of 4 100 000 square kilometres had been reduced to less than 3 350 000 square kilometers (PRODES/INPE 2011). Additionally, research has indicated that the amount of forest seriously degraded by logging and fire is substantially larger than the amount of forest cleared (Souza et al 2009). Of special concern in that regard is that degraded forest has lower biological diversity, greater fire-proneness and greater susceptibility to clearing (Gerwing 2002).

Enhanced awareness of the importance of the Amazon has led to increasing recognition, within and outside Brazil, of the worldwide ramifications of preservation or destruction/degradation of the Brazilian Amazon rainforest. This has resulted in both international disquiet and increased international support, including financial and technological support, for action at both state and federal levels. Nevertheless, in Brazil as in many developing countries, there has been concern that international demands for environmental preservation of forest areas could threaten or diminish national sovereignty.

The vital importance of uncompromised sovereignty over its Amazon has consequently been ingrained in the policies of the Brazilian Government, in particular the Ministry of Foreign Affairs and — importantly, given the power of the military in Brazil throughout its history — the Ministry of Defense. The Brazilian armed forces themselves have seen the occupation and protection of the Amazon as the core of their role in the nation — and that mindset has been very broadly shared by

[23] See Decision 4/CP.15, Report of the Conference of the Parties on its 15th Session – Part Two: Action Taken by the Conference of the Parties at its 13th Session, UN Doc. FCCC/CP/2009/11/Add.1, 30 March 2010.

the Brazilian people as well as the government.

This has impacted on Brazil's approach to international treaty proposals. In particular, it has been a key factor in Brazilian resistance to the assumption of international obligations in relation to deforestation or any other matter in which the international community could be seen to be impinging on Brazil's sole possession and ownership of, and sovereignty over, its Amazon region.

For example, this was a driver of Brazil's adamant refusal, at the United Nations Conference on Environment and Development ('UNCED') at Rio de Janeiro in 1992, to countenance a binding international agreement on forests. The rather mild, non-binding 'Rio Forest Principles'[24] was the most that would be accepted by Brazil (and various other developing countries, including Indonesia, Malaysia and other significant rainforest nations) (Campos Melo 2000). To undertake concrete commitments was seen as potentially providing foreign powers with justification, or pretext, for occupation of economically and culturally valuable Amazonian areas or, at the very least, for international interference with Brazil's governance of its Amazon territory.

Processes of occupation of public lands in the Brazilian Amazon have been historically induced by incentives to clear forests as proof of 'productive' activity for purposes of concession of private title and access to public credit programmes. Within this context, social conflicts over access rights to land and other natural resources, involving a variety of newcomers (ranchers, speculators, migrant farmers) and existing populations, intensified during the 1970s and 1980s (Branford and Glock 1985, Hecht and Cockburn 1989, Millikan 1992). Throughout the late 1980s and 1990s conventional development paradigms predominated in the region, as exemplified by the creation of a series of export-oriented multimodal transportation corridors within the Brasil em Ação (Brazil in Action) and Avança Brasil (Advance Brazil) infrastructure investment programmes of the Cardoso administration (1994–2002). Development policies affecting areas of intact Amazon forest were largely maintained by the Lula administration (2003–2010), especially within the context of its Accelerated Growth Program (PAC), continued and expanded by his successor and protégé, Dilma Rousseff.

Increasingly, deforestation trends in the Brazilian Amazon have been linked to globalised markets for beef, hides, timber, soybeans, biofuels and other commodities. Clearly, recent movements in deforestation rates are linked to fluctuations in commodity markets, especially for beef and soybeans as well as climatic factors such as increasingly common drought cycles. However, it may be argued that efforts undertaken by the Brazilian government, especially related to the creation of protected areas in regions such as along the BR-163 corridor and improved enforcement activities, have, at least temporarily, yielded positive results (Barreto et al. 2009).

In recent years, important progress has been made in Brazil regarding promotion of forest conservation and addressing the drivers of deforestation and degradation in the Amazon region. Conservation policies aimed at controlling and preventing deforestation in the Amazon underwent significant revisions during the 2000s, marked by two relevant turning points. First, the launch of the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (Plano de Ação para a Prevenção e o Controle do Desmatamento na Amazônia Legal, PPCDAm) in 2004 integrated actions across different government institutions and introduced innovative procedures for monitoring,

[24] UN General Assembly, Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests, A/CONF.151/26 (vol III) (14 August 1992).

environmental control, and territorial management (Maia et al. 2011, IPAM 2009). Second, as novel policy measures were implemented beginning in 2008, the targeting of municipalities with critical rates of deforestation became operationally viable and rural credit became conditional upon proof of the borrower's compliance with environmental regulations (Assunção et al 2012).

Recent research indicates that the conservation policies associated with these two turning points were effective at curbing deforestation rates in Brazil. Observed deforestation in sample municipalities totalled 57,100 square kilometres in the states of Pará, Mato Grosso, Rondônia, and Amazonas for the 2005 through 2009 period. In counterfactual econometric simulations of farmer behaviour by Assunção et al (2012) , had the set of conservation policies implemented beginning in 2004 and 2008 not been introduced, this total might have instead been on the order of 119,200 square kilometres. These results therefore suggest that conservation policies avoided 62,100 square kilometres of deforestation, or 52.1% of the total deforestation that would have occurred in the 2005 through 2009 period if such policies had not been adopted. Using the conversion factors of 10,000 tons of Carbon per square kilometre (367 t CO_2eq per ha) and US$ 5.00 per ton of CO_2 mentioned in MMA (2011), this avoided deforestation is equivalent to an avoided loss of 621 million tons of stored CO_2, which is valued at US$ 11.4 billion (Assunção et al 2012).

The Brazilian government has more than 20 public policies intended to have positive impacts (direct and indirect) on climate change. Most of them are related to energy initiatives. The country's main challenge, however, is the problem of deforestation, responsible for up to 75% of Brazil's CO_2 emissions (MCT 2009). Currently, there are two macro policies for climate change in Brazil: the National Plan for Climate Change approved in November 2008 and presented at COP-14 in Poznań, and the National Policy for Climate Change (PNMC), which was approved by the National Congress and signed into law by then-President Lula in late December 2009. The former presents the status of initiatives in different sectors and possible mitigation and adaptation actions for them. It also addresses the issue of impacts and vulnerabilities associated with adaptation to climate change and outlines plans on research and development, education and instruments to implement actions. The PNMC provides specific actions to implement what is in the plan, including the creation of a national climate change commission and fund (the National Fund for Climate was established in December 2009, to be replenished by petroleum royalties from the Pre-Salt offshore petroleum); it also reiterates deforestation reduction commitments by 2020 made at COP-15 in Copenhagen (May et al 2011).

The PNMC, which includes the National Plan as one of its instruments, defines the objectives and guidelines for domestic mitigation actions. It enshrines in law the national voluntary commitment to reduce emissions, which could generate a reduction of between 36.1% and 38.9% in the projected emissions for 2020. The set of initiatives by Brazil involving emissions mitigation include combating deforestation and initiating alternative processes in the agricultural, energy and steel manufacturing sectors. Brazil's goal is to achieve an 80% reduction of deforestation in the Amazon[25] and a reduction of 40% in the Cerrado[26], constituting the largest national sources of GHG emissions. The Plan and the PNMC will be analysed in detail in the next section.

[25] From the 1996-2005 average (19,535 km²).
[26] From the 1996-2005 average (19,535 km²).

3.4 The REDD+ context in Brazil

The Brazilian federal government during the Kyoto negotiations in 1997 demonstrated opposition to inclusion of instruments to promote conservation of tropical forests and avoidance of deforestation for different reasons including sovereignty, technical issues and economic aspects. Brazil has instead advocated the creation of a fund toward which developed countries would make voluntary donations to help developing countries reduce deforestation. In this context, emission reductions achieved thereby are to be considered additional to emission reduction by developed countries, and would not be credited toward mandatory reductions by Annex I nations contributing to this effort (Brazil 2006).

In counterposition to the official Brazilian government negotiating position, the REDD+ debate gained great attention after a group of Brazilian environmentalists proposed to the UNFCCC the creation of a mechanism, initially called 'compensated reduction', linked to international carbon markets that would reward verifiable reductions in CO_2 emissions from deforestation achieved by Brazil and other developing countries, given their contributions to addressing the global climate crisis. Based on satellite monitoring of deforestation, the proposed mechanism would involve the establishment of reduction targets and compensation for 'avoided deforestation' contingent upon verified reductions in annual clearing rates, compared with a periodically adjusted historical baseline (Santilli et al. 2005).

At a national level, a group of nine NGOs launched a 'Zero Deforestation Pact' in the Brazilian Congress, proposing a national commitment to reduce deforestation rates in the Amazon from 14 000 km^2/yr in 2005–2006 to zero by 2015, based on annual targets and a series of actions to strengthen forest governance in conjunction with state governments. The proposed actions would give particular attention to improving licensing systems over land use in rural properties, economic incentives directed towards reduction of deforestation and conservation of forests, creation and consolidation of protected areas, implementation of alternative settlement projects appropriate to the Amazon, and support for indigenous peoples. Based on the findings of an initial study (Young et al 2007), the signatory organisations estimated that R$ 1 billion (approximately US $588 million) would be needed each year to finance implementation of the pact, and called for the creation of a special 'Amazon Fund' to be managed by the National Bank for Development (BNDES) (May et al 2011). This latter approach was consistent with a long held Brazilian negotiating posture within the UNFCCC that called for creation of an international voluntary fund to assist developing countries in meeting the costs of their commitments (also voluntary) to climate mitigation. It therefore earned support from Congress and the Executive branch, after having rallied important initial adherence from Amazon governors.

In August 2008, President Lula signed Decree 6.527, which created the Amazon Fund (Fundo Amazônia) within BNDES. Its creation was accelerated by the announcement by the government of Norway that it would make a substantial contribution to efforts under REDD+ by major deforesting nations to reduce their emissions from this source, over a 10-year period. Other Northern nations, including Germany, chimed in with promises of additional contributions. The Amazon Fund is conceived as a mechanism for receiving donations aimed at: i) management of public forests and protected areas, ii) environmental monitoring, control and enforcement, iii) sustainable forest management, iv) economic activities based on the sustainable use of forests, v) ecological-economic zoning, territorial management and land tenure regularisation, vi) conservation and sustainable use

of biodiversity, and vii) rehabilitation of degraded lands.

Following these initiatives the Brazilian government launched the National Climate Change Plan during COP 14 in Poznan. In general terms, the plan calls for a 'sustained reduction in deforestation rates ... in all Brazilian biomes' with the overall goal of reaching 'zero illegal deforestation', albeit at an underdetermined moment in the future. In particular, it establishes a goal of reducing Amazonian deforestation by 72% by 2017, in relation to a baseline of annual deforestation in the 1996–2006 period, resulting in a reduction of 4.8 billion tonnes of CO2. An initial reduction of 40% would be achieved during the 2006–2009 period in relation to the 10-year 1996–2005 average. Additional reductions of 30% would be achieved in two subsequent periods, using an adjustable baseline. To achieve this goal, the Plan calls for implementation of action plans in Brazilian biomes such as that already underway in the Amazon (see below), with improvements in capacities for monitoring deforestation and land use change.

The PNMC used as a model the work undertaken since 2004 under the Action Plan for Protection and Control of Deforestation in the Legal Amazon (PPCDAm) to launch a new plan focused on the Cerrado region - the Plan of Action to Prevent and Control Deforestation and Fires in the Cerrado Biome (PPCerrado). These plans are instruments in the PNMC that form part of an integrated set of national strategies to address not only climate change but also biodiversity conservation, by prevention and reduction of deforestation and promoting the sustainable use of natural resources in these biomes.

In addition to those plans, the PNMC also provides for the elaboration of sector plans for mitigating and adapting to climate change. The Plan for Low Carbon Agriculture Emission (ABC Plan), for example, seeks to ensure continuous and sustainable improvement of management practices which reduce GHG emissions by the Brazilian agribusiness sector. The PNMC also provides for the application of financial mechanisms aimed at supporting the implementation of the planned initiatives, such as the pre-existing Amazon Fund (Fundo Amazônia) and a new National Climate Change Fund (Fundo Clima).

Following these strategies, in 2010 the Ministry of the Environment launched a process to formulate proposals for a national REDD+ strategy that will be mainly based on PPCDAm, PPCerrado and ABC implementation. On top of that, Brazil's Investment Plan under the Forest Investment Program (FIP) was endorsed (US$ 70 million) and will have as focus the Cerrado biome and the implementation of different projects to support the ABC plan, to increase monitoring of fires in Cerrado, to generate information about the biome and support the implementation of the Rural Environmental Registry (CAR – *Cadastro Ambiental Rural*) in private properties, which is binding for all rural proprietors in Brazil. CAR is established by Law 12.651 of 2012 and requires all landowners to register their legally protected forested areas with the state environmental authority, as a first step toward degraded land restoration.

The strategy aims at using these three plans (described and analysed below in greater detail) as central pillars for REDD+ implementation in Brazil. In parallel, the development of safeguards is under discussion with different actors of civil society. For this purpose, the MMA held two meetings to include key stakeholders in the debate. The outcomes of these meetings, however, have pointed up different challenges for the implementation of REDD+ and safeguards in Brazil, including: governance and participation (political will, dialogue, articulation of different levels); information and

capacity building (informative workshops to local people, participation, monitoring and conflict resolution); working groups (to include different types of stakeholders); benefit-sharing (development of equitable benefit-sharing mechanisms); implementation and consolidation of the safeguards within the national strategy; and coordination of sectoral policies (forest code and others).

3.4.1 Action Plan to prevent and control deforestation in the Amazon (PPCDAM)

For its first phase, between 2004 and 2007, the PPCDAM aimed at reducing deforestation by 20% in three years (Grupo Permanente de Trabalho Interministerial, 2004). For the next period, the objective is an 80% reduction of deforestation by 2020 (considering the 1996-2005 baseline) and eventually zero deforestation (Grupo Permanente de Trabalho Interministeria , 2009).

The Action Plan has organized its actions into three major pillars:

i. Tenure regularization and territorial management;
ii. Monitoring and control;
iii. Sustainable production incentives.

Since deforestation and forest degradation are consequences of weak governance in the Amazon region, the first two action pillars aim at reinforcing the public control, clarifying tenure with the enhancement of registers, cartographic data and zoning plans, as well as strengthening monitoring and enforcement capacities. The third pillar seeks to incentivize sustainable practices, supporting sustainable forest management, extractives activities, enhancement of agricultural productivity and restoration of degraded areas. Since 2009, the federal action plan is complemented by state action plans shaped by the same pillars of activities. The Brazilian Executive office of the Presidency (Casa Civil) coordinates the executive commission of the PPCDAM (Federal Decree from 15/03/2004) and the Ministry of the Environment is in charge of monitoring its activities. State action plans are coordinated by state agencies.

The rate of deforestation has followed in decline until 2010 and there is a consensus that the actions of the Plan have been influencing this trajectory. The annual deforestation rate in the Brazilian Amazon decreased from 27,400 km² in 2004 to 6,200 km² in 2011 (according to the government's Prodes satellite monitoring program). According to the established baseline, Brazil is right on track in its commitment having already achieved a reduction of 68,2% from the 1996-2005 deforestation rate. In terms of CO_2 emissions, this implies a reduction of 1.63 billion tons of CO_2.

However, the effectiveness of PPCDAm was heavily concentrated on command and control actions while measures that should promote a transition to a sustainable development in the Amazon, guaranteeing a more sustainable reduction in the long run, have obtained a low level of success (Maia et al, 2011). Also, it is worth analysing state deforestation rates: if average deforestation rate decreased in the Amazon in 2011 overall, it has increased 100% in the state of Rondônia and 30% in Mato Grosso, where deforestation drivers are stronger.

Moreover, the in-depth analysis of the PPCDAM implementation leads to questions regarding the ownership of the deforestation reduction and the sustainability of the deforestation rate drop. In fact, several assessments show a lack of implementation of the first and the third pillars respectively covering tenure regularization and territorial management and incentives for sustainable

production[27] (Abdala & Reis Rosa, 2008) (Maia et al 2011). The implementation of the action plans of the Amazon state plans remains also extremely variable. Finally, coordination issues are also stressed by experts as possible threats, since curbing the indirect impacts of infrastructure projects, such as hydroelectric dams and highways, are not yet considered by the PPCDAM activities (Millikan, 2009) (Marquesini, 2008). A sustainable deforestation reduction will not rely only on monitoring and control, but needs also to be supported by the resolution of governance problems and provision of positive incentives.

3.4.2 Action Plan to prevent and control deforestation in the Brazilian Cerrado (PPCerrado)

The Brazilian savannah, also called cerrado, covers 24% of the Brazilian territory and had lost 47.8% of its forest by 2008. The average deforestation in the 2002-2008 period was 14 200 km² per year. In addition, fires are also an important problem of the cerrado.

On the basis of the National Program of Sustainable Use of the Cerrado enacted through the Federal Decree nº 5.577/2005, the Action Plan to Prevent and Reduce Deforestation in the Cerrado, PPcerrado, was first submitted to public consultation from September 2009 to March 2010. The action plan was launched in September 2010 and integrated in the National Climate Change Policy Act umbrella established by the Federal decree nº 7.390/2010.

To manage the 151 actions listed by the plan, the Executive office of the President coordinates an executive commission with representation of 17 ministries. The plan set a target of 40% reduction of deforestation by 2020 (considering the 2002-2008 baseline) and detailed activities for 2010 and 2011.

The Action Plan has organized its actions into four major pillars for 2011 and 2012:

i. Monitoring and control;
ii. Protected areas and territorial planning;
iii. Sustainable activities;
iv. Environmental education.

Since 18% of the 2002-2008 deforestation was concentrated in 20 municipalities, PPCerrado actions are meant to be implemented as a priority in these 20 municipalities. If deforestation in the cerrado has decreased significantly, the annual rates remain high: in 2009/2010, the Brazilian savannah lost 6 415 km².

3.4.3 Action Plan for Low Carbon Agriculture (ABC Plan)

The ABC Plan provides resources and incentives for farmers to adopt sustainable agricultural techniques. The objective is to mitigate and reduce the emission of the main GHG generated by agricultural activities - carbon dioxide (CO_2), methane (CH_4) and nitrous oxide. The overall objective of the plan is to enable agricultural and livestock producers to generate more income and produce more food for the population while increasing environmental protection.

[27] According to the Environment Ministry data quoted in the official assessment of the PPCDAM implementation: if 13 of the 17 activities of the pillar "Monitoring and control" were implemented from 75 to 100%, the proportion is 1 of 5 activities for the pillar "Tenure regularization and territorial management" and 4 of 19 in the pillar "Sustainable production incentives" (Maia, Hargrave, Gómez, & Röper, 2011, p. 29)

The main target of the Plan is to reduce GHG by 133 to 166 million tons in CO_2eq up to 2020. Specific objectives include: to contribute to the achievement of GHG reduction as established by international commitments; to guarantee the continuous and steady improvement of good agricultural practices that reduce GHG emissions and additionally increase carbon storage in vegetation and soil; to incentivize the adoption of strategies for plants, productive systems and rural communities, in particularly those most vulnerable to global warming scenarios in agriculture; and to engage efforts to reduce deforestation led by livestock and agriculture production in Amazon and Cerrado Biomes.

The Plan has six main strategies. Table 1 summarizes these strategies and their targets.

Table 1: ABC Plan strategies and targets

Strategy	Action	Target
No-tillage systems	The technique dispenses with the tilling of the soil and prevents erosion by sowing directly in the residues of the previous crop. Protects the soil, reduces water use, increases crop yields and reduces costs with machinery and fuel. The goal is to expand the current 25 million hectares to 33 million hectares.	To reduce the emission of 16 million to 20 million tonnes of CO_2 equivalent up to 2020.
Degraded Pastures Renovation	To transform the degraded land into productive areas for the production of food, fibre, meat and forests. The government wants to recover 15 million acres.	To reduce between 83 million and 104 million tonnes of CO_2 equivalent up to 2020.
Integrated crop-livestock- forestry systems	The system aims to switch to agriculture pasture and forest in the same area. This retrieves the soil, increase income and create jobs. The goal is to increase the use of the 4 million hectares.	To reduce between 18 and 22 million tonnes of CO_2 equivalent by 2020.
Planted Forests	The planting of eucalyptus and pine provide future income to the producer and reduce carbon dioxide from the air thanks to oxygen released by trees. The goal is to increase the area of 6 million	To reduce between 8 and 10 million tonnes of CO_2 equivalent by 2020.

	hectares to 9 million hectares of planted forests.	
Biological Nitrogen Fixation	The technique seeks to develop microorganisms / bacteria to capture nitrogen in the air and turn it into organic matter for crops. This allows to reduce production costs and improves the soil fertility. The government wants to adopt this method in the production on 5.5 million hectares.	To reduce the emission of 10 million tonnes of CO_2 equivalent by 2020.
Animal waste treatment	The initiative takes the waste from pigs and other animals for the production of energy (gas) and organic compounds. Another benefit is the possibility of certified emission reduction of gases emitted for the CDM market. The goal is to treat 4.4 million cubic meters of waste from pig farming and other activities.	To reduce 6.9 million tonnes of CO_2 equivalent by 2020.

The ABC Plan is in its initial stages of implementation and therefore it is not yet possible to evaluate its impacts. Preliminary results indicate an extremely low rate of uptake of the subsidized credit offerings available under the plan, despite its being showcased by the Ministry of Agriculture as its principal contribution to GHG reductions in the critical agricultural sector. However, the Plan will serve as the main strategy of the Forest Investment Program (FIP) in Brazil, in which concessional credit may attract greater adhesion among producers.

Also, there is a Bill on REDD+ under debate in different Commissions at the National Congress. This bill has been revised, and the most recent and more detailed version (PL 195/2011) provides a more comprehensive regulatory framework by addressing some of the key aspects which were left out in the original version. The REDD+ Bill clarifies that REDD+ activities shall encompass conservation measures, sustainable management of forests and enhancement of carbon stocks (jointly REDD+) and also foresees the creation of a committee to oversee and further regulate the implementation of REDD+ activities (Chagas, 2011).

The REDD+ Bill also proposes the creation of two different types of REDD+ units as a way to address the dichotomy between market and non-market based funding. A general category of REDD+ units, known as UREDD, entitles holders to receive benefits from national and international funding other than that based on market instruments (i.e. national and international funding in the form of grants). UREDDs would be non-tradable registrable units, each representing one tonne of verified emission reductions or removals from eligible REDD+ activities. A share of UREDDs could potentially qualify to generate certified REDD units ("CREDDs"), which are defined as tradable intangible rights. In contrast to UREDDs, CREDDs can be used as offsets or compliance both domestically (in the event of future state and municipal targets), as well as internationally (e.g. under foreign emissions trading programs or to assist in the achievement of a country's GHG reduction commitments under the

UNFCCC). A REDD+ committee would be responsible for determining the quantitative and qualitative criteria for the generation of CREDDs (Chagas, 2011).

The Bill does not establish any REDD+ specific target, but says that PPCDAm, PPCerrado, ABC Plan, PNMC, and the Brazilian national emissions Inventory for UNFCCC will be its main tools to implement REDD+. Overall, the proposed REDD+ Bill and the construction of safeguards are important steps in the regulation of carbon forest activities in Brazil. They allow for some harmonization among federal, state and municipal levels and establish the groundwork for further regulation of key aspects associated with the development and operation of REDD+ projects or programs.

On top of these initiatives Brazil has now different sub-national projects and policies for REDD+. The first state to create its REDD+ policy and project was the state of Amazonas in 2007. The state has created the Bolsa Floresta Program to reward forest managers for the environmental services provided by different conservation units in the state. In 2010 the state of Acre created its System for Incentives for Environmental Services (SISA) with the aim of valuing the forest standing and giving incentives for forest managers to do so. Other states, like Mato Grosso and Pará, are also developing their REDD+ policies and strategies.

Despite progress in policies related to forest conservation, however, recent government initiatives often emit contradictory signals, which clearly affect the drivers of deforestation, with important implications for the potential and limitations of REDD+. Particularly relevant examples include the following: (i) persistence of rural credit programmes that stimulate deforestation, especially for cattle ranching, (ii) large-scale infrastructure projects (iii) attempts to undermine the Brazilian Forest Code and other environmental legislation, among others. In summary, despite significant progress in some areas, mainstreaming development policies for the Brazilian Amazon and Cerrado still tend to be characterised by top-down decision-making, institutional fragmentation and dichotomies of 'development vs. environment', particularly in the electrical energy, transportation and agribusiness sectors (May et al, 2011).

3.5 REDD+ initiatives in Brazil: Global Accords on the ground

Deforestation trends in the Brazilian Amazon have been linked to globalised markets for minerals, beef, hides, timber, soybeans, biofuels and other commodities. There is now conflict between Brazilian national policies that encourage trade and commercialisation of these commodities, aiming to achieve economic and development goals, and those that seek to value the standing forest and its direct and indirect goods and services. At present, policies that privilege and encourage economic development, without environmental safeguards, have greater priority and impact than those intended to reduce deforestation and degradation.

Despite the proliferation of plans and instruments associated with reduction in deforestation, the Amazon Fund has become the principal instrument for implementation of REDD+ strategies in Brazil. Project activities of the Amazon Fund are primarily focussed on what can only be called "REDD+ Readiness", i.e., the implementation and improvement of monitoring systems and local institutions for climate related forest activities. There has been much less emphasis (only 7 projects out of 26) reviewed by Watson and Nakhooda (2012) focused on knowledge and awareness building. This likely reflects the significant progress Brazil has previously made in this area through efforts to conserve forests and through REDD+ activities. Strategies for addressing deforestation in Brazil are also relatively developed, including through a number of strategies and policies aimed at combating

deforestation, although some of the underlying legislation and regulations to protect Brazilian forests, as the Forest Code, are currently not secure. Unlike NGOs or private institutions States may only apply for funding from the Amazon Fund if they have submitted a state-level strategy to address deforestation. In this way the Amazon Fund creates an incentive for states to develop strategies but is focused on financing their implementation rather than their formulation, which suggests why no projects address the category of planning and strategy. The largest share of Amazon Fund activities support land use planning and coordination and the altering of forest management regimes. On contrary, the Amazon Fund has provided relatively limited finance for law enforcement related activities or tenure reform (Watson and Nakhooda, 2012).

The fact that the Fund is the main instrument for REDD+ generates a tension between domestic and international financial mechanisms for REDD+ implementation, ignoring the role of the private sector. Potential private sources of funds include: (i) carbon credits from national or regional emissions trading schemes; (ii) through a dedicated REDD fund mechanism; and (iii) funding from private sources such as voluntary carbon markets and philanthropy. Since REDD+ in international climate policy will be financed from a combination of donor and carbon market initiatives, this is an area that needs to be better explored by Brazil as it relates to national policy structures and the architecture of the emerging national REDD+ strategy.

Furthermore, the contradictory role of BNDES as manager of both climate funds as well as funds for infra-structure and development actions and programs, such as the Accelerated Growth Programme (PAC) clearly reflects the dichotomy of environment and development that characterises the Brazilian developmental path dependency.

A fundamental challenge for REDD+ implementation will be the development of national policies that can ensure efficient deforestation reduction while achieving an effective and equitable result. Current policies appear contradictory in these terms, as steps to reduce deforestation articulated in government policy appear uncoordinated, while proposals to incorporate REDD+ are in some cases targeted towards those who are legally liable for environmental enhancement.

REDD+ policies must be made consistent with trade, agribusiness and development policies, with which they currently conflict, by developing criteria and indicators for sustainable commodity production and trade as a basis for industrial purchase policies and government sanitary and environmental enforcement. Commerce and taxation issues associated with international trade in certified emissions reductions remain controversial.

Currently, Brazil's specific national level REDD+ policy design is evolving, but can be seen as embryonic at best. Policies that address deforestation and degradation, despite some state initiatives, either are still being planned, or have been subordinated to accelerated growth objectives. However, signs have emerged of coordination between states to change this scenario, which can be seen as a first step to guarantee effectiveness of REDD+ actions.

There is a need to clarify responsibilities at national and subnational levels through the creation of federal legislation that regulates REDD+ initiatives within the framework of overall national emissions reduction commitments and the full mix of sectoral strategies towards this end. At present, states are taking the lead in the process by launching state programmes and laws that permit REDD+ initiatives to be undertaken, as in Acre and Amazonas. Legislation on the topic remains decentralised

at the close of this article. Thus, the need remains for additional regulation at the federal level and in those states which have not yet legislated on this issue, as well as for an alignment of policy at federal and state levels.

Even with the implementation of plans to reduce deforestation and degradation in the Amazon and in the Cerrado, the current level of REDD+ core definitions remains quite scarce and fundamental questions will need to be answered in the REDD+ national strategy:

- How to nest the different scales of REDD+ initiatives?
- Which structures will need to be established to guarantee the success of the system (Monitoring Report Verification, Register, System for Information on Safeguards)?
- What will be the governance arrangements in terms of mandates?
- What will be considered as readiness and REDD+ activities?

Finally, it is worth mentioning that the legislative debates in the National Congress are not fully connected to the discussions led by the Ministry of the Environment on the REDD+ strategy. The two initiatives are not coordinated and present divergences that will need to be overcome in the legal formulation of the program.

3.6 Conclusions

With the current decline of deforestation in the Amazon, Brazil seems to be on track to meet its voluntary targets of mitigation actions. Nevertheless, it is worth mentioning that over the next years, specific issues are emerging that could jeopardize the results obtained so far. They are:

a) Participation and transparency in the design of the missing sectoral plans and the REDD+ strategy

In general terms, it is recognised in Brazil that channels of participation that articulate representatives of the population, forest managers and members of the public sector in practices related to management of public goods are extremely important for reducing GHG emissions (May et al, 2011).

The government has shown willingness to increase the communication with civil society on climate change issues when they created the Brazilian Climate Change Forum, a multi-stakeholder forum chaired by the President, involving key Ministers as well as civil society representatives. The forum responds to various climate change initiatives from the government and is intended to act as a bridge between the government and civil society, but has failed to some extent in this mission due to lack of transparency, centralization and ineffective communication strategies. Participation in the design of sectoral plans occurs to a greater extent through the Climate Observatory, a climate issues network formed by different NGOs and civil society representatives in Brazil.

In order to reach a position of real influence on the government's policymaking, there is a need for more transparency and the inclusion of different representatives of civil society in the climate debate in Brazil. To achieve this goal, it is necessary to focus on the dissemination of information among different actors and provide support and technical assistance in building capacity on the issues of climate change.

b) Monitoring actual implementation of policies and reorientation of strategies

An underlying problem in Brazil has been the lack of capacity for monitoring outcomes or evaluating long-term impact of policy investments and mitigation actions for climate change over time. Information about the effects of policies, the current state of affairs and autonomous development are necessary not only for policy accountability, but also for designing and modifying policies and strategies.

c) Coordination between sectoral plans and policies that are not included in the Climate Change National Policy

Integrating different instruments and policies in Brazil, considering mitigation and anti-mitigation initiatives, involves: (i) the need for thorough assessments of the impacts and effectiveness of policies (ii) perceiving that implementation is a more essential step than its formulation; (iii) the use of multiple complementary policy instruments, technically integrated and synergistically coordinated; (iv) horizontal and vertical coordination: sectoral policies and at different scales administration affect one another; and (v) stakeholder participation: the participation of civil society actors, governmental and private sector actors is essential for success in environmental policies integrated into productive sector policies. The horizontal and vertical coordination are important to avoid overlaps and contradictions of policies, as well as driving their implementation, ensuring consistency with the objectives of policies and institutions.

4 Constraints and Opportunities for the Implementation of Policy Mix Concepts in EU Nature Conservation Law

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4.1 Introduction

Making efficient and effective use of the policy mix concepts in practice requires not only an understanding of how well different instruments perform in promoting different policy objectives in general, but also how well they perform in a specific policy environment. This chapter will use EU nature conservation law as an example of how *de jure* and *de facto* constraints and opportunities on the use of different instruments could be taken into consideration in the design of a policy mix for the protection of biodiversity in habitats.

To this end, we will analyze the relevant provisions of nature conservation law, which can be found in the birds directive (BD) 2009/147/EC[28] and the habitats directive (HD) 92/43/EEC. For our purpose, however, these cannot be viewed in isolation, as they interact with related sectoral policies. Therefore, we will also analyze the Common Agricultural Policy (CAP) and the policies concerning the forestry sector. Policy mix concepts could help with current challenges of biodiversity protection in these fields, such as meeting the 2020 goal of halting biodiversity loss, after the 2010 goal was missed.[29]

As a basis for the analysis, we will give an overview over some important aspects, which should be taken into considerations in the design of a policy mix. This will allow us to better understand, how the existing constraints and opportunities affect the possibility to design a policy mix, which is both effective at providing biodiversity protection and efficient in the way it deals with conflicting environmental, social, and economic interests.

4.1.1 Policy Mix Elements

Policy mixes are composed of different types of policy instruments. We will subsume these under the two broad categories of command and control (CAC) regulations, referring to any instrument which prescribes or prohibits a certain behavior and is enforced via coercion, and economic instruments, which we will to describe any instrument working via incentives rather than coercion.

While there are many reasons for using a combination of instruments rather than a single instrument,[30] we will focus on the important issue of using multiple instruments to pursue multiple policy objectives,[31] specifically effectiveness in providing nature conservation, on the one hand, and efficiency in reconciling ecological with social and economic interests, on the other hand. It has to be stressed, that efficiency is important for biodiversity protection, because it not only means that a given degree of protection can be provided at a lower cost to society, but also that at a given societal willingness to pay for protection, a higher degree of protection can be achieved.

[28] This refers to the codified version of original Directive 79/409/EEC as amended.
[29] European Commission (2011a).
[30] Ring and Schröter-Schlaack (2011), pp. 16 et seq.
[31] Tinbergen (1952).

Pursuing both objectives requires a policy mix, because when a single instrument is used for biodiversity protection, there is a trade-off between the effectiveness and efficiency. CAC regulations have been shown theoretically and empirically to be effective at protecting biodiversity.[32] With regards to efficiency, however, the theoretical claim that economic instruments are superior to CAC regulations could not yet be disproven.[33]

Economic instruments are generally considered to be more efficient than CAC regulations. The basic idea behind this is that different addressees have different costs of complying with a certain regulation. By charging/paying a price (negative/positive incentive) for those behaviors, which negatively/positively affect others (negative/positive externalities), a policy maker can incentivize those addressees who have the lowest cost of complying to provide the highest degree of compliance and vice versa, rather than asking the same degree of compliance from everyone, regardless of their individual costs. If the policy maker sets the price level correctly, he or she can achieve the same result as with a CAC regulation at a significantly lower cost to society, because the policy instrument used incorporates everybody's private information about their individual cost of compliance. Of course in practice, the situation is not always quite as simple, which is why many types of economic instruments have been developed and sometimes economic instruments might not be able to improve efficiency.

In the case of biodiversity protection economic instruments alone might not have sufficient effectiveness. Ecosystems often exhibit so-called tipping points, causing them to collapse, if they are stressed beyond certain critical thresholds.[34] Economic instruments work best, when any amount of a targeted behavior, no matter where and when it occurs, can be measured a single "currency", and exhibit fluctuations in performance, if the prices in relevant markets fluctuate. Since these properties make it difficult to prevent the transgression of tipping points with economic instruments, it has been argued, that they lack the necessary dependability for the effective protection of ecosystems.[35]

A policy mix could, however, provide the opportunity to avoid the shortcomings of both types of instruments and combine their advantages to a certain extent. To do so, CAC regulations could provide a safe minimum standard, safeguarding species and habitats from critical impacts, for example by ensuring a sufficient network of undisturbed refuges for all threatened species and preventing excessive pollutant emissions, while economic instruments could increase the efficiency of the policy mix with regards to the less critical aspects of conservation, such as providing positive incentives to actively enhance the ecological value of a landscape and negative incentives to lower pollutant emissions further than regulations require.

4.1.2 Opportunities, Constraints, and the Distribution of Authority

Policy mix design is, however, not only influenced by these general considerations, but also by constraints and opportunities for the implementation of different instruments. In this context, it is important to take into account both constraints and opportunities, which are determined *de jure,* by

[32] Schröter-Schlaak and Blumentrath (2011), pp. 42 et seq.
[33] Schröter-Schlaak and Blumentrath (2011), pp. 47 et seq.
[34] Ring et al. (2010), pp. 17 et seq.
[35] Gunningham et al. (1998), p. 323.

explicit legal prescriptions, and those which exist *de facto* for example due to the institutional or organizational environment of an instrument.[36]

Besides analyzing whether a certain instrument can be introduced, it is also important to take into account which legislative or administrative body has the authority and capacity to introduce it. This is especially relevant in the EU, where this authority is distributed between the EU itself and its member states.

From an economic perspective, such a distribution of authority can be analyzed with the theory of fiscal federalism, which offers arguments for and against the centralization of authority.[37] Under this theory, decentralization of authority to the member states could yield efficiency gains from closer adaptation to local circumstances, while centralization at the EU level is supported by economies of scale and scope and could prevent a possible "race to the bottom", in which competition between the member states to attract business would lead to a lowering of nature conservation standards.

4.1.3 Structure of the Analysis

In the remainder of this chapter we will first outline the EU policies relevant to biodiversity protection in habitats (section 2). Based on this, we will analyze the resulting policy mix with regards to its effectiveness and efficiency (section 3). Subsequently, we will identify the scope the EU and its member states have to improve this policy mix (section 4). Finally, we will derive some policy recommendations from this analysis (section 5).

4.2 Existing EU Policies for Nature Conservation

4.2.1 Site Selection for the Natura 2000 Network

The selection of sites for protected areas is prescribed by the BD, which calls them special protection areas (SPA), and the HD, which calls them special areas of conservation (SAC). Together, SPAs and SACs constitute the Natura 2000 network. While the procedure in both directives differs, they have in common, that the selection of the areas to be protected should be based on criteria of ecological science alone, such as containing an endangered species or habitat type.[38] Economic or social considerations cannot be introduced into the process. In case of the HD, the process is especially strict, since, according to Article 4 HD, the European Commission directly identifies the SACs on the basis of ecological criteria. In the case of the BD, the member states have little more flexibility, since there is no common process of selection, but, according to Article 4 (1) and (2) BD, only a duty of the member states to classify the most suitable territories with regards to number and size as SPAs. In both cases, however, ecological interests are given clear priority over economic and social interests.

4.2.2 Instruments for the Implementation of the Birds and the Habitats Directive

To implement the protection Natura 2000 areas, Article 2 (2) obligates the member states to "maintain or restore" a "favorable status of conservation". To this end the HD prescribes measures for conservation management (Article 6 (1) HD), for the avoidance of the deterioration of habitats and of the disturbance of species (Article 6 (2) HD), and for ensuring that any plans or projects significantly affecting the site can only be allowed after positive impact assessment (Article 6 (3), (4)

[36] The concepts of "institution" and "organization" are used here according to the definition and distinction provided in North (1990), pp. 3 et seq.
[37] Faure (2000), pp. 478 et seq.
[38] See, for example, for SPAs ECJ C-355/90, ECR 1993, I-04221 – Santoña n. 18 ff.; Rs. C-378/01, ECR 2003, I-02857 n. 15 and for SACs ECJ C-371/98, ECR 2000, I-9235 n. 13-16, 22-25; C-226/08 n. 28 ff..

HD). According to Article 7 HD, the measures of Article 6 (2) – (4) are also applicable to the SPAs of the BD. Article 6 (1) HD is not applicable to SPAs, but Article 4 (1) and (2) BD prescribe similar measures, which are, however, not limited to protected areas.[39]

With regards to measures according to Article 6 (1) and (2) HD, the member states have some scope in their instrument choice, as they cannot only be implemented in a statutory or administrative, but also in a contractual manner. This so-called contractual nature conservation (CNC) can be considered an economic instrument, because it relies on paying private parties for measures on the basis of a voluntarily entered agreement rather than forcing them to conduct them. However, no matter, which instrument the member states choose, they still have to comply with their obligation to "maintain or restore" a "favorable status of conservation". [40]

Article 6 (4) HD provides an exemption from the ban on plans and projects, which do not pass the impact assessment test of Article 6 (3) HD, for cases, where other public interests clearly outweigh the ecological interests. To make use of such an exemption, impact mitigation measures need to be undertaken beforehand.[41] This provides scope for the introduction of another economic instrument, so-called "biodiversity banks,[42] which allow for the stocking of impact mitigation measures and are, for example, used in Germany in accordance with § 16 of the German nature conservation act.[43]

4.2.3 Instruments in the Agricultural and Forestry Sector

The instruments of the CAP, which are especially important to biodiversity protection, are the cross compliance (CC) requirements based on Article 4 et seq. of regulation 73/2009/EC on direct support schemes for farmers and the payment schemes based on Article 36 et seq. of regulation 1698/2005/EC on support for rural development by the European Agricultural Fund for Rural Development (EAFRD).

CC entails statutory management requirements according to Article 5 and Annex II of regulation 73/2009/EC, including compliance with EU environmental laws such as the BD and the HD, and minimum requirements for a "good agricultural and environmental condition" (GAEC) according to Article 6 and Annex III. CC is enforced through the gradual reduction of direct payments, which are otherwise granted to all farmers who fulfill the criteria. Therefore, CC can be characterized as an economic instrument, which provides a negative incentive.[44]

The EAFRD contains a number of payment schemes, which support objectives relevant to biodiversity protection in the agricultural sector, including agri-environment schemes (AES) (Article 39 of regulation 1698/2005/EC), natural handicap payments (Article 37), the Natura 2000 payments (Article 38) and the non-productive investment payments (Article 41). The most important of these instruments are AES, which provide payments to land-users who make a voluntary commitment to promote environmental objectives beyond the relevant mandatory requirements.

In general, there is much less EU policy-making in the forestry sector than in the agricultural sector. However, Articles 42 et seq. of regulation 1698/2005/EC provide payment schemes to the forestry

[39] Gellermann (2001), p. 69.
[40] Epiney/Gammenthaler (2010), pp. 152 et seq.
[41] European Commission (2007); Gellermann (2001).
[42] Lehmann et al. (2005), p. 15.
[43] Bundsnaturschutzgesetz (BNatSchG) 2010.
[44] Dhondt (2003), p. 263.

sector, which are very similar to the EAFRD payments schemes for the agricultural sector, plus additional payments for different afforestation measures. Especially, forest-environment schemes (FES) (Article 47), fulfill a role similar to that of AES in the agricultural sector.

4.3 Evaluation of the Existing Policy Mix

4.3.1 Site Selection

Due to the clear prioritization of ecological over economic or social interests, the site selection process for the Natura 2000 network strengthens the effectiveness of the policy mix, but, viewed in isolation, it leaves no room for efficiency. In the site selection process, even large economic or social interests cannot outweigh small ecological interests. As we will see below, this effect is, however, mitigated to some extent on the level of implementation, through the exemption rule of Article 6 (4) HD and through the possibility to introduce economic instruments.

4.3.2 The Birds and the Habitats Directive

On the one hand, the member states' obligation to "maintain or restore" a "favorable status of conservation" gives the member states an interest in ensuring the effectiveness of the implementation of the BD and the HD. Consistent with the clear prioritization of ecological interests in the site selection process, this obligation favors dependable and effective CAC regulations over less dependable economic instruments with a higher potential efficiency. However, the fact that the 2010 biodiversity goal was not met[45] shows that the overall effectiveness of the policy mix was lower than intended.

On the other hand, the priority of ecological over economic or social interests is not as strict on the implementation level as it is on the site selection level. There is even some scope for the member states to improve the efficiency of the policy mix through the introduction of economic instruments.

The explicit authorization for member states to use CNC agreements instead of CAC regulations could improve the efficiency of biodiversity protection in two ways, if certain conditions are fulfilled. If the payments made under the agreement reflect the market values of the ecological benefits provided by the land-users, the state could theoretically, firstly, attract those land-users, who can provide a certain ecological benefit at the lowest cost, and, secondly, incentivize them to do so by using those measures, which are most efficient for them individually.

The obligation of the member states to "maintain or restore" a "favorable status of conservation" on Natura 2000 sites might, however, limit the possible efficiency gains. Since this obligation must be fulfilled for all Natura 2000 sites, it is not possible to have those land-users on Natura 2000 sites be substituted by others, who can provide an equivalent ecological benefit at a lower cost. However, some efficiency gain can still be actualized if the land-users are paid for the ecological result they provide, rather than the measures they undertake.

The efficiency of the policy mix is also improved by exemption rule in Art 6 (4) HD, as it prevents low ecological benefits from being obtained at a high social or economic cost to society.[46] Here, the presence of an overriding public interest provides a basis to access a source of efficiency, which was not available in the case of CNC, by allowing the substitution of one ecological benefit within the Natura 2000 network for an equivalent one in the course of impact mitigation, which can also be

[45] European Commission (2011a).
[46] Unnerstall (2008).

generated elsewhere. This, of course, raises the problem of finding criteria for determining, which two ecological benefits can be viewed as equivalent.

The introduction of the economic instrument of biodiversity banks can improve efficiency of the exemption rule of Art 6 (4) HD even further, by increasing the range of possible substitutes. By using this instrument, the cheapest alternative to an ecological benefit that is very costly to society can not only be sought among different measures and in different places, but also among different providers and in different times. While this increase in flexibility increases the efficiency of protection, it also increases the urgency of ensuring the ecological equivalence of the substitutes.

4.3.3 The Common Agricultural Policy

From a theoretical perspective, the CAP appears to offer a good concept. CC provides negative incentives to the majority of farmers to ensure the compliance with minimum standards. AES payments provide additional positive incentives, which can be targeted at those, who can cheaply provide ecological benefits beyond the minimum standards of CC.

In practice, however, both instruments have several shortcomings. In an official evaluation of CC by the Court of Auditors in 2008, the instrument was criticized for being insufficiently monitored,[47] for being only partially implemented by the member states, [48] and for not demanding higher standards than other laws in many cases.[49]

AES have in some cases been found to have a high ecological effectiveness.[50] It has been criticized, however, that, overall, AES receive too little funding to effectively deal with the current environmental challenges agriculture faces.[51] It has also been argued, that the efficiency of AES is hampered, because they are often designed to be action-oriented instead of result-oriented[52] and cost-based, rather than market-based.[53] Just like in the case of CNC, this means that the instrument cannot select the cheapest providers of a certain ecological benefit and incentivize them to use the individually most efficient measures.[54]

The forestry sector is still mostly characterized by CAC regulations on the member state level, whereas the use of economic instruments for biodiversity protection is limited.[55] This might be partially explained by the fact that about half of the EU's forests are publicly owned,[56] since there are more direct ways of governing the use of public lands than via economic incentives. The provisions of the EAFRD are the most important basis for the introduction of economic instruments.[57] Like AES, FES needs to be result-oriented and market-based in order to develop their full efficiency potential.

[47] European Court of Auditors (2008), pp. 27 et seq.
[48] European Court of Auditors (2008), pp. 17 et seq.
[49] European Court of Auditors (2008), p. 16.
[50] Lehmann et al. (2005), pp. 23 et seq.
[51] SRU (2009), p. 17.
[52] Groth (2005), pp. 2 et seq.
[53] Raitanen, pp. 50 et seq.
[54] See above, section 4.3.2.
[55] FOREST EUROPE et al. (2011), p. 184.
[56] FOREST EUROPE et al. (2011), pp. 8, 107-110.
[57] MCPFE et al. (2007), pp. 121 et seq.; FOREST EUROPE et al. (2011), pp. 160

4.4 Scope for Improvements

As we can see from the above analysis, improvements would be desirable both with regards to the effectiveness as well as with regards to the efficiency of the existing policy mix for biodiversity protection in habitats.

4.4.1 Site Selection

In the process of site selection, the effectiveness of protection, on the one hand, is already relatively strong. On the other hand, the clear prescriptions of the BD and the HD leave no room for the introduction of economic instruments to increase efficiency. However, the economic and social interests of the member states have found recognition in the 5 % rule of Article 4 (2) of the HD, which allows member states, which contain an especially high share of the EU's priority habitats or species, to protect fewer areas than otherwise required via a more "flexible" application of the ecological criteria. This rule decreases the effectiveness of the overall network of protected areas, because the amount of biodiversity protection is lowered in member states with a high level of biodiversity.

As an alternative regime for site selection, the creation of an EU-wide permit market has been proposed, which could turn the economic burden of biodiversity protection into an opportunity for the member states to benefit from their ecosystems and could efficiently allocate protected areas to those sites, where the most biodiversity can be protected at the least cost.[58] This instrument, however, faces the above mentioned concerns with regards to the dependability of economic instruments.[59] Another alternative for compensating the burden of a high share of protected areas could be the instrument of ecological fiscal transfers,[60] which would, however, be very difficult to introduce on an EU-wide level.

4.4.2 Implementation of the Birds and the Habitats Directive

Concerning the implementation of the BD and the HD, the effectiveness, on the one hand, could be strengthened by introducing stricter CAC regulations either on the EU level or on the member state level, or by improving the enforcement of the existing regulations. Regulatory competition[61] could provide an argument strengthen measures on the EU level, as the member states might tend to provide lower less strict regulations and put less effort into enforcement than optimal. The improvement of efficiency, on the other hand, is constrained to the above mentioned, limited authorizations for the use of economic instruments.[62]

However, it has been criticized, that there is insufficient funding for the implementation of the BD and the HD.[63] The European Commission has considered the creation a fund dedicated to financing Natura 2000 measures, but eventually decided to provide funding only through measures in the relevant sectoral policies, such as the CAP, and to otherwise leave the financial responsibility with the member states.[64]

[58] Cliquet (2009), p. 172.
[59] See above, section 4.1.1.
[60] Ring et al. (2010), pp. 53 et seq.
[61] See above, section 4.1.2.
[62] See above, section 4.2.2.
[63] Gantioler et al. (2010), p. 19.
[64] European Commission (2004), pp. 9 et seq.

4.4.3 Instruments beyond the Birds and the Habitats Directive

Due to the limited funding, biodiversity protection in the EU also relies on instruments beyond the BD and the HD, such as the economic instruments of the CAP. As we have seen in the analysis of the CAP, both the effectiveness and the efficiency of these instruments leaves scope for improvement, either through the improvement of existing or through the introduction of additional economic instruments.

However, the improvement of existing as well as the introduction of additional economic instruments beyond the BD and the HD is also not unconstrained. Firstly, this is due to the distribution of authority between the EU and its member states.

On the one hand, the member states have greater freedom to introduce economic instruments which provide negative incentives, than the EU. The member states' fiscal sovereignty, for example, allows them to introduce instruments which reduce even those streams of income, which are increased by EU subsidies.[65] However, this freedom is limited by the loyalty principle of Article 4 (3) TEU. For the EU, the fiscal sovereignty of the member states leads to a limitation of the authority to introduce negative incentives to the explicit authorization of Article 192 TFEU.

On the other hand, the EU has greater freedom to introduce economic instruments which provide positive incentives, than the member states. The member states are constrained in the introduction of positive incentives for environmental objectives by the state aid rules of Article 107-109 TFEU, from which exemptions are only granted if the conditions of 107 (3) TFEU, the *de minimis* regulation of EC 1998/2006, general block exemption regulation of EC 800/2008, the environmental state aid guideline OJ 2008 C 82/01, or the agriculture and forestry aid guideline OJ 2006 C 319/01 are fulfilled.[66]

Given this distribution of authority, both the EU and its member states have a different comparative advantage at introducing economic instruments, which they should use to improve the policy mix for biodiversity protection. This allocates the primary responsibility for the provision of negative incentives to the member states and that for positive incentives to the EU.

In this situation, the CAP could theoretically make several valuable contributions to the policy mix for biodiversity conservation. The state of Europe's biodiversity is highly dependent on the prevailing agricultural practices, making it important to introduce ecological considerations into agricultural policy.[67] The possibility to use the existing instruments of the CAP for the purpose of biodiversity protection mitigates the otherwise insufficient funding.[68] With the EAFRD the EU makes use of its comparative advantage in contributing positive incentives to the policy mix. Due to regulation competition,[69] the member states might tend to provide less negative incentives than optimal. CC, which allows the EU to provide a negative incentive without infringing the member states' fiscal sovereignty, because it reduces only income streams generated by the EU itself, could theoretically provide a good way to deal with this shortcoming.

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[65] ECJ 222/82 *Apple and Pear*, ECR 1983, p. 4083 n. 31; ECJ 36 and 71/80 *Irish Creamery Milk Suppliers Association*, ECR 1981, p. 735 n. 24. Ext. Möckel (2006), pp. 137 et seq.
[66] Raitanen (2011), pp. 30-39.
[67] EEA (2010), pp. 4 et seq.
[68] See above, section 4.4.2.
[69] See above, section 4.1.2.

However, to make proper use of these advantages, the instruments of the CAP would have to be made much more effective and efficient. For CC, this would mean raising the requirements and improving the enforcement. For AES, this would require to increase efficiency by basing payments on the market value of the ecological results provided. This might face some difficulties, since at least in one case the European Commission did not allow market-based payments of state aid law, referring to compulsory requirements of WTO law.[70] Raitanen has, however, proposed a way for the member states to justify market-based payments under state aid law, by separating the natural functions of agriculture from its agrarian functions and classifying the former as "services of general interest" (SGEI).[71] As a general strategy to make the CAP more effective and efficient, it has also been proposed to focus payments under the CAP more strongly on the provision of environmental public goods, by shifting funds from the first pillar, financing direct payments and CC, to the second pillar, financing the EAFRD.[72]

The European Commission current proposal for the post 2013-reform of the CAP does not shift funds from the first to the second pillar.[73] The main proposed improvement in environmental terms is to make 30 % of the direct payments dependent on carrying out the three additional measures of growing three different crops, maintaining permanent grassland, and turning 7 % of the farmland into an ecological focus area.[74] If the proposal is adopted, such an action-based payment could improve the effectiveness of the policy mix, but it would not contribute much to improving its efficiency.[75]

In the forestry sector, the low proliferation of economic instruments provides a lot of potential for the improvement of efficiency. However, the shares of publicly owned and privately owned forests vary widely between the member states.[76] While economic instruments can provide efficient incentives to private land-users, it is questionable, whether they can do so with regards to public land-users. In the forestry, it might, therefore be easier to improve the policy mix within each member state individually, rather than finding solutions suitable to all.

4.5 Conclusion

To summarize, our analysis leads to the following recommendations for improving the effectiveness and efficiency of the European policy mix for biodiversity protection:

1. To improve the effectiveness and efficiency of the implementation of the `Birds Directive and the Habitats Directive, funding dedicated to biodiversity protection should be increased on the EU as well as the member state level.
2. To protect biodiversity in the EU it is also important to improve the effectiveness and efficiency of the instruments addressing the agricultural sector:
    a. Direct payments should be made contingent on cross compliance requirements which demand more than other legal requirements and which are effectively

[70] Raitanen (2011), p. 48.
[71] Raitanen (2011), pp. 49 et seq. Also see chapter 5.
[72] SRU (2009), p. 4 et seq.
[73] European Commission (2011b), p. 3.
[74] European Commission (2011c), Art. 29 et seq.
[75] See above, section 4.3.3.
[76] FOREST EUROPE et al. (2011), pp. 81 et seq.

monitored.

b. Agro-Environmental Schemes should receive sufficient funding and they should be developed towards the ideal of providing a market-based payment for ecological benefits provided.

3. The member states should individually explore opportunities to improve the efficiency of the policy mix for biodiversity protection in the forestry sector.

The analysis has shown significant differences in the *de jure* and *de facto* constraints and opportunities for the introduction of various instruments between the different policy fields related to nature conservation, on the one hand, and between the EU level and the member state level, on the other hand. Due to this, the EU and its member states have different comparative advantages in improving the policy mix. In general, the member states have greater freedom to introduce economic instruments which provide negative incentives than the EU, while the EU has greater freedom to introduce instruments, which provide negative incentives.[77] An overarching conclusion from our analysis is, therefore, that it is important not to design policy mixes for nature conservation in each field and on each level individually, but to take all fields and levels into consideration when searching for the optimal allocation for the different instruments in a mix.

[77] See above, section 4.4.3.

5 Economic Instruments for Biodiversity and the EU State Aid Regulation

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5.1 Introduction

There is a pressing need for developing new instruments to safeguard biodiversity and ecosystem services. Despite the numerous policies that have been developed during the long history of nature conservation, the attempts have turned out to be ineffective in stopping the loss of biodiversity. Because many environmental services are not traded in markets, but are rather public goods, their supply cannot easily be channelled by the market forces (Arentino—Holland—Matysek—Peterson, 2001). Instead, the market driven natural resource and land use changes lead to underinvestment in the public goods relative to what would be socially desirable. Regulatory instruments may not provide a sufficient basis for active biodiversity conservation because of their constraining and de-motivating character. Nor do they encourage public participation or innovation, but may even inadvertently discourage people from practising good stewardship and generate strong opposition among the affected groups. In contrast to this kind of restriction, financial instruments function as incentives for conservation (or disincentives for damaging) (Ring and Shröter-Schlaack, 2011). They are designed to modify behaviour by encouraging private individuals, organisations and businesses to participate actively in conservation or at least refrain from damaging biodiversity (Pannell 2008). Since nation states are ultimately responsible for providing public goods and hence also protecting biodiversity[78], it can be claimed that the society should meet some costs of the conservation on behalf of the private actors by granting aid for landowners who voluntarily commit themselves to biodiversity conservation and that actually, this aid could generate a positive motivation to participate and innovate among the land-owners.

However, the competition rules of the European Union restrict the use of economic instruments, or 'state aid', as defined in the Treaty on the Functioning of the European Union (TFEU). The rules on state aid define how aid and other benefits are granted to undertakings. State aid is forbidden if it is granted selectively to certain undertakings or the production of certain goods, if it distorts competition or threatens to do so and if it affects the trade between the EU Member States. However, some aid, e.g. for socially warranted purposes or for restoring damage caused by natural disasters, is exempted from this prohibition, and the European Commission has the power to grant exemptions to promote certain goals of common interest of the EU. Environmental protection is this type of a common interest goal, where aid would be used to correct the failure of markets to provide a public good, like biodiversity.

[78] See the Convention on biological diversity, United Nations 1992.

Although environmental protection is a legitimate ground for state aid, the terms under which it may be granted are not necessarily environmentally effective, nor economically efficient. This is because state aid is based only on the income losses and additional costs. Since maintaining or increasing biodiversity values generates no income for the landowner, the loss of biodiversity values cannot be compensated for by the state. For this reason, those landowners who possess the most valuable sites for biodiversity conservation may not find it compelling to make conservation commitments. Actually, sites with poorer diversity could be offered for protection because payments for such sites may be relatively higher than payments for ecologically more valuable, economically less productive sites.

This article analyses the regulatory frames under which economic incentives may constitute state aid in the meaning of 107 TFEU and the terms and conditions on which these aids may be granted to land-owners. We use the Finnish Funding for Sustainable Forestry as well as some other instruments as examples to examine the influence of the European State Aid Law on the development of national biodiversity conservation regulation. We identify ways to develop EU and national policies to include nature values in legitimate state aids.

The paper is structured as follows. First we present the key rules on the definition of state aid and environmentally relevant derogation from the rule. State aid might significantly affect the design of economic instruments, but this does not apply to all instruments. Second, we go through a set of environmental policy instruments to review the relevance of the state aid rules for these instruments. Third, we analyse the two key types of economic instruments – namely, payments for ecosystem services and nature value trading in land purchase – that are both problematic from the state-aid law point of view and extremely relevant for biodiversity conservation policy. Finally, we draw conclusions based on the analysis and discussion.

5.2 State Aid Regulation

5.2.1 Definition of State Aid

The key idea behind EU's competition policy and one of the primary objectives of the EU Treaty is that free markets would provide the best guarantee for improving citizens' living conditions in the EU. According to this idea, subsidies can reduce economic welfare by allowing inefficient firms to succeed at the expense of the more efficient ones. The resulting distortions of trade can lead to friction between Member States and to costly retaliatory measures. Furthermore, unless some supranational discipline is imposed, competition between governments to attract investment can lead to a subsidy race. The EU control system, based on an agreed set of principles anchored in the Treaties therefore aims at ensuring the benefits of economic integration (Buelens—Garnier—Johnson—Meiklejohn 2007). For unjust and selective advantages (e.g. direct grants and payments) to some undertakings decelerate the function of market forces, cause disorder in the common market *state aid* in the meaning of Article 107(1) TFEU is principally prohibited by the competition rules of the European Union.

Free markets do not always provide an optimal solution for societal problems due to various reasons. Hence, state aid may be declared compatible with the Treaty, provided it fulfils clearly defined objectives of common interest, such as services of general economic interest, regional and social cohesion, employment, research and development, environmental protection or the protection and

promotion of cultural diversity.[79] State aid measures can correct market failures through internalizing externalities and thereby improve the functioning of markets and enhance European competitiveness. In addition to being justified as such, environmental protection may also be considered a source of competitive advantage for Europe.

Article 107 TFEU regulates generally the prohibition of state aid and possible exceptions. The first part (107(1)) says:

> *Save as otherwise provided in the Treaties, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favoring certain undertakings or the production of certain goods shall, insofar as it affects trade between Member States, be incompatible with the common market.*

The first legal consequence of a measure being a grant of aid within the meaning of Article 107(1) TFEU is that it has to be notified to the European Commission according to Article 108(1). State aid may receive Commission approval without notification on the basis that it fits within an already notified and approved general aid scheme or so called "block exemption" Regulation[80]. The state aid rules also treat previously "existing aid"[81] differently from aid granted after a member state signs up. The difference is that existing aid is presumed lawful unless the Commission challenges it, whereas "new aid" is illegal until the European Commission approves it. Consequently the aid is illegal if it is granted without the Commission being informed or without its approval. A Member State is not allowed to implement the proposed measure before the Commission has taken a final decision in its favour. This so-called "stand still clause" is directly effective[82]. (Jans & Vedder 2008)

Before considering the question under what circumstances the Commission may consider new state aid compatible with the common market, it is important to define whether the measure in question is to be regarded state aid according to the Treaty. For this, it is necessary to understand the precise boundaries of state aid. The case law of the European Court of Justice states that the term "aid" must be interpreted broadly (Jans & Vedder 2008). However, there is no exhaustive definition for state aid in EU law. That is why the definition must eventually be made on a case by case basis.

According to settled case-law, four cumulative conditions must exist for a state measure to be classified as state aid[83]. The aid must:

1. be granted by a Member State or through state resources;
2. favour a certain undertaking or the production of certain goods;
3. distort or threaten to distort competition; and
4. affect trade between Member States.

[79] State Aid Action Plan, COM(2005) 107 final.

[80] Commission Regulation (EC) No 800/2008 (6.8.2008).
[81] Aid existing before Member State joined the Union.
[82] Case 47/69 *Steinike & Weinlig* [1977] ECR 595.
[83] Case C-280/00, *Altmark Trans GmbH* [2003] ECR I-07747.

Though state aid is basically prohibited under Article 107(1), paragraphs 2 and 3 of define the exemptions under which aid measures can be authorised. Member States cannot themselves assess the eligibility for aid, but a prior notification procedure is applied. Over the past tens of years, lot of secondary legislation and guidelines has grown up in order to give practical application to these exemptions. The rules must evolve to keep pace with economic and technological change, with the emergence of new political priorities. The increased emphasis placed on the protection of the environment over the last decade is an illustrative example of evolving political priorities (Buelens—Garnier—Johnson—Meiklejohn 2007).

Articles 107(2) and (3) enable aid that foster the growth of economy, competition and function of the common market, if such effects can be formulated. Regulation also allows aid as an instrument for public policy. The idea is that beneficial aids should be permitted (Siikavirta 2007). Article 107(2) lists the types of aid compatible as such and has little environmental relevance, exempt from the point 107(2)(b) *"aid to make good the damage caused by natural disasters or exceptional occurrences"*. In a case concerning the floods caused by the River Maas in the south-east of the Netherlands, aid was approved under the natural disaster or exceptional occurrence provision of that Article.[84] Also State aid N: o N 102/01 – *Finland Draft Decree of the Council of Ministers on compensation to fishermen for losses caused by seals* was justified on the ground of the Article 107(2)(b). The purpose of the draft Decree was to grant aid to fishermen for the catch losses caused by seals in 2000 and 2001 and it embraced partial compensation for proven catch losses, less a fixed amount to be borne by the fisherman[85]. However, due to the pressure from the Commission, Finland decided not to make the regulation permanent, although the need for it persisted. The dispute concerning the population sizes of fish and seals is still acute.

Article 107(3) stipulates the grounds for discretionary exemption to the ban on state aid. In the light of the integration principle such exemptions should be interpreted in an environmentally friendly way (Jans & Vedder 2008) for the requirements of environmental protection need to be integrated into the definition and implementation of competition policy, particularly in order to promote sustainable development. Two grounds for exemptions are essentially relevant for environmental state aid: Article 107(3)(b) *"aid to promote the execution of an important project of common European interest or to remedy a serious disturbance in the economy of a Member State "*[86] and,

[84] XXIVth Competition Report, point 354.

[85] Pursuant to point 2.9.3. (Aid to make good damage caused by natural disaster or exceptional occurrences) of the guidelines for the examination of state aid to fisheries and aquaculture (OJ C N:o 19, 20.1.2001, p 7): "According to article [107(2)(b) of TFEU], aid to make good damage caused by natural or exceptional occurrences is deemed to be compatible with the common market". Pursuant to Council Directive 92/43/EEC ringed seal and gray seal are protected species. The aid was thus justified on the exception grounds (article 16) of that directive. Accordingly, "provided that there is no satisfactory alternative and the derogation is not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range, Member States may derogate from the provisions-- to prevent serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property--". From that aspect, and foremost taking into account the exceptional increase of the seal population, the hunting prohibition of the seals and the size of the damage caused, there was a reason to assume that the aid was meant to compensate the damage caused by natural disaster.

[86] The Court held, in the Case 62/87 *Exécutif régional wallon and SA Glaverbel v Commission of the European Communities.* [1988] ECR 1573, para 20–22, that "a project may not be described as being of common European interest for the purpose of that Article [107(3)(b)] unless it forms part of transnational European programme supported jointly by a number of governments of the Member States, or arises from concerted action by a number of Member States to combat a common threat such as environmental pollution".

topmost, Article 107(3)(c) *"aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest"*. Additionally, when assessing aid in fields other than that of the environment, the Member States should take environmental effects of aid into account. Equally, aid for projects which entail disproportionate negative impacts for the environment should be avoided. These so-called 'perverse' incentives emanate from policies that induce behaviour that is harmful for environment, often as unanticipated side effects of policies designed to attain other objectives, i.e. certain aids for agriculture or regional cohesion. As a recent example, Aichi Biodiversity Target no. 3 of the Strategic Plan for Biodiversity for the 2011-2020 period stipulates that by 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio-economic conditions. Finally, it is the responsibility of the Member States to show that the aid benefits the environment.

Generally, all aid distorts competition. Yet, the state aid rules aim to defend potential foreign competitors and hence an economic activity which is purely local in nature[87] does not fall into the definition of state aid. When either the undertaking or other actors of the sector trade across Member States, the state aid laws apply. In addition to this, whether the measure in question is state aid in the meaning of Article 107(1) depends on the conditions of selectivity and of whether the aid is granted by the state or through state resources.

5.2.2 Services of General Economic Interest (SGEI)

The prohibition on state aid under Article 107(1) TFEU is not absolute. In addition to the circumstances specified in Article 107(2) and (3), which are of general application, Article 106(2) TFEU provides for a specific, limited exception for SGEI. Under Article 106(2):

> *Undertakings entrusted with the operation of services of general economic interest or having the character of a revenue-producing monopoly shall be subject to the rules contained in the Treaties, in particular to the rules on competition, in so far as the application of such rules does not obstruct the performance, in law or in fact, of the particular tasks assigned to them. The development of trade must not be affected to such an extent as would be contrary to th*e *interests of the Union.*

Until the judgment of the Court of Justice in the *Altmark*[88] case in 2003, it was not fully clear whether a compensation granted by a public authority for the performance of SGEI came within the scope of Article 107(1) and so constituted state aid. The *Altmark* case lays down four cumulative conditions under which public service compensation does not constitute state aid[89]. Where these four criteria

[87] An example of local economic activity without trade effects is for example an amusement or sport facility that is built for the use of local residents and does not affect tourism (Commission decision N258/2000 Leisure pool Dorsten, 21.12.2000). It does not affect trade between member states.

[88] Case C-280/00

[89] *First*, the recipient undertaking must actually have public service obligations to discharge, and the obligations must be clearly defined. *Second*, the parameters on the basis of which the compensation will be calculated must be established in advance in an objective and transparent manner. *Third*, the compensation cannot exceed what is necessary to cover all or part of the costs incurred in the discharge of public service obligations.

are not met, public service compensation does constitute state aid.[90] The General Court clarified that the purpose of the four *Altmark* conditions is exclusively that of the classification of the compensation as state aid or not, while Article 106 (2) constitutes the basis for the compatibility of financial compensation which do not comply with all those 4 conditions[91].

According to Commission's unofficial definition SGEIs are economic activities that the member states identify important to citizens and that would not be supplied if there was no public intervention (e.g. Siikavirta 2011). Common examples of SGEI are transport networks, postal services and social services. For this article it was necessary to study if it is possible to count biodiversity and ecosystem services as SGEI and on what conditions the public funding is allowed. For example, in Finland many habitat types that suffer from over-growing (e.g. esker forests) need silvicultural measures such as clearing of excessive vegetation but the landowner cannot be obliged to commit these tasks. Therefore, to make biodiversity preservation more efficient e.g. in legally protected private lands, the possibility to use the concept of services of general economic interest (SGEI) should be more widely investigated.

As a point of departure, we can note that it is clear that production of biodiversity and ecosystem services is not safeguarded. It is also clear that these services are important to all citizens and public intervention is necessary because markets are not functioning well on this respect. So it seems that it would be possible to nominate these services as SGEI. Then it would be easier to increase supply by financing through the public budget. In fact, as will be demonstrated later in this article, commission has accepted the idea that some nature conservation measures taken by private parties can be seen as SGEI because they genuinely serve the interest of citizens[92]. However, whereas, within the agri-environmental schemes the activities which are beneficial for the environment cannot be carried out by the state, but can only be carried out by undertakings on a voluntary basis - the SGEIs are tasks on which Member States have imposed a special public service obligation. The SGEI relate to operations which serve the whole society and fulfil the functions of the Member State, which then may entrust these tasks to other entities. In this sense, the SGEI differs from a classical environmental aid measure.

Public financing of SGEI is allowed if it is impartial and does not overcompensate the costs and reasonable profit of the activity. Costs may accrue due to production cost (working time, use of machinery etc.) or due to the loss of expected business profit (opportunity cost). Costs may differ a great deal. The nature conservation or ecosystem services may affect plans for forestry, agriculture, construction, mining or some other economic activities.[93]

Fourth, where the undertaking which is to discharge public service obligations is not chosen pursuant to a public procurement procedure which would allow for the selection of the tenderer capable of providing those services at the least cost to the community, the level of compensation needed must be determined on the basis of an analysis of the costs which a typical undertaking, well run and able to meet the necessary public service requirements, would have incurred in discharging those obligations.

[90] http://ec.europa.eu/competition/state_aid/legislation/sgei_report_en.pdf.
[91] Case T-354/05, *TF1* [2009] ECR II-00471, point 130-135.
[92] NN 8/2009 Transfer of natural protection areas to new owners and measures for biodiversity, para 58.
[93] Currently it is common to compensate the lost value of timber, but it may be necessary to compensate also other economic values.

5.3 Policy Instruments likely to Constitute State Aid

As a response to the pressing needs to combat the continuing loss of biodiversity, new economic policy instruments have been developed. In this chapter we first present a number of economic instruments discussed as possible policy response to environmental problems and then analyse the relationship between the instruments and state aid regulation, with the aim to assess which of the selected biodiversity conservation instruments are likely to constitute state aid in the meaning of article 107 TFEU.

We have chosen environmental taxes, tax reliefs, environmental subsidies, tradable permits, habitat banking, environmental certificates and ecological fiscal transfers as examples of instruments. It should be noted that variation between individual applications of the same instrument may be significant in legal terms and hence this chapter aims to provide a coarse analysis before we will study in details some examples.

First, one can exclude *environmental taxes, fees and charges* from the definition of state aid for no grant from state`s resources occurs. State aid comes into question only when taxes, fees and charges are distortionary meaning that some economic enterprise does not have to pay these remittances. A tax to some firms is a subsidy to competitors who do not have to pay.[94] Having said this, it seems clear that *tax relief* as well as *subsidies* based on public financing constitute a grant through state resources. In addition, if the measures are selective, they most probably constitute state aid.

There is no legal difference whether the aid is granted by state or by a lower governance entity, such as a county, federal authority, municipality or any other body using public authority. However, transfer of assets between public authorities is not generally regarded as aid. According to Ring (2008) investments and maintenance of socio-economic public sector functions of urban agglomerations (such as schools, hospitals, and theatres) have long been a justification for targeted fiscal transfer schemes. Targeted fiscal transfers are a suitable instrument for internalizing positive externalities. In the case of ecological fiscal transfers, this means greening the public expenditure. Protected areas, for example, involve land-use restrictions that may force municipalities to forego development opportunities that would generate communal income. If transfers are made to compensate for these protected areas, their acceptance could be increased both at the municipal decision-making level, and by citizens in the area. Brazil and Portugal have implemented ecological fiscal transfers, compensating municipalities for land-use restrictions imposed by protected areas. *Ecological fiscal transfer* is state aid if it ends up giving advantage to certain undertakings. As a conclusion, if a municipality addresses the assets that it has received as central government transfers forward to certain undertakings, the measure is state aid and the municipality is the “aid-official”. If however, the assets received as central government transfers are not delivered forward to undertakings (e.g. the measure does not provide tax reliefs or any other subsidies), but are rather just used to level the loss of municipals tax income[95] caused by land use restrictions, the measure is presumably not regarded as state aid (in practice this might allow keeping municipal tax levels low and hence also benefit local undertakings).

Tradable permits, and possibly also biodiversity offsets and *habitat banking*, may constitute state aid if the trading instruments set by the officials are seemingly artificial, discriminatory

[94] Case C-169/08, 17.11.2009.
[95] See Act 1704/2009 Laki kunnan peruspalvelujen valtionosuudesta, chapter 7.

or create economic advantages. The Commission considers the emission trading instruments (and possible habitat banking instruments) such as quotas, allowances, certificates and credits to be intangible assets for recipients if they are tradable in the market. However, when the state on its own initiative allocates such assets free of charge to undertakings/sectors in a way affecting trading between member states, the allocation can constitute state aid[96].

As such, *certificates* do not generally constitute state aid if the measure does not use funds from the state budget.[97] In its decision on the green oil certificate system in Sweden (N789/2002) the Commission held that an advantage given to the producers of green oil through granting them free oil certificates, which they can sell to the suppliers on the (future) green certificate market, does not constitute state aid.[98] For the grant of free green certificates does not cause revenue forgone to the state. Neither does the obligation by the state for licensed electricity suppliers to purchase a certain amount of green certificates (comparable to the obligation to purchase electricity produced from renewable energy sources at fixed minimum prices[99]). However, if the certificate scheme includes sanctions for omission to buy a certain amount of certificates and suppliers who do not have sufficient amount have to pay a fine to a fund from where those payments are granted forward to the producers to provide them a "guarantee price", such fund-based procedure may constitute state aid.[100]

Especially habitat banking and certificate schemes may coexist with some kind of *fund-based financing*, which for that reason is target for closer scrutiny. Also, depending on the amount of state`s control, fund-based financing may be regarded as given through state resources. However, interpretations vary. As enshrined in *van Tiggele*, the Court also confirmed in the *Sloman Neptun*[101] that “advantages granted from resources other than those of the state do not fall within the scope of the provisions in question”. In some cases the Commission has regarded fund-based measures as aid, yet compatible with the common market in the light of environmental protection. In Dutch case the Commission authorised two measures called MEP (*Milieukwaliteit van de ElektriciteitsProductie* — Environmental quality of electricity production), aimed at stimulating renewable energy[102] and

[96] See National allocation plans for Emissions trading: http://www.europa.eu.int/comm/environment/climat/emission_plans.htm.

[97] In order to decide that the notified measure on green certificates constitutes state aid, the Commission has to determine whether state resources are at stake. See eg. Commissions decision N 504/2000, p 11.

[98] "De svenska myndigheternas avsikt är att ge producenter av grön elektricitet extrainkomster genom försäljning av elcertifikat på marknaden. Systemet utgör därför en förmån för dem. Orsaken till att förmånen ges till dessa producenter är att det av miljöskäl är önskvärt att höja den gröna elektricitetens konkurrenskraft på den avreglerade elmarknaden. En åtgärd utgör emellertid inte statligt stöd om det inte är fråga om statliga medel. Kommissionen har redan slagit fast att utdelning av gratis elcertifikat till producenter inte innebär någon förlust av statliga medel, eftersom certifikaten endast är ett bevis på att grön el har producerats. Inte heller i föreliggande fall tas medlen från statsbudgeten, utan dessa betalas av alla elförbrukare – myndigheter, företag och enskilda – som omfattas av skyldigheten att köpa elcertifikat. Elleverantörerna hanterar endast inköpsskyldigheten för slutkonsumenterna och får en hanteringsavgift för dessa tjänster". Statligt stöd N 789/2002 – Sverige Elcertifikatsystemet (C(2003)382fin).

[99] See case C-379/98, *PreussenElektra. [2001] ECR I-02099*.

[100] See Commission decisions N 789/2002 and N 504/2000.

[101] Joined Cases C-72/91 and C-73/91 *Firma Sloman Neptun Schiffahrts AG v Seebetriebsrat Bodo Ziesemer der Sloman Neptun Schiffahrts AG*. [1993] ECR I-00887, para 19.

[102] N 707/2002, MEP - Stimulating renewable energy, 25.6.2003.

combined heat and power (CHP) production[103]. The purpose of this subsidy scheme was to increase supply. The scheme was financed through a compulsory contribution by electricity consumers in the form of an increased connection fee that was fed into a fund. The fund will favour Dutch producers of renewable electricity and of CHP electricity who feed their electricity into the high-voltage grid. The Commission noted that the fund was set up by the state, is managed by the state company and will support only Dutch producers of renewable electricity and of CHP electricity. The Commission therefore concluded that the scheme constituted state aid within the meaning of Article 107(1) of the Treaty and thus assessed the measures in the light of the Community guidelines on state aid for environmental protection.[104]

In summary, state aid regulation is relevant for a number of economic environmental policy instruments such as tax reliefs, subsidies, fiscal transfers, fund-based financing, tradable permits and liability compensation schemes, because they may be considered state aid in the meaning of the Article 107(1) TFEU. Each instrument need to be assessed case-by-case and it is not possible to draw categorical conclusions with regard to these categories of the instrument. For example some forms of ecological transfers would clearly be state aid whereas some others not. On the other hand, taxes, fees and charges are unlikely to be state aid. Once a measure is considered state aid, it must then be decided whether it still could be - and on what conditions - compatible with the common market in the light of environmental protection.

5.4 Payments for ecosystem services and nature value trading in land purchase

In contrast to the above described relatively flat economic instruments, new environmental policy instruments are more targeted. Payments for environmental services (PES) and nature value trading applied to land purchase apply strict criteria and justify selection procedures with cost-effectiveness of the use of public funds (Pascual—Muradian—Rodríguez—Duraiappah 2010) (Primmer—Paloniemi—Similä—Barton 2011). An additional reason for the targeting of the measures is that the nature values to be protected are unevenly distributed across the landscape and the land-owners. These instruments have become popular means of biodiversity conservation first outside Europe and recently also in the European states (Farley & Costanza 2010). With the legal restrictions on state aid, these instruments are particularly interesting, as they are directly targeted at protecting the environment, which is of common interest. Although the Commission is bound by the guidelines and notices that on issues in the area of supervision of state aid, it has a wide discretion. Exercising the discretion involves economic and social assessments. We will analyse the Commission`s practice regarding PES and nature values trading to scope the state aid challenges that these conservation instruments deal with.

PES-terminology is applied to a wide range of very diverse situations and there is no single definition of PES (Pascual et al., 2010). According to *Wunder* (Wunder 2005) a PES scheme is a voluntary transaction where a well-defined environmental service (or a land use likely to secure that service) is being "bought" by at least one buyer from a (minimum of one) environmental service provider if, and only if, the environmental service provider secures environmental service provision. PES schemes redistribute wealth by making direct payments or compensations (Pascual et al., 2010; Vatn, A. 2010) to those who produce the conservation benefit. In the past decade, PES schemes have rapidly

[103]N 708/2002, MEP – Stimulating CHP, 25.6.2003.
[104] European Commission, XXXIIIrd Report on Competition Policy 2003, p. 102.

developed around the world and they encompass a diversity of mechanisms. In the following, some cases from different EU Member States are scrutinized to introduce the challenges with payments for environment-related services. In the following, we analyse PES application experiences and their conflict with the state aid law in Germany, Finland and the Netherlands.

5.4.1 German Nature conservation areas

The state aid programme *NN 8/2009 – Germany Nature conservation areas* consisted of the gratituitos transfer of federally-owned natural heritage sites and the funding of large-scale nature conservation projects. Pursuant to the description of the scheme, valuable natural heritage sites existed on federally-owned land in Germany. However, due to budgetary constraints the German authorities found it increasingly difficult to finance the long-term upkeep and development of these areas, which they needed to ensure their proper upkeep. Experience gathered had shown that, where such areas were sold to private individuals, their nature value was significantly degraded over the years. Besides, nature conservation organizations did not have the financial means to purchase the federally-owned land and to pay for follow-on costs.

Germany therefore decided not to sell the areas, but to transfer responsibility for the conservation of these areas of outstanding naturalistic value to the *Länder* and the *Deutsche Bundesstiftung Umwelt* (DBU, German Environment Foundation). The *Länder* were entitled to further transfer these areas gratuitously to nature conservation organizations. While ownership of the land was transferred to the recipients free of charge, all other costs related to the transfer (for example surveying costs and taxes) as well as maintenance costs and inherited pollution risks were borne by the recipients of the areas. The federal programme for the establishment and protection of valuable natural areas and landscapes of national importance, aimed to finance projects on conservation of landscapes and natural heritage sites. The main aim of the measures was the maintenance of biodiversity.[105]

In its assessment the Commission held that the nature conservation entities were undertakings[106] and that the measures constituted state aid[107]. The Commission considered that a necessary precondition for qualifying a measure as services of general economic interest (SGEI) is that it genuinely serves the interest of citizens. The conservation tasks entrusted by Germany to the nature conservation entities pursued objectives which are in the interest of society as a whole, namely the preservation of intact habitats of outstanding naturalistic value for future generations. These tasks, which can be construed as services rendered to all citizens, clearly fall within the remit of the state acting as public authority, which however may find it appropriate to entrust them to other entities, for example for budgetary reasons. "In that sense, the scheme differs from a classical environmental aid measure: in the latter case the activities which are beneficial for the environment cannot be carried out by the state, but can only be carried out by undertakings on a voluntary basis". Therefore, the Commission accepted that the conservation tasks at issue may constitute a service of general

[105] NN 8/2009, points 8–17.
[106] "According to settled case-law, any activity consisting in supplying goods or services on a given market is an economic activity. The Commission considers that, in the case at hand, activities like sales of wood, leases of land and tourism must be classified as economic in nature. The German nature conservation entities concerned by the notified measures should therefore be considered as undertakings within the meaning of Article 107(1) of the EC Treaty insofar as they exercise these activities", point 41.
[107] NN 8/2009, points 43–52.

interest. The Commission assessed the compatibility of the aid on the basis of the post-Altmark package[108] and concluded that the measure was compatible with the common market.

The separation between the tasks of the scheme and a classical environmental aid measure seems rather artificial, since the ownership of the land was transferred to the recipients. However, as will become evident in the following, the agrarian function of a farmer's land cannot be disconnected from its recreational or natural functions. Hence, the agri-environmental aid measures have to be assessed under the agriculture and forestry aid guidelines (not on the basis of the post-Altmark package).

5.4.2 Southern Finland Forest Biodiversity Programme

The Southern Finland Forest Biodiversity Programme (METSO), launched in 2002, introduced two new economic conservation instruments: nature values trading and bidding competition. They were based on voluntary offering of sites and negotiations on payments for conservation. The METSO nature values trading produced mainly ten year contracts where compensation was paid for loss of forest income, and to some degree, based on the biodiversity values on the sites (Paloniemi & Varho 2009). A bidding competition was used to attract landowners whose lands hosted certain biodiversity values in targeted areas. They led through negotiations, mostly to permanent conservation or land purchase. The compensation or payment for these conservation contracts were tied either only to the potential forest revenue, or to that potential and to the conservation value as represented by surrogate indicators (e.g. decayed wood, large aspen trees) (Horne 2006).

These measures were in line with the 107(3)(c) TFEU under the previous guidelines on state aid for agriculture sector, pursuant to which "the Commission takes a favorable view of aid schemes which are intended to provide technical support in the agricultural sector. Such soft aids improve the efficiency and professionalism of agriculture in the Community, and thus contribute to its long-term viability while producing only very limited effects on competition. Aid may therefore be granted at a rate of up to 100 % of costs to cover activities such as dissemination of knowledge relating to new techniques, reasonable small scale pilot projects or demonstration projects".[109]

Since new guidelines on state aid for agriculture and forestry became effective 2007, this also caused changes on the aid measures within METSO program[110]. A Commission decision enshrines the

[108] Public service compensation which cannot be qualified as non-aid on the basis of the Altmark criteria may, however, be found compatible if it complies with the conditions laid down in the Community Framework for state aid in the form of public service compensation. Community Framework for state aid in the form of public service compensation (OJ C 297 29.11.2005).

[109] Community Guidelines for State Aid in the Agriculture Sector (OJ C 28 1.2.2000), point 14.1. Pursuant to the new guidelines Community Guidelines for State Aid in the Agriculture and Forestry Sector 2007 to 2013 (OJ C 319, 27.12.2006) “aid granted for private landowners for pilot and demonstration projects connected to sustainable use of forests will now be authorised if the aid fulfils the conditions set out in point 107 of the guidelines. Accordingly, the Commission will examine such activities on a case by case basis and the Member State shall provide a clear description of the project including an explanation of the novel character of the project and of the public interest in granting support for it (for example because it has not been tested before) and demonstrate that the number of participating companies and the duration of the pilot scheme shall be limited to what is necessary for proper testing, the combined amount of aid for such projects granted to a company shall not exceed EUR 100 000 over three fiscal years, the results of the pilot scheme shall be made publicly available and that any other condition the Commission may deem necessary to avoid the scheme having a distorting effect on the market or amounting to operating aid”.

[110] A new METSO programme 2009-2016 institutionalizes voluntary site allocation and a possibility to make fixed term conservation contracts.

compatibility of biodiversity conservation measures in a current state aid practice. *State aid No N 130a/2007 – Finland - Aid for forestry* involved maintaining and restoring ecological, protective and recreational functions of forests, biodiversity and healthy forest ecosystems. The Finnish authorities affirmed that grants were discretionary and granted only for schemes that were significant for biodiversity preservation, aid can never exceed 100% of the actual costs of the conservation and the authorities monitor that too high aid amounts will not be paid. The aid will only be granted for tasks that are started after the Commission`s approval.[111]

The Commission regarded that the aid had an incentive effect and examined it against the background of Chapter VII of the Community Guidelines for State Aid in the Agriculture and Forestry Sector 2007 to 2013[112]. The aid scheme included plenty of measures, many of which were not related to biodiversity conservation, but other forest functions. The environmental aid will be viewed closer here.

In addition to the measures described above, an additional measure, called environmental aid for forestry, was adopted in Finland in 1996. According to § 16 of *Law on financing sustainable forestry*[113], aid may be granted for commitments to improve biodiversity in forests or as compensations of excessive income loss from protecting particular habitats defined in the Forest Act on the basis of 10-year contracts. Such aid was regarded as being in accordance with point 176 of the Commission guidelines. Pursuant to that point, actions are compatible with Article 107(3)(c) of the Treaty if the aid meets conditions laid down in Article 47 of Regulation (EC) No 1698/2005. Accordingly, "payments shall be granted to beneficiaries who make forest-environmental commitments on a voluntary basis. These payments shall cover only those commitments going beyond the relevant mandatory requirements and shall be undertaken for a period between five and seven years. Where necessary and justified, a longer period shall be determined for particular commitments. The payments shall cover additional costs and income foregone resulting from the commitment made. Support shall be fixed between 40 and 200 Euros per hectare"[114].[115]

Biodiversity value -based payments are no longer granted, because the Commission will only authorise state aid for the additional costs and income foregone. Whereas in the pilot phase the compensation or payment for conservation contract was tied either only to the potential forest revenue, or to that potential and to the conservation value, the compensation is now based only on the market value of the timber in the area to be protected[116]. Aid exceeding the amounts fixed in the Annex to Regulation (EC) No 1698/2005 can in principle only be declared compatible with Article 107(3)(c) of the Treaty if granted for demonstrated additional costs and/or income foregone. In exceptional cases specific circumstances to be duly justified can be taken into account if they lead to a demonstrable and significant positive effect on the environment.[117]

The Finnish authorities grant payments per contracted hectare of forest to beneficiaries who make forest-environmental commitments that go beyond the relevant mandatory requirements on a

[111] N 130a/2007, paras 9–12.
[112] N 130a/2007, paras 29–31.
[113] Law and decree on finance for sustainable forestry (Laki ja asetus kestävän metsätalouden rahoituksesta).
[114] (EC) No 1698/2005, article 47 & ANNEX.
[115] N 130a/2007, paras 48–49.
[116] N 130a/2007, para 20.
[117] Community Guidelines for State Aid in the Agriculture and Forestry Sector 2007 to 2013, point 177.

voluntary basis. However, the duration of these commitments is 10 years and the payment exceeds the maximum amount of 200 Euros in some cases. Since Finland`s forests are located in subarctic area where the nature renews slowly, the populations of flora and fauna need enough time to recover. The Commission therefore assessed that only longer-lasting measures have a positive effect on biodiversity and approved the exceptional contract period of ten years. The payments may cover additional costs and income foregone resulting from the commitments made. On ground of calculation made by the Finnish authorities, some areas in Southern Finland have such high income value that the aid amount exceeds 200 Euros per year. The Commission considered that the limit of 200 Euros is exceeded only in some areas which are proved to be exceptionally valuable in biodiversity and the compensation is based on actual income forgone. It is also required that such commitments would not be made on normal payment level. Hence, in such special situations caused by exceptional circumstances aid amounts exceeding 200 Euros per hectare may exceptionally be accepted.[118]

Pursuant to point 175(d) of the Guidelines state aid for restoration and maintenance of natural pathways, landscape elements and features and the natural habitat for animals, including planning costs, is compatible with Article 107(3)(c) TFEU. Aid can be accepted up to 100% of eligible costs. Thus, aid meant for biodiversity preservation in committed areas is compatible up to 100% of eligible costs and may be granted by the Finnish authorities.[119]

5.4.3 Agri-environmental schemes in the Netherlands

Netherlands´ case relates to both resources and barriers for establishing new agri-environmental schemes. Two local nongovernmental nature and landscape organizations and local agricultural nature association took the initiative to involve farmers in the management of the countryside to sustain the mixed landscape of cultural and natural grounds. Financial means were considered necessary to pay for their activities. Instead of working with a fixed set of measures, as in the traditional agri-environmental schemes, the initiative was intended to draw up “custom-made contracts” based on market-based prices. The introduction of the concept of green services (GS) reframed the maintenance of landscape and nature, from a costly external circumstance into a desirable social demand. Instead of compensating these activities as additional labor costs, they should be rewarded with a market-related price. (Zwaan & Goverde 2010)

The initiative was included in a pilot project by the Ministry of Agriculture, Nature and Food (ANF), which supported and facilitated bottom-up initiatives that sustained the quality of the rural landscape. However, the European Commission stated that market-based payments to farmers granted by governments would be considered as market distortion and therefore would not be allowed. Instead, payments could be based only on the loss of revenues and additional labor costs. These requirements could neither be changed because of international agreements[120]. (Zwaan & Goverde 2010)

Hence, to make certain that the pilot projects would meet the EU state aid requirements for farmers, the Ministry of ANF required that the GS projects would be notified to and approved by the Commission. Farmers could be paid only on the basis of a loss of revenues and additional labor costs

[118] N 130a/2007, paras 50–52.
[119] N 130a/2007, paras 50–54.
[120] WTO trade agreements.

and those contracts could be drawn up for a maximum period of six years. As contracts can be drawn up only for activities that "go beyond what is legally obliged" and the definition of what is legally obliged changes as rules are updated, contract periods could not exceed this period. (Zwaan & Goverde 2010)

These requirements were not readily accepted by all local or regional actors involved in the pilot for they wanted to work on the basis of market-based prices and to increase the duration of the contracts up to ten years. Therefore, the actors contracted a private consultancy office which advised that they should qualify the GSs as "services of general interest" (SGEI) that would meet the so-called "Altmark" criteria. The consultancy office suggested that the agrarian function of a farmer's land would be disconnected from its recreational or natural functions. By separating these functions it would become possible to bypass the EU state aid requirements for farmers as farmers would not carry out any agrarian activities on this recreational or natural land, and would formally only be a landowner of the recreational or natural land. By using this construction, GSs could be qualified as services of general interest, to which the state aid requirement for farmers would not apply. In addition, the suggestion was made to establish a "landscape fund" that would be entrusted in the care of independent actors who could draw up the contracts with farmers for these GSs. The landscape fund would be "filled" with both public and private money from local businesses or profits from building projects. Governmental contributions were considered to be important especially at the start of the fund to cover overhead costs. (Zwaan & Goverde 2010)

The European Commission however, stressed that payments had to be based on a "loss of revenues and additional labor costs'' and argued that the land use of a farmer is too interconnected to create a separation into different functions. It would be impossible, for example, for the Commission to check whether a farmer leaves a piece of land fallow for bird breeding, or whether this allows him to access his arable land more easily (Zwaan & Goverde 2010). In its decision on *state aid programme NN 8/2009 – Germany Nature conservation areas* the Commission also stated that if Member States define services of general economic interest for sectors of the economy which have been the object of harmonisation measures at EU level, then these services must be reviewed with special care in order to avoid inconsistencies. For the forest sector is harmonised and state aid for forestry is subject to the “Community guidelines for state aid in the agriculture and forestry sector 2007 to 2013”, the Commission therefore examines first whether the agriculture and forestry guidelines are applicable to the case at hand. The agriculture and forestry aid guidelines apply to all state aid granted in connection with activities related to the production, processing and marketing of agricultural products[121] and under them state aid is permitted to support the ecological, protective and recreational functions of forests.[122] That being the case, the agri-environmental aid measures in question were assessed under the Agriculture and Forestry Guidelines.

If the landowner gave up all the forestry in his land (i.e. gave up the production, processing and marketing of agricultural products) and thus became only a landowner of the recreational or natural land, was it logical that he could then, by fostering naturalistic values for future generations, start producing services of general economic interest (SGEI). Also, if certain areas in landowners land were already protected by law, would the silvicultural tasks in these areas serve objectives that are in the interests of society as a whole? For example, the tasks in favour of Habitat Types, which are of great

[121] See the Annex I of the Treaty.
[122] NN 8/2009 – *Germany Nature conservation areas*, point 59.

value for future generations, increase the *public goods*[123] which fall within the remit of the state acting as public authority. When Member States enjoy a wide margin of discretion when deciding whether and in what way to finance the provision of services of general economic interest[124] they should really take all advantage of that. At least the possibility to produce SGEI also in private natural (forestry-free) lands should be thoroughly examined.

5.5 Discussion and conclusions

The need for new economic biodiversity and ecosystem service instruments is obvious and generally acknowledged. From the point of a view of state aid regulation, an efficient solution could be to launch market-based, union-wide programs, such as a habitat banking and biodiversity offset scheme to reduce the biodiversity loss through obliging developers to purchase credits from a habitat bank. From State Aid Law perspective this would not cause any problems, because the State Aid Law, by definition, regulates the economic instruments of Members States.

In accordance with its Treaties, the European Union shall establish an internal market which shall work for the sustainable development based on balanced economic growth and a high level of protection and improvement of the quality of the environment. So that the market economy is able to improve the living conditions to the benefit of EU citizens in a sustainable manner, the legal frames must be built to guarantee this. Ecologically rich environment is not only a prerequisite for healthy and wealthy living, but it also enables innovations and new markets. This is why it is vital that the environmental protection requirements are integrated into the definition and implementation of all Union's policies and activities, including state aid policy. The sustainability and economic outcomes that are the aims can be demonstrated and advanced effectively with economic incentives. By aiding actions that conserve nature, also by giving compensation in money for nature values, states can, in addition to bearing their share of provision of public goods, also act as forerunners for the future markets for ecosystem services.

Our analysis of state aid principles and economic instruments for biodiversity conservation in Member States points to some challenges in meeting all conditions and goals of competition policy and conservation policy. However, some instruments, like environmental taxes, fees and charges do not raise problems under the state aid regulation, due to their non-discriminatory character. Many forms of ecological fiscal transfers, certificates and habitat baking are generally either so flat that they are not considered to distort competition or their incentive system is sufficiently market-based to comply with state aid principles. The most problematic instruments are tax reliefs and subsidies, because many forms of them can be considered discriminatory.

The problem is that tax reliefs or subsidies would be, in principle, fully forbidden, according to the State Aid Law. Yet, the Commission has allowed Member States to grant payments to farmers who make agri-environmental commitments on a voluntary basis. As these payments advance the public benefit, i.e. the beneficiary is the public, all citizens, these payments can be considered to follow an idea of the beneficiary paying (Wunder, 2005). The government is consequently meeting some costs of conservation on behalf of the general community. The problem is that incentives of biodiversity

[123] Public goods are goods which are beneficial for society but which are not normally provided by the market given that it is difficult or impossible to exclude anyone from using the goods (and hence making them pay for the goods).
[124] State Aid Action Plan, p. 9–10.

policy which are differentiated according to their contribution to biodiversity or ecosystem service conservation can be seen as discriminatory. This stems from the fact that state aid rules were not initially designed for ecosystem service protection. The ecological effectiveness of agri-environment schemes is restricted as long as the payments are defined on other basis than on the nature values that they protect or enhance. If nature values were included in the agri-environmental payments, the landowners who possess the ecologically most valuable sites would have greater incentive to commit to conservation in comparison to those who have less valuable sites. This would also be effective, not only from an environmental point of a view, but also economically. However, this would precondition that the guidelines pursuant to which state aid is allowed possessed more flexibility. According to the agriculture and forestry aid guidelines the payments to farmers could – and should - be based only on the loss of revenues and additional labour costs.

Green services are another major issue. Also, another way to increase active nature conservation measures and the supply of ecosystem services would be to frame these services as services of general economic interest (SGEI). However, there are significant hindrances for policy development and might remain so until the concepts of green services and ecosystem services are clarified and operationalized. One way to overcome these hindrances would be to find a way to make a distinction between agricultural and non-productive functions. If the services are related to agricultural function, the payments for them are most probably restricted by state aid regulation.

6 Concluding remarks

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Institutions matter. The chapters of this report illuminate the various ways in which international and national environmental policies interact and how they shape policy instruments – and eventually the outcomes of the policies. The policies reported here range from international policies on REDD the mechanisms of which are still being developed, to established EU state aid law, the implementation of which has stable mechanisms. Despite the broad substantive range, the reported policies have common features. The commonalities disclose the tight linkages between international and national policies and demonstrate how international policies can both constrain and enable national conservation policies and economic instruments. Other commonalities include the political nature of interpreting principles: different state and non-state actors influence the interpretation that eventually can be settled in legal terms.

The reported policy settings where international policy frames national policies show that environmental policy design needs to cover a number other issues than the "pure" environmental ones. The aims of the REDD+ policies are not limited to carbon sequestration and climate change mitigation. Instead, the co-benefits to poverty alleviation and biodiversity protection are equally important goals. The way that national policies frame these parallel goals is not clear-cut; it depends both on the recent policy evolution and on which actors are engaged in formulating and implementing both international and national policies. The REDD+ analyses of this report highlight certain extremely important linkages between institutional design and the role the different actors may have in different institutional settings as well as how this might affect the realization of parallel policy goals. Where the international mechanism is still open, national and sub-national actors gain more power.

The chapters demonstrate that the ways in which different governance levels interpret and interact in implementing both emerging policies like the REDD+ and established policies, like the EU biodiversity policies, or state aid policies, eventually reformulate these policies. The active stance of Brazil on first opposing to REDD and then developing national and sub-national initiatives is a good example of this. Similarly, the EC allowing Germany to rearrange the nature conservation area governance referring to ideas of public interest shows how the interpretation of higher level policies is not only hierarchical implementation.

Another finding is that policies targeted at other sectors frame conservation policies. Understanding the EU agri-environment policies or Amazonian forest protection in Brazil requires that attention is paid also to the general goals of agricultural and commodity policy. Seeing EU state aid policies only as limiting the possibilities to adopt new kinds of economic environmental policy instruments, may make hinder recognising the general aims of that policy.

The REDD+, which might make huge amount of resources available to some actors, can easily be seen as an enabling institutional arrangement for national level economic instruments. In this case, the key issue is how to design instruments to be sufficiently effective and able to direct the resource to the purpose their aimed to be directed.

The governance solution adopted at the international level has important implications for what kinds of policy instruments are suitable at the national level. Chapter 2 shows that if internationally agreed compliance markets are chosen as the model and will be developed, the design of national instruments is bound to this approach. The national level instruments should enable the compliance markets to work and the degree of freedom of national authorities to choose the instrument or set of instruments would be strongly limited by international policy design. A global fund approach would leave more options for national governments to choose the instruments and possibly include both economic and command-and-control instruments. Monitoring of the achievement of the target at national level could be separated from the choice of national policy instruments – at least to a certain extent. Clearly, there would be a need to use some sort of economic instruments to channel the funds to ecosystem services provides, but this could take a variety of forms.

The national level solutions presented in Chapter 2 have also implications in terms of the type of policy instruments. A market or project based mechanism points strongly the direction what kind of instrument national governments need to adopt. The other mechanisms have the nation state engaged in channeling the funds to the local level. As the case of Brazil Chapter 3 demonstrates, the instruments that are developed at the national and sub-national levels tend to rely heavily on the previous institutional arrangements. Conditional budget support would allow the maximum use of existing economic instruments like agri-environment schemes, other kinds of subsidies, payments for ecosystem services, regional development programmes or fiscal transfer, to the extent the country concerned is able to meet the international conditions. It would, however, limit national sovereignty, which many of the countries potentially receiving funds from REDD+ oppose. One could assume that path-dependency of a national fund under the present administration would be stronger than that of outside administration, but theoretically both options may rely on various governance architectures contain multiple set of instruments. While the development of new kinds of economic instruments would be possible under whatever national funding mechanisms, national funds outside existing national administrations would particularly encourage to seek for new kinds of solutions.

Brazil, the largest global emitter of greenhouse gases from deforestation and forest degradation, is a good example showing how international and national developments are interlinked and affect each other, sometimes by creating tensions between them. In the implementation of REDD+ goals, Brazil uses a great variety of instruments and measures and the role of three major policy programmes is critical as they coordinate numerous policy activities. Despite new policy programmes, path dependency has significantly contributed to the policy development and the international influence has not changed this. The governance architecture contains economic instruments, although the analysis of Chapter 3 finds no major policy shift towards new kinds of instruments and policy despite the identified acute need for increasing the use of sustainable production incentives. Also participation and transparency, monitoring and coordination of policies and instruments need further development. Overall, it seems clear that REDD+ is clearly providing a fruitful background pressure for reducing deforestation and for the adoption of development of economic instruments.

In EU member states, the EU law is the key international law that creates opportunities and sets constraints for the development of national economic instruments. Chapter 4 analyses how *de jure* and *de facto* constraints and opportunities influence the use of different instruments and how they

could be taken into consideration in the design of a policy mix for the protection of biodiversity, while Chapter 5 discloses how European state aid law affects the design of national economic instruments.

The basic notion of the biodiversity conservation policies in Europe is that there are rather few economic instruments of biodiversity policy in use either at the European or at the national level. Apart from agri-environment schemes and certain other EU financing mechanisms like the Life+, EU does not make funds available for national biodiversity conservation and hence the funding of national policies is a responsibility of member states. While greening of common agricultural policy may provide opportunities for the development of new EU wide economic instrument, a large group of member states opposes legislative proposals increasing the total budget of EU. A subsidy reform (Vatn et al. in review) at the EU level is not ruled out. National governments still have a key role in financing nature conservation policies and hence, developing economic instruments relying on public budget in Europe.

The key pieces of EU nature conservation law, namely the Birds and Habitats Directives, need to be implemented at the national level using command-and-control type of regulation, although EU law leaves some opportunities to use national economic instruments in the site-selection for EU wide Natura 2000 network of protected areas. Still, the outcome must, regardless of the process how sites are selected, fulfil the EU legal requirement and this limits the use of economic instruments for the purpose of meeting EU requirements. Chapter 4 shows that there is some justification for this due to lack of dependability of economic instruments and their inability to address possible ecological disasters or tipping-points. EU biodiversity law does not forbid the member states to use economic instruments while selecting sites for domestic conservation purposes. Some member states, like France and Finland, have used this opportunity and rely in their domestic efforts on economic instruments, whereas policy development exceeding the ambition level set by EU has been very slow particularly in eastern and southern member states.

While EU law does not set any limitation on the range of conservation measures other than those required by EU biodiversity law a member states wish to adopt, the EU state aid affects the design of national economic instruments. Chapter 5 highlights the general restrictions that the EU state aid law imposes on national policy makers for adopting new economic instruments. Despite these restrictions, certain types of economic instruments rarely raise problems under the state aid regulation. For example, environmental taxes, fees and charges are in accordance with the state aid principles due to their non-discriminatory character. Some other instruments, like tax reliefs and subsidies, are often problematic, because many forms of them can be considered discriminatory. This is of major importance for biodiversity policy, because subsidies are a commonly used instrument for biodiversity policy. However, the question is not whether the use of subsidies is generally allowed, but what kinds of forms subsidies may take. Perhaps the most important issue is to what extent it would be possible to use payment schemes that are not strictly based on economic losses, but on other considerations, like nature values. There might be ways to avoid this limitation, like framing nature value trade as a service of general economic interests. Despite some positive indications, there are many uncertainties how this could be done in different circumstances and hence there is a need for further research with this regard. Developing EU-wide mechanisms would raise the considerations of general interest and the role of biodiversity to a higher level and perhaps avoid the

discriminatory interpretations. However, WTO law may constrain this type of economic instrument development, and it might also face opposition based on subsidiarity principles.

The analyses presented in this report demonstrate that developing new policy instruments requires interaction between different governance levels. In addition to the technical coordination between international and national policy mechanisms, also the principles by which instruments are developed are negotiated at multiple levels. The goals of biodiversity protection and reduction of deforestation are coupled with other substantive and procedural goals, including poverty reduction, participation, fairness, efficiency and open competition. While this report gives only a first glimpse to the evaluation of how different mechanism contribute to achieving these goals, it lays out the interactions that take place in an emerging policy arena and in an established one.

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