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PBL Netherlands Environmental Assessment Agency

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**Corresponding author**
Sylvia Karlsson-Vinkhuyzen (sylvia.karlsson-vinkhuyzen@wur.nl)

**Authors**
Karlsson-Vinkhuyzen, S.I. (Wageningen University Public Administration and Policy Group), Boelee, E. (Water Health, Hollandsche Rading), Cools, J. (Milieu Ltd, Brussels, Belgium), van Hoof, L. (Wageningen University Environmental Policy Group), Hospes, O. (Wageningen University Public Administration and Policy Group), Kok, M.T.J. (PBL Netherlands Environmental Assessment Agency), Peerlings, J. (Wageningen University Agricultural Economics and Rural Policy Group), Podvin, K.J. (Wageningen University Forestry and Nature Conservation Group), van Tatenhove, J. (Wageningen University Environmental Policy Group), Termeer, C.J.A.M (Wageningen University Public Administration and Policy Group) and I. J. Visseren-Hamakers, I.J. (Wageningen University Forestry and Nature Conservation Group).

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# Chapter 1. Introduction

Sylvia Karlsson-Vinkhuyzen and Marcel Kok

## 1.1 Background and rationale

Biodiversity is declining and is expected to continue to decline worldwide in the coming decades if current trends continue (PBL 2012; Secretariat of the Convention on Biological Diversity, 2010b; 2014). PBL (2012) estimates a further terrestrial biodiversity loss in the range of another 10 per cent point of the mean species abundance (MSA) indicator, from our current 70 per cent towards 60 per cent, globally averaged. Order-of-magnitude estimates between 2010 and 2050 project habitat loss to amount to some 10 million km$^2$ of nature area transformed into areas for human use and a reduction of wilderness areas by 15 million km$^2$.[1] Past and projected biodiversity loss is not equally distributed over countries or over biomes. In response, the global community through the UN Convention on Biological Diversity (CBD) has adopted a long-term vision of halting biodiversity loss by 2050 and has in its Strategic Plan 2010-2020 set five strategic goals and twenty targets for 2020, the so-called Aichi targets that are aimed to ensure considerable progress on the long-term vision.[2]

While there is a clear increase in responses to halt biodiversity loss taken so far to implement the CBD, these are clearly not sufficient to meet the Aichi targets and the 2050 Vision (Leadley et al., 2014; sCBD, 2014). Analysis of the pressures on biodiversity and the direct and underlying causes behind them give clear answers to why this is the case. The major pressures on biodiversity loss are found in production sectors such as agriculture, livestock, forestry and fisheries, see for example PBL Netherlands Environmental Assessment Agency (2010; 2012) and Secretariat of the Convention on Biological Diversity (2010a). It is activities in these sectors that cause biodiversity loss on land, in freshwater and the seas while the policies, consumer demands etc. that contribute to these activities can be referred to as underlying causes.[3]

What all this means is that addressing direct pressures and underlying causes in these production sectors is a key approach to revert biodiversity loss. The need for such action is recognised in two of the strategic goals of the CBD that were adopted in 2010:

- ✓ "Strategic Goal A: *Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society*
- ✓ Strategic Goal B: *Reduce the direct pressures on biodiversity and promote sustainable use*.

[1] Wilderness is a subset of nature area, i.e. the total nature area left in 2000 is some 90 km$^2$, of which about 70 km$^2$ is wilderness, defined as areas relatively undisturbed by human activity (>80% MSA). Loss of nature area is mostly due to human appropriation and change to a human land use type. Loss of wilderness may, in addition, be due to increased pressures such as pollution or fragmentation with the land use still being classified as nature.

[2] See http://www.cbd.int/sp/targets/

[3] Spangenberg (2007) divides driving forces into three categories; the overshoot in resource consumption as a primary driver, the policies linked to the underlying socioeconomic development trajectory as secondary drivers and the structures (such as production technology and organisation of product use and reuse) behind those as tertiary drivers.

These goals link closely with Article 6b of the CBD that states that each Party to the convention shall, in accordance with its particular conditions and capabilities: "Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectorial or cross-sectorial plans, programmes and policies" (United Nations, 1992). The underlying rationale for this is reflected in the preamble of the CBD where it was noted that "it is vital to anticipate, prevent and attack the causes of significant reduction or loss of biological diversity at source" (United Nations, 1992).

How this can be realised is less clear. This report seeks to support this goal by increasing the understanding of the governance and institutional challenges and opportunities for *mainstreaming* or integrating biodiversity not only across governmental policy areas but across specific sectors of society; and especially those sectors that exert the highest pressure on biodiversity. Its outcomes are used in further analysis for the CBD on what sectors can do in practice to contribute to the sustainable use and conservation of biodiversity (see Kok and Alkemade (eds), 2014).

This introductory chapter introduces an analytical framework developed to enable the identification of both the potential for mainstreaming in particular sectors and elements of strategies that could enable or obstruct such mainstreaming. The chapter also introduces the methodology of selecting cases and applying this framework on them. The following chapters (2-6) describes the results of this exercise case by case. Chapter 7 compares the analysis across cases and discusses these in light of previous literature. Finally, chapter 8 summarizes the conclusions and elaborates some potential lessons for policy for various types of actors.

## 1.2 From government(s) to governance

The sectors that exert major pressures on biodiversity - for example agriculture, forestry, fisheries and the global value chains that they are often part - of are usually governed not by government(s) alone, but by a multitude of private, public and new public-private (hybrid) actors, often spanning levels along the governance scale from local to global. Actors in these sectors find themselves part of and subject to *governance.* Governance has in the last decades become the key concept referring to how the steering of society works in practice when more actors than the government are involved. It can be defined as "the sum of the many ways individuals and institutions, public and private, manage their common affairs, a process through which conflicting or diverse interests may be accommodated and co-operative action may be taken" (Commission on Global Governance, 1995).

Governance through multiple non-state actors has become the name of the game in most national contexts. This has come about in different ways for diverse reasons:

- Through the realisation that the government is not able to address complex societal problems (such as environmental change, globalisation) alone;
- Through political choice to reduce the role of the government and increase the role of other actors for ideological reasons such as wishing more influence to the market and/or to communities and other stakeholders;

- By necessity because of weak governments with limited resources (this can also be by political necessity linked to rules and priorities of International Financial Institutions, IFIs).

In a global context, governance is political reality in the absence of a world government. The principle of national sovereignty limits global steering by governments to what is agreed in consensus. Even then most of the apparatus of a national government that enables it to implement agreements, enforce laws and sanction violations is lacking in global governance. At the same time there are considerable degrees of international cooperation by non-state actors operating globally, private sector companies and business associations as well as civil society organisations. These actors come together in various constellations where they realise that they need to engage in regulatory activities (Rosenau, 2007). In a large number of business sectors multiple types of actors engaged in governance processes ranging from 'webs of control' to 'webs of dialogue' (Braithwaite and Drahos, 2000).[4] However, governance through both public and private actors is patchy or overlapping, both sector wise and geographically. Indeed, many times governance may not be the appropriate word if the definition is used that it implies taking actions to address 'common affairs' (if that is taken to imply a certain public rather than private purpose). In this report, however, the starting point is that conservation and sustainable use of biodiversity needs to be addressed as a common affair across many sectors and levels of governance.

## 1.3 Mainstreaming in governance contexts

'Mainstreaming' of biodiversity needs to be achieved in contexts of governance (local, national, global, multilevel) in the sectors that exert pressure on biodiversity. That has been the conclusion of governments as Parties to the CBD and scientists (see above) and that is the starting point for this report. Mainstreaming involves taking the specific objective of one issue domain (here biodiversity) and seeking to integrate this into other issue domains (agriculture, forestry, etc.) where it is not sufficiently addressed according to some normative standard (Halpern et al., 2008; Nunan et al., 2012; Roux et al., 2008). The concept of mainstreaming emerged in a (multilevel) government context, the European Union, and has been widely applied in international organizations and national governments.[5] The concept has close relatives particularly in the concept of integration that is also frequently used for example in decisions taken by the Conference of the Parties to the CBD. Sometimes the two concepts are considered synonymous, but it is also possible to distinguish them. Mainstreaming indicates a unidirectional movement of putting one issue centrally on the agenda for governance in a particular domain or sector. Integration should manifest a more bidirectional process of merging to the concerns of two domains (Karlsson-Vinkhuyzen and Kok, 2011).

[4] Braithwaite and Drahos (2000:551) based on thirteen in-depth case studies, concluded that globalization of business regulation can follow various routes: it can happen through different types of webs of control for example "globalization of rules followed by globalization of compliance to bring businesses into compliance with those rules" or through "globalization of business practice via the mechanism of modelling, that then becomes codified and solidified as globalized rules". However, they also identify as very influential webs of dialogue or persuasion that include a number of mechanisms such as self-regulation, naming and shaming of corporate practices, professional association dialogues etc.

[5] One of the major historical roots of the concept of mainstreaming is as a European Union policy instrument for the operationalization of 'the integration principle' in the environmental policy domain (Halpern et al., 2008).

There is a body of peer-review and grey literature stressing the importance of mainstreaming and building up insights on what factors make mainstreaming effective in government dominated contexts such as governmental led mainstreaming in a country (Nunan et al., 2012; Roux et al., 2008), environmental policy integration (EPI) in the EU (EEA, 2005; Goria et al., 2010; Gupta and Grijp, 2010; Halpern et al., 2008; Jordian and Lenschow, 2008; Nilsson and Nilsson, 2005; Nilsson and Persson, 2003; Rayner and Berkhout, 2012), donor and government policies in developing countries (Dalal-Clayton and Bass, 2009; Kok et al., 2008; Persson, 2009; Sietz et al., 2011; Snyder et al., 1996; UNDP-UNEP Poverty-Environment Initiative, 2009) or international organizations and international policy domains (Kok and de Coninck, 2007; Netherlands Environmental Assessment Agency, 2010; Oberthür and Stokke, 2011b). In recent years this literature has been further strengthened with empirically oriented studies on national mainstreaming implementation efforts both in developing and developed countries (Dasgupta and Baschieri, 2010; Hess et al., 2012; Rayner and Berkhout, 2012; Roe and Mapendembe, 2011; Sietz et al., 2011; Taylor et al., 2011; Xiao et al., 2011).

In contrast, this review of the literature on mainstreaming reveals that research that explores the possibilities for mainstreaming contexts of governance rather than governments, is much more limited. The review of mainstreaming literature also shows that this literature:

a) Tends to assume that mainstreaming needs to be a top-down hierarchical process (by government initiation and leadership);
b) Generally departs from the rationale of the theme that should be mainstreamed rather than from the rationalities of the sector/policy arena into which it aims to be mainstreamed with the risk of overlooking opportunities for synergies;
c) Seldom links to 'newer' theoretical approaches and understandings around how governance works in practice.

The mismatch between the documented experiences with mainstreaming and the reality of what governance looks like in the sectors where mainstreaming of biodiversity would matter most, provided our rationale for seeking advance the analysis of mainstreaming further both theoretically and empirically. There would otherwise be a risk that advice for mainstreaming based on a governmental approach would be insufficient and perhaps even misleading. Such advice will easily miss many opportunities for mainstreaming that do not fit into a government based model of steering. For example, among the central factors that the mainstreaming literature lists as essential for mainstreaming to happen are: institutionalised coordination mechanisms, top-down leadership, national laws, normative agreement (united vision), coherent norms and regulatory tools, funding and transparency and democratic accountability in the mainstreaming process (Karlsson-Vinkhuyzen et al., 2013). Several of these factors, such as top-down leadership or democratic accountability, are simply not present or have only a slime potential to emerge in the governance context of the globalised sectors we are concerned with in this report. In contrast governance contexts are often characterised by different types of actors some of which may have considerable resources, motivation and/or leadership skills. This can provide many more potential norm and policy entrepreneurs that can initiate mainstreaming. Governance can also be characterised by

informal networks that provide opportunities for finding common frames and action strategies that can take a more flexible 'learning mode' compared with more formalised government structures. Again this can be hypothesized to provide fertile ground for mainstreaming. And indeed, we do know that mainstreaming of biodiversity is happening in many of the biodiversity relevant production sectors. The increasing number of voluntary business initiatives for sustainability through roundtables, certification schemes and stewardship councils at the global level are important arenas where efforts mainstreaming biodiversity are taking place. It is therefore clear that unless more research is made on how to make mainstreaming happen in governance rather than government contexts potential opportunities for mainstreaming biodiversity may be missed.

That mainstreaming of biodiversity is needed in both government and governance contexts is reflected in Aichi target no. 4 that expects all "[g]overnments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption" (UNEP, 2010). Countries clearly struggle with mainstreaming biodiversity in such broad arenas; a majority of countries who has developed their National Biodiversity Strategy and Action Plans (NBSAPs) find the mainstreaming of biodiversity into economic development to be a considerable challenge.[6] Better knowledge and understanding of identifying potential for mainstreaming biodiversity and how such potential can be best utilised in governance contexts would clearly be supportive of the strategic goals of CBD and the Aichi targets. This report presents the results of a research project that was designed to develop knowledge for this purpose.

## 1.4 Objective and approach

The central question for the research project was not *what* in *which production sectors* needs to be done to reduce pressure on biodiversity (see Kok and Alkemade, 2014 for this), but *how* the mainstreaming of biodiversity concerns in main production sectors can be achieved to support the strategic goals of the CBD and the Aichi targets. We took a two-pronged approach to achieve this objective. The first step was to develop an analytical framework that could be used to analyse the potential for mainstreaming an environmental issue such as biodiversity in a particular sector through:

- The systematic analysis of key governance dimensions
- Identification of strategies to mainstream environmental issues

The second step was to apply the framework on cases in sectors that matter the most for biodiversity and thereby identify both potential for mainstreaming biodiversity and possible strategies for making it happen in these sectors. In this report we present the result of applying the framework on five diverse, but also related cases in or on the cross roads between agriculture, forestry and fisheries (see section 1.6). We summarize the potential strategies for mainstreaming biodiversity in these cases and draw conclusions across the sectors that can be useful both for further analysis and as starting points for broader mainstreaming initiatives in these and other sectors. Furthermore, the results could be

[6] Frentz (2006) quoted in Chandra and Idrisova (2011).

possible inputs to scenario exercises for future trends of biodiversity and potentials of various options to reduce biodiversity loss in sectors, improving the social science foundations for analysing alternative future pathways.

A possible third step of expanding the mainstreaming effort could be to bring together key stakeholders in some sectors and initiate a dialogue on that potential strategies to reduce pressures on biodiversity that this report identifies, but exploring the details of such measures is beyond the scope of this report. Instead we hope it will inspire to such action. In the following two sections we describe the analytical framework and our five initial cases studies respectively.

## 1.5 A framework for analysing the potential for environmental mainstreaming in governance contexts

The core of our framework is comprised of ten governance dimensions that we consider are required for analysing the context for (potential) mainstreaming in particular (sub-)sectors. These dimensions have been derived from the literature on mainstreaming and broader governance literature (theoretical and applied). These dimensions can be divided into three categories: institutional (horizontal and vertical interactions, policies and norms), motivational (interests, values, framing, leadership) and means (knowledge, time, financial resources). We briefly describe each dimension below, focusing on some important aspects of these dimensions that are different in contexts dominated by governance rather than hierarchical government.

### 1.5.1 Horizontal interactions: inclusion of relevant actors

Horizontal interactions encompass the various interrelationships between actors who are relevant for the issue to be mainstreamed that interact at the same governance level. Mapping these actors and their interactions is a starting point for analysis of several other governance dimensions as well. Actors can be identified and characterized according to their legal and organizational status along various scales; public – private, state – citizen, networks – partnerships – organizations, operating at one or more levels along the jurisdictional scale, etc. Actors who operate at the same level of governance may have the largest potential to establish relationships and cooperate as they operate in similar political and regulatory contexts (although this also depends on the type of actor). Organizational structures (institutionalised interactions) can be significant for the potential of mainstreaming yet this has received limited attention in analysis so far and when this is done it has been focused on how governments organise mainstreaming within their structures (Nunan et al., 2012).

### 1.5.2 Vertical interactions: bridging across levels

The fact that governance is engaging multiple levels with interactions between them is captured among others in the concept of multilevel governance, developed by scholars studying the European Union, see Bache and Flinders (2005), Marks and Hooghe (2005) and Scharpf (1997). Considering multilevel governance in a global context raises more complex issues of unequal capacity, power and authority among the same level of governance in different countries, national sovereignty and diverse political and constitutional contexts (Karlsson-Vinkhuyzen, 2012). Multilayered governance is a term that can be used for a

situation when there is a nested hierarchy of mutually supportive policies and institutions initiated at all governance levels (Karlsson, 2004). Dalal-Clayton and Bass (2009) stress that a key challenge for mainstreaming is "to build and maintain a system that links levels, processes and the issues that concern stakeholders at different levels and across sectors". A similar notion is captured in Kok et al.'s (2010) conclusion that there is need for consistent policies across levels for successful mainstreaming of ecosystem goods and services and in Heazle et al's (2013) argument that localised bottom-up measures are important within a flexible national framework for, in their case climate change adaptation. There are a number of measures that can increase vertical integration such as multilevel structures, committees, communication channels, and policy instruments (EEA, 2005).

### 1.5.3 Values: providing guidance and direction

The concept of 'values' is broad and we here confine it to those things that are valued or considered essentially good by individual or collective actors. Values can of course be closely linked to interests (see below), but tend to relate more to the fundamental perspectives on life and often have their origins in upbringing and social, cultural and/or religious contexts. What values are seen as most important can change over time. Studies by Inglehart (1999) show that in industrialised countries - where most people do not face basic survival issues - there is a pattern of systematic change in the last decades of the 20th century towards so called post-materialist values. While synergies can often be found between the interests in a production sector and the goal of biodiversity conservation, there are many cases where there are trade-offs, particularly for the short-term. In such cases progress on mainstreaming could be supported by identifying values of key actors that are supportive of biodiversity such as environmental concern and consideration for the well-being of neighbours, humanity and future generations that in turn could underpin the development of compliance with norms (Jäger et al., 2007). The personal and ethical values of individuals could play a key role in motivating people and through them organizations to engage in mainstreaming environmental issues either as individuals or in their formal roles.

### 1.5.4 Interests: challenging status quo

Interests are important drivers of behaviour. The degree of (in)compatibility of interests (also referred to as malignancy) that are behind policy objectives of specific institutional actors makes mainstreaming more difficult unless the issues are very high on the political agenda (Oberthür and Stokke, 2011a). The mainstreaming of an environmental issue into other sectors will face the obstacle of entering a governance arena where all other actors and their vested interests have the privilege of 'being first'. Putting a new issue such as biodiversity on an already established agenda is challenging (Karlsson-Vinkhuyzen and Kok, 2011). But interests can also be complex. For example, business actors can consider environmental issues for a range of reasons including as a way to demonstrate their commitment to corporate social responsibility (CSR), mitigating their social and political risk or managing their reputation and relations with their stakeholders (Dalal-Clayton and Bass, 2009). Similarly, states can push different agendas in different international governance arenas displaying lack of internal coherence in terms of interest. Such complex interest formation within institutional actors can be seen both as a challenge and an opportunity for mainstreaming; it brings possibilities to identify those interests that could support biodiversity and build networks with other actors on these.

### 1.5.5 Framing: rethinking the way we look at issues

Framing can be understood as a process by which issues, decisions or events acquire different meanings from various perspectives (Dewulf et al., 2011). Actors from different backgrounds may construct frames that vary significantly from each other, stressing some aspects of an issue at the expense of others and drawing different issue boundaries. On a more general level they provide strong and generic storylines that guide both analysis and action in practical situations (Schön and Rein, 1994). Frames determine not only the proposed solution strategy, but also single out different roles of stakeholders and distribute power (Hajer, 2011). Different frames appeal to different groups of people. Defining and recognizing different frames in a particular governance context and clarifying their political aspects will enable a more productive debate. Frames are dynamic and can be actively influenced. One example of such 'reframing' are the efforts of the Secretariat of the CBD to reframe biodiversity "from a passive recipient of climate impacts to an active player in addressing the climate change problem" (Jinnah, 2011:24).

### 1.5.6 Leadership: making change happen

People and their capacity for initiating change are crucial in governing change. Dalal-Clayton and Bass (2009) list leadership in the form of engaging with champions and mobilising political will as the first principle for effective environmental mainstreaming. Leaders that can initiate change need to be able to fulfil certain functions and possess a set of capabilities. Theories on complexity and sustainability leadership on the one hand identify core functions of leadership that may be dispersed between many individual and collective actors. Examples of such core functions are administrative, adaptive and enabling functions for leading innovations in complex adaptive systems (Uhl-Bien et al., 2007). On the other hand theories identify what capabilities individual leaders need to have, such as the ability to share responsibility among all participants, or to strengthen greater diversity in skills, cultures, interests, and passions (Allen et al., 1998). An additional aspect of leadership to look for, however, is the values of leaders and whether they are willing and indeed capable of exercising moral leadership (Vinkhuyzen and Karlsson-Vinkhuyzen, 2014). Moral leadership has been defined as the ability to inspire sustained efforts to work for the necessary changes as well as create a willingness to assume the personal risks inherent in dealing with resistance to change, see WHO (1988) quoted in Anello and Hernández (1996).

### 1.5.7 Knowledge: providing a sound basis

Knowledge from data-information-indicators, scientific research or systematically collected experience based (local) knowledge is a key asset for various aspects of the mainstreaming process. The challenge is that in mainstreaming also various bodies of knowledge and research communities need to come together, calling for multi-disciplinary approaches. Actors need to have a sound basis for identifying which of their activities contribute to e.g. biodiversity loss or conservation, how they depend on biodiversity, what opportunities biodiversity provide and what solutions exist. Experience has shown that if issues around environment and particularly its benefits are not measured or formulated as targets and if there are no indicators for them there is a considerable risk they will be absent from project or program objectives (Persson, 2009). However, it is also important that a mainstreaming process can deal with uncertainty and change (Rouillard et al., 2013). Uncertainty and change are common characteristics of current governance challenges where insights from adaptive governance can be relevant. In their case study on mainstreaming climate change

adaptation in Mozambique, Sietz et al. (2011) identify the limited data collection and information management in the country as a main barrier towards mainstreaming. Furthermore it is important that governance actors are briefed "in ways that they find both comprehensible and compelling" (Dalal-Clayton and Bass, 2009) and Collins (2013) sees potential to improve mainstreaming (of migration in relation to environmental change) with education and awareness raising. Making information on the governance process – including reporting on implementation - available for other stakeholders and the public ensures transparency, supports accountability and makes it possible to systematically reflect on and learn from successes and failures (see discussion on legitimacy below).

### 1.5.8 Norms and policies: changing the rules of the game

The concept of norms refers to some type of rules for preferred, allowed or accepted behaviour. The norm concept is used here as an umbrella concept for e.g. rules, laws and institutions and covers a considerable span from international treaties to social conventions in a local community or a business. The type of actors whose behaviour these norms are seeking to constrain thus ranges from states and international organizations to businesses and individuals. Their degree of formal institutionalisation varies as does the (possibly) associated sanction systems. In global governance one can talk about hard law and soft law each with their assumed advantages and disadvantages (Karlsson-Vinkhuyzen, 2011). Policy is also a concept with a broad connotation, mostly referring to a course of action or a plan or a "rationale, a manifestation of considered judgment" (Parsons, 1995). Furthermore, it is often implicitly associated with public actors; public policy is the policy of governments. However, any actor can develop policies after which they operate. The content of norms and policies in relation to, for example, biodiversity outcomes is naturally highly relevant. Furthermore, their density and their character including how 'changeable' they are can vary among (sub)sectors and governance levels. For example, it can be easier to create new formal norms than to change old ones, which makes mainstreaming into a sector with high norm density more difficult than into a sector with less norm density (Karlsson-Vinkhuyzen and Kok, 2011).

### 1.5.9 Time: long term investment needed

The time dimension of governance has many faces. It includes the dominant time-horizon (in terms of planning and policy) of the major actors in a sector and the time dynamics around major governance processes (such as an international treaty or a multi-stakeholder labelling system). There are particular challenges to address long-term policy-problems such a biodiversity and climate change that share the characteristics of lasting for at least a human generation, displaying deep uncertainty and engendering substantial public good aspects (Hovi et al., 2009). Short-term sacrifices may be necessary for these kinds of issues to achieve long-term gains. At the same time it is precisely the maximisation of short-term livelihood needs or profit requirements in production sectors that often limit the incorporation of biodiversity principles into sectorial development and resource extraction plans (Chandra and Idrisova, 2011). Other aspects of the time dimension is the amount of time various elements of a mainstreaming process can take. For example, Roux et al. (2008), based on a case study of policy integration of freshwater conservation in South Africa conclude that individuals have to spend much more time than expected on the process as "proper understanding of another party's issues requires deep engagement and prolonged interaction among people". The same authors also conclude that funding available for

integration projects are usually of too short duration and is then unable to sufficiently maintain the dialogue and attach new knowledge into policy processes.

### 1.5.10 Resources: allocating costs and benefits

The availability and flow of monetary resources can enable or obstruct action and can be a core factor influencing motives of actors etc. In the case of biodiversity two different types of funding can be distinguished (Kettunen et al., 2013): dedicated support to biodiversity under a distinguished budgetary heading and sectoral resource mobilisation. Many developing countries prefer the 'traditional route' of public funding (special biodiversity funds under the CBD, that is Global Environment Facility funding). Additional pledges by industrialised countries are however not very likely to happen due to the economic crises. Sectoral mobilisation can be achieved by using an increasing understanding of the benefits and socio-economic value of biodiversity as a leverage point for directing domestic and international sectorial budgets (both public and private). However, few countries have actually elaborated finance strategies that would bring biodiversity objectives and sectoral development together (CBD, 2010). Sectorial mobilisation can be aided with the help of 'innovative finance mechanisms', including payments for ecosystem services (PES), biodiversity offsetting, green taxation, markets for green products, certification of production and production regions and integrated biodiversity and climate funding. These mechanisms could result in an increase in private funding for biodiversity to complement existing public funding and would be a key aspect if mainstreaming is going to take place within production sectors themselves with little government involvement.

Each dimensions can be analysed at different depths depending on the methodologies used (desk based document analysis, surveys, interviews, etc.) and provide the starting point for further analysis necessary for making more detailed and validated suggestions for mainstreaming strategies. We have seen it as valuable to include as part of the analytical framework two specific pairs of concepts: barriers and levers as well as effectiveness and legitimacy. We consider these to be cross-cutting elements that need to be considered when analysing the governance dimensions and particularly when using that analysis to identify possible mainstreaming strategies.

The identification of *barriers and levers of change* within each governance dimension will provide a key foundation for identifying and indeed prioritising potential strategies for mainstreaming. *Barriers of change* increase transaction costs and slow or obstruct change processes.[7] The traditional literature on mainstreaming where governments play the central role includes many cases studies and based on experiences in these a number of recommendations for what makes mainstreaming work (and not) have been identified albeit not in a very systematic or comparable manner. Sietz et al. (2011), provide examples of such barriers in a more traditional government mainstreaming context of climate adaptation into development assistance, including that donors and national institutions are often not being

[7] A more precise definition of barriers has been developed by Biesbroek et al (2013:1127) as "(1) the actors' subjective interpretations or collective understanding of (2) sequentially or simultaneously operating factors and conditions that (3) emerge from the actor, the governance system, or the system of concern, (4) which the actor values as having a negative influence on the process and reduce the chances of successful outputs, but (5) that are manageable and can be overcome with concerted efforts, or (6) by creating and seizing opportunities".

set up to encourage mainstreaming and the potential excess of issues that governments are expected to mainstream leading to paralysing development planning and implementation. *Levers of change* reversely can also be found in all governance dimensions, they reduce the transaction cost of change and can more generally enable action. Dalal-Clayton and Bass (2009) in their analysis of 12 country studies of environmental mainstreaming processes identified advocates, laws, funding sources, projects or specially-constituted mainstreaming initiatives as levers of change.

The second cross-cutting element concerns two concepts that are frequently used to evaluate the quality of governance processes and outcomes; effectiveness and legitimacy. *Effectiveness* is often defined as achieving the intended results. However, there can be a considerable time-lag, as well as methodological challenges, with linking particular governance measures in a sector to impacts on, for example, biodiversity. It is often necessary to look at intermediary components of effectiveness that are easier to evaluate, these include *output* (i.e. norms) and *outcome* (i.e. changes in actor behaviour) effectiveness (Underdal, 2002). Among the many, and often context dependent factors that contribute to the effectiveness (or efficiency - the extent to which the problem is solved with a minimum of resources) of governance are legitimacy (discussed below), and attention to learning and reflexivity. *Legitimacy*, or the justification of authority, as a key evaluative criteria of governance, is a reflection of the priorities modern societies tend to give to normative principles around the process (input) and result (output) of governance (Scharpf, 1999). Outside the hierarchical system of governance through government, authority cannot be taken for granted[8] and rather has to be earned or legitimised for example by adhering to principles such as justice or equity. This is particularly the case in global governance, see for example Bernstein and Cashore (2007) and Black (2008). Karlsson-Vinkhuyzen and Vihma (2009), based on a review of normative literature, identify sub-components of source-, process, and substance-based legitimacy in global governance. These components are often also important for legitimacy in the eyes of stakeholders. Included in these components are expertise, participation, transparency, accountability and equity.

## 1.6 Five cases of potential biodiversity mainstreaming

This report presents the result of applying the framework in five cases in or on the cross roads between agriculture, forestry and fisheries where considerable pressure on biodiversity is exerted. The cases were selected based on several criteria with the aim that they together cover as broad span as possible of:

- Relevance for biodiversity (from having very clear impacts to much more uncertain impacts)
- Governance levels (including both local, national, global levels)
- Governance context (type of actors, type of norms etc.)
- Regions (continents and eco-climatic zones)

Table 1 below outlines the basic characteristics of the cases along these criteria. The cases

[8] This does not imply that governments do not have to earn their legitimacy, but at least in democratic societies they have a more institutionalised degree of authority with executive powers.

are closely related indicating also the need to take into account inter-sectoral connections. It was necessary to narrow down each case to either a specific region or governance process in the sector in order to enable a manageable analysis within the allocated time frame (about two weeks for each case). The analysis of each case was carried out by experts on those particular cases with diverse disciplinary backgrounds. The familiarity with the case together with a common analytical framework made it possible to get a relatively fast yet well-founded analysis. The data collection was carried out in the months June-August 2013 was mostly desk-based, relying on scientific and grey literature as well as personal experience. Below follows a brief description of each case.

### 1.6.1 Certified forests

The forestry sector can include all economic activities that mostly depend on the production of goods and services from forests but in our analysis we focus on timber and paper. Forests – especially tropical forests – are among the ecosystems with highest biodiversity but both the forests and their biodiversity are under severe threat in many parts of the world. The case is focused on the two main international (public-) private certification schemes, namely the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC) that can be seen as efforts to mainstream biodiversity. Both schemes use standards for sustainable forest management, with specific principles and criteria; the FSC is a global scheme, with global principles and criteria, the PEFC is collaboration between national schemes that are endorsed by the PEFC at the global level.

### 1.6.2 Certified marine fisheries

The marine capture fisheries sector range from small scale artisanal fisheries to large scale commercial fishing operations, from subsistence, coastal communities based fisheries to global commercial fisheries. Fish stocks have declined following a discrepancy between available fish stock and fishing effort deployed. In this case we analyse the Marine Stewardship Council's labelling programme (MSC). It was established in 1997 four years after the establishment of the FSC, initiated by WWF and Unilever, to manage marine fisheries more sustainably.

### 1.6.3 Certified palm oil

Palm oil is one of the crops of which production is most rapidly increasing in the world and about 85 percent of the production is concentrated in Southeast Asia. Indonesia is the world's leader in production and the country has plans to double the current production. Palm oil plantations have significant negative impact on biodiversity; it is located in some of the world's most biodiverse regions it has often been accused of being a major threat to biodiversity. In this case analyse efforts to address biodiversity through certification of palm oil at the global level through the Roundtable on Sustainable Palm Oil (RSPO) and at the national level by the government of Indonesia (the national standard for Indonesian Sustainable Palm Oil, ISPO) as both have developed instruments and institutional arrangements for the purpose of certification.

### 1.6.4 Foreign direct investment in land

Foreign direct investment (FDI) in land is not a traditional 'sector' but it is a phenomenon that is increasing in scale and that connects land use and agriculture. While FDI in land takes place in e.g. South-America, Sub-Saharan Africa (SSA) and South-East Asia (Land Matrix,

2013) our analysis focuses on SSA. The severe food price crises in 2007-2008 led some governments to stimulate, in different ways, investments in land in foreign countries. The parallel global financial crisis also increased the incentives for purchasing land in SSA as this was cheap. The FDI takes place through close partnerships between foreign investors and the governments of the host countries. There is no research on the (potential) impact of FDI in land on biodiversity but direct effects can result from a transition of the land to monoculture and or intensification of land use and the areas most affected are the 'commons' including forests, wetlands and rangelands. The main discussion on FDI in land focusses on livelihood and human rights of the farmers involved.

### 1.6.5 Mangroves and water

Mangroves forests provide multiple ecosystem functions and services, including coastal protection, breeding grounds, firewood and food and are also among the most threatened ecosystems in the world. Mangroves support marine, aquatic and terrestrial biodiversity while local communities use natural products such as shellfish, crustaceans, fish, firewood, construction materials and medicines. They are cut down at increasing rates for firewood and to free up new land for high-income intensive aquaculture (mainly shrimp farming) and are often negatively impacted by external pressures such as upstream water use and downstream impacts from saline water intrusion. We look at mangroves in the Mekong Delta where the majority of the coastal brackish water zone is used for intensive mono-culture shrimp farming.

**Table 1**. Overview of included cases and their characteristics

| Case / criteria | Relevance for bio-diversity | Governance level | Governance context | Region(s) |
|---|---|---|---|---|
| **Certified forests** | High | Global/local | Private/ multistakeholder institutions – voluntary norms | Global (mostly temperate/ boreal), Europe/North America |
| **Certified marine fisheries** | High | Global/local | Multistakeholder institution – voluntary norms | Global |
| **Certified palm oil** | High (indirect effects) | Global/ national | Multistakeholder/ governmental | Global and South East Asia |
| **FDI in land** | Moderate/ high (uncertain indirect effects) | National | Private-governmental | Africa |
| **Mangrove management** | High | Regional/nati onal/local | Private (governmental-intergovernmental) | Global coastal/South-East Asia |

This selection of cases means that we have two cases where the sector is closely related to sustainable use of major ecosystems (forests and seas), two cases linked to agricultural production systems (palm oil and foreign investment in land) and one case that represents both a major ecosystem (mangrove forests) but also spans across several sectors including water management, coastal protection and aquaculture.

The sectors to which the cases belong are all central to reverting biodiversity loss and include different types of options for addressing biodiversity that has been tried in governance contexts including different types of certification. They cover either directly or indirectly (for example through consumer pressures) all continents. The collection of five cases includes examples of where strong efforts have been made to mainstream biodiversity (sometimes as part of broader sustainability measures in the certification cases) and one example of where nothing has been tried (FDI in land).

What these cases all share is that they are largely driven by private and other non-governmental actors and therefore do not necessarily start with, or are dominated by government interventions. The global value chains of fish and forest products are dominated by private actors both as producers (harvesters), processers, retailers and consumers. In addition NGOs have engaged with the sectors by establishing voluntary certification schemes. The degree to which non-state actors dominate depends on the case and governance level in focus and it does not mean that government(s) may not be (an) important player(s). For example, in the case of palm oil the Indonesian government is seeking to provide a domestic alternative for the role of the global roundtable on sustainable palm oil as standard setter and in the case of foreign direct investment in African land it is governments as owners of land that are in a key position to set the terms of sales or lease agreements. In the following chapters these cases will be elaborated in depth.

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# Chapter 2. Mainstreaming Biodiversity in the Forestry Sector: The Case of Certification

Karen J. Podvin and Ingrid J. Visseren-Hamakers

## 2.1 Introduction to the forestry sector

Although there is not a commonly agreed definition of the forestry sector, it can include all economic activities that mostly depend on the production of goods and services from forests. In this sense, it includes the economic activities (i.e. production and trade) concerning diverse products, such as wood fibre (i.e. industrial round wood, wood fuel, sawn wood, wood-based panels, wood pulp, pulp and paper, and wooden furniture), non-wood forest products (NWFPs), the subsistence use of forest products, and forest services (FAO, 2008a). In this case we limit the analysis to timber and paper.

The world's total forest area is just over 4 billion hectares (31% of the total land area) with a breakdown of 28% in tropical rainforests, 19% other tropical forests, 9% sub-tropical forests, 11% temperate forests and 33% boreal forests (UNEP, FAO, UNFF, 2009) (Figure A1 in Annex I). About 30% of the total forested area is managed primarily for the production of wood and NWFPs and 24% are under multiple uses, in many cases also including wood and NWFPs production. Temperate (i.e. mainly composed of broadleaved species, or also called hardwoods) and boreal or taiga (e.g. coniferous species or softwoods) forests constitute important sources for timber production. Temperate forests are located in North America and Europe, and the boreal forests are located in North America and the Baltic region (including Scandinavia and Russia) (FAO, 1999). Boreal forests are also important sources for paper production. Natural tropical forests are mostly used for timber. Besides sourcing timber and paper from natural forests, these products are also produced in plantations located around the world. The area of plantations is increasing, accounting 264 million hectares; three quarters use native species, while the remaining use introduced ones (FAO, 2010).

The main producers of timber in 2011 were Europe, followed by Asia-Pacific, North America, Latin America and the Caribbean and Africa (Figure A2 in Annex 1) (FAO, 2011) while the main producers of paper in 2011 were Asia-Pacific, followed by Europe, North America, Latin America and the Caribbean and Africa (Figure A3 in Annex 1) (FAO, 2011). In the North, logging often takes place through clear cuts (clearing a whole area of forest), and selective logging (logging several trees and leaving others); logging in tropical forest usually takes place through selective logging. However, logging also often takes place to clear land for other uses, such as agriculture, including palm oil plantations. With this, it becomes clear that many threats to forest biodiversity are cross-sectoral in nature and thus require synergies with other productive sectors (e.g. agriculture, mining, energy, climate change) (Rayner et al., 2010).

## 2.2 Forests, forestry and biodiversity

Forests – especially tropical forests − are some of the richest biological systems on Earth. They provide a manifold of environmental, economic and social services that are pivotal for human development. Forests support the livelihoods of hundreds of millions of people globally and contribute to the economies of many countries (FAO, 2010).

Forests – and their biodiversity − are under severe threat in many parts of the world as a result of deforestation, fragmentation (or degradation), climate change and other stressors. Around 13 million hectares of forest were converted to other uses or lost through natural causes each year in the last decade (FAO, 2010, p. xiii). The net change in forest area in the period 2000-2010 was estimated at -5.2 million hectares per year (an area similar to the size of Costa Rica) (FAO, 2010). Although the rate of deforestation shows signs of decreasing in some countries, it still remains high in others (FAO, 2010). Furthermore, most of the losses of forest still happen in tropical countries – the richest in biodiversity – whilst most of the gains are in temperate and boreal regions. The decrease of primary forests is mainly due to degradation, because of selective logging and other human interventions (FAO, 2010). Unsustainable logging is one of the major causes of tropical deforestation and degradation (Geist and Lambin, 2002; Sierra, 2001). Unsustainable logging occurs when trees are removed in an unselective or concentrated way, inhibiting forest regeneration (i.e. inappropriate scale and or pace) (European Commission, 2013).

There has been inadequate management of forest resources, leading to their depletion in many parts of the world. Much forest has been converted, legally or illegally, into agricultural land or other uses (see Tacconi, 2007). Illegal logging is a major problem worldwide, causing significant damage to forests, forest peoples and the economies of producer countries (Dooley and Ozinga, 2011). Illegal logging includes, among others, unlawful activities at diverse stages of forest management (e.g. inappropriate attainment of land-use or logging rights, and logging outside of the logging concession, the wrong species, or inappropriate trees) and forest goods production chain (Tacconi, 2007). It also includes administrative failures, such as avoidance of taxes or other inappropriate procedures along the production-consumer chain. Estimates suggest that around one tenth of the total timber trade worldwide might be illegal (Contreras-Hermosilla, 2002). Illegal timber is estimated to represent between 25% and 70% of timber produced in some tropical countries (Lawson and Macfaul, 2010).

All forest management interventions (e.g. logging and other timber stand management activities), regardless of how sustainable, have (direct or indirect) impacts on biodiversity. These impacts can be intended or non-intended, and negative or positive (e.g. silvicultural measures applied to maintain or enhance the stocking and growth of certain species) (van Kuijl et al., 2009).

## 2.3 Current mainstreaming efforts

Efforts to address biodiversity in the forestry sector can be found both in governmental

policy and private, market-based instruments. While there is no global forest convention (Gulbrandsen, 2005a), there are many international forest-related organizations and intergovernmental policy initiatives, such as the Non-Legally Binding Instrument on all types of forests (NLBI) negotiated under the United Nations Forum on Forests, and adopted by the United National General Assembly (UNFF, 2013), the International Tropical Timber Organization (ITTO), and the UN Food and Agriculture Organization (FAO). Forests are also an important topic under conventions on related issues, such as the United Nations Framework Convention on Climate Change (UNFCCC) that is currently negotiating an agreement on Reducing Emissions from Deforestation and forest Degradation (REDD+), the biodiversity-related conventions, and specifically the CBD that besides its general applicability has a Working Programme on Forests (CBD, 2013).

The concept of Sustainable Forest Management (SFM) has been discussed for decades as a normative goal by various actors and in many different forums, with diverse understandings of what it should entail. The Intergovernmental processes on SFM include the Montreal process (The Montréal Process, 2009) among others (FAO, 2008b). A common approach towards the concept, also used by the FAO in its Global Forest Resources Assessment (FAO, 2010), is the one by the NLBI which includes the following thematic elements of SFM:

1. Extent of forest resources
2. Forest biological diversity
3. Forest health and vitality
4. Productive functions of forest resources
5. Protective functions of forest resources
6. Socio-economic functions of forests
7. Legal, policy and institutional framework

Many governments have taken measures to address illegal logging as one important measure to work towards SFM and thereby address biodiversity concerns. For example, both the European Union (EU) and the United States (USA) have introduced legislation to eliminate trade of illegally harvested wood (UNECE, 2012). Besides these (inter-) governmental forest-related policies, initiatives are also being taken by market and civil society actors to develop private steering mechanisms to achieve SFM. Certification of forests is a prominent example of such initiatives.

The roots of certification go back to the international environmental movements of the 1980s and early 1990s (Kaechele et al., 2011), when tropical deforestation and biodiversity loss became some of the most important issues for environmentalists (Klooster, 2005). After unsatisfactory international boycotts on tropical timber, ENGOs decided to start collaborating with willing industry partners to developing a standard for sustainable forest management, the Forest Stewardship Council (FSC). Today, certification is regarded as one of the primary drivers of private or hybrid (public-private) market-based sustainability governance (Cashore et al., 2004; Pattberg, 2005). It has also been explicitly supported by the international community in the NLBI, which encourages "…the private sector, civil society organizations and forest owners to develop, promote and implement in a transparent manner voluntary instruments, such as voluntary certification systems or other appropriate mechanisms…" (UNGA, 2008).

Forest certification schemes can be considered as initiatives for mainstreaming biodiversity concerns into forest governance, and are the focus of this chapter. We will zoom in on the two main international (public-) private certification schemes, namely the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC). These are two competing global forest certification schemes, with the FSC supported more by the NGO community and the PEFC being promoted by the forestry industry. Both schemes use standards for sustainable forest management, with specific principles and criteria (P&C) (Visseren-Hamakers and Glasbergen, 2007). While the FSC is a global scheme, with global principles and criteria, the PEFC is collaboration between national schemes that are endorsed by the PEFC at the global level. Both the FSC and the national schemes endorsed by the PEFC include biodiversity-related demands in their schemes.[9]

The extent to which these certifications schemes have mainstreamed biodiversity at the global level can first be assessed by looking at how representative they are in the forestry sector. Considering that FAO (2010) estimates of forested area in the world add up to over 4 billion hectares, certified forests under FSC account for 4.5% and the PEFC 6.1% (Figure 1). Both schemes together add up to more than 424 million hectares, with an annual increase of around 9% since last year[10], much faster than the rate of growth between 2010 of 2011 of 4%.

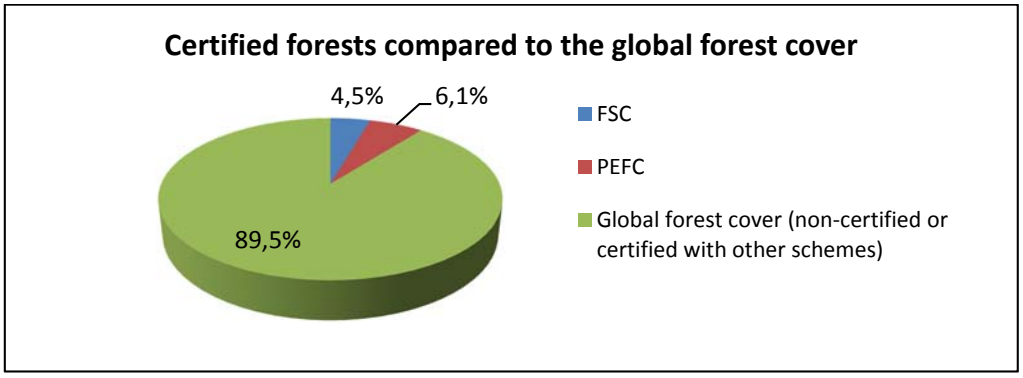


**Figure 1**. Certified forests compared to global forest cover (results from FSC and PEFC until July 2013 and May 2013 respectively).

However, almost 92% of the world's certified forests are in the Northern hemisphere. North America has certified 32.2% of its forests, Western Europe 56.8%, CIS 5.7%, Oceania 6.9%, Africa 1.1%, and Latin America 1.5% (Table A1 in Annex I) (UNECE, 2012). FSC is most widely used in tropical timber regions, but only 6% of all tropical forests worldwide are certified (IDH, 2013).

In summary, in terms of biodiversity mainstreaming, the forestry sector can be regarded as both in the strategy and the implementation phase. Many different efforts have been made by various public and private actors to develop policies and instruments for conserving biodiversity, but implementation has remained disappointing. In terms of the CBD Aichi Biodiversity Targets, the forestry sector has worked on many of the targets, although much

[9] See Table A2 in Annex I for summary of schemes, including history, description, governance, standards, and results.

[10] By May 2013, there was an estimated overlap of roughly 6.5 million hectares (half of which is in Europe) due to double certification (UNECE 2013).

is yet to be done. The following sections will discuss more in detail the extent to which the forestry sector is achieving the Aichi Targets.

## 2.4 Governance analysis

This section analyses the governance dimensions of the framework for mainstreaming biodiversity (Karlsson-Vinkhuyzen et al., 2014) for the FSC and PEFC certification schemes. The analysis includes two perspectives on these, first how certification schemes contribute to the mainstreaming of biodiversity in the forestry sector – *mainstreaming through forest certification* (i.e. broader analysis), and how FSC and PEFC have mainstreamed biodiversity aspects in their practices – *mainstreaming in forest certification* – (i.e. internal analysis). This latter perspective will be mainly assessed in detail in section 2.4.3.

### 2.4.1 Horizontal interactions

There are many actors at different levels that play a role in the governance of forests through certification. At the global level different governments are known to support different certification schemes and the perspective on SFM they represent. As an indirect indication, FSC dominates in terms of certified area, with certified forests in most countries (80 vs. 27 with PEFC)[11]. FSC especially dominates in Africa, Asia, and South America and the Caribbean. Also, some countries with large forest areas and important national forestry industries, such as Brazil (see Humphreys, 2009), Canada and Finland, have had a relatively large impact on intergovernmental forest-related negotiations.

NGOs have played a very important role in the development of the FSC. The FSC is a membership-based organization established in 1993 as a private intersectoral partnership between industry, social groups and environmental groups. It is governed in a way that seeks to balance the power relations between its members with three chambers (economic, social and environmental), each with one third of the votes in the General Assembly, and with Southern and Northern members each having 50% of the votes in each chamber.

The PEFC was created in 1999 as an international non-profit organization promoting SFM. The PEFC is a global umbrella organization of national forest certification schemes. Its highest decision making body, the General Assembly, includes both representatives of national certification schemes and extraordinary members (i.e. forest owners or industry representatives).

Most NGOs prefer the FSC to the PEFC. In terms of key supporters, the PEFC is favoured by forest owners' associations and many members of the forest industry. A quick review of some of the largest timber and paper companies in the world suggests that they all use forest certification standards, with the majority using both standards (Table A3, in Annex I).

### 2.4.2 Vertical interactions

Both FSC and PEFC schemes work both at the global and national/regional levels. The FSC has one global standard that includes ten Principles and Criteria that can be used directly in

[11] Also, regarding CoC certificates, companies in 113 countries have FSC CoC certificates, versus 63 with PEFC CoC certificates.

countries lacking nationally or regionally operationalized standards that are derived from the ten global principles. The PEFC endorses different national standards; hence, its standards can vary across countries and regions.

States have contributed to the expansion of certification schemes by welcoming them as appropriate and acting as consumers themselves (Gulbrandsen, 2006). Recent developments at the European and national level indicate the increasing importance of forest certification schemes in public procurement policies (Sprang and Meyer-Ohlendorf, 2006). Governments can thus support forest certification through their procurement policies, certifying their own forests, and supporting the development of certification standards.

Not only governments, but also other forest product buyers, including professional and household consumers, are important actors for achieving a larger market share for certified forest products. Markets in different countries vary in the extent to which consumers know about forest certification. Professional consumers have an important role to play, such as large building and construction companies and Do It Yourself (DIY) companies. Some of these companies, especially those who have been stimulated by environmental NGOs to sell FSC-certified products in order to increase demand for FSC-certified products, actively support FSC. On the production side, forest owners and managers are the key actors with the choice to apply for certification (thereby increasing the area under certification), choosing a certification scheme (and the criteria they include), and following through on its implementation (thus ensuring e.g. conservation of biodiversity through improving their forest management).

### 2.4.3 Policies and norms

Forest certification in essence entails the voluntary adoption by forest managers of certain standards (rules and norms) on how a forest should be managed, in exchange for a label. The degree to which certification can address biodiversity loss is partly related to the inclusiveness and stringency, and the compliance of those standards (Gulbrandsen, 2005b), with inclusiveness referring to the question whether all issues relevant to SFM are addressed by a scheme, and stringency to the level of ambition of the demands on a specific issue. In this section we look at the content of the standards (their stringency and inclusiveness), and we will discuss compliance in section 2.5 below (in terms of the global area of certified forests). The FSC and PEFC standards overlap in several aspects, but there are also large differences between the schemes, as well as different standards within each umbrella scheme (Cashore et al., 2004).

Overall, attention for biodiversity concerns has been integrated into both standards. The Principles and Criteria of the FSC (see Table 1) that especially relate to biodiversity conservation include indigenous people's rights (P3); benefits from the forest (P5); environmental impact (P6); and high conservation value forest (HCVF) (P9). The FSC international standard is currently being revised (FSC, 2012). The PEFC scheme argues that, since it endorses nationally developed standards, these can be tailored to the specific local biodiversity, environmental and ecological conditions in that given country, while also considering the political, socio-economic, cultural and administrative conditions. The PEFC has, however, seven general criteria for SFM which it uses in the endorsement of national standards (see Box 1).

**Table 1.** Principles of the FSC Standard (FSC, 1996).

| Principle | Description |
|---|---|
| **1. Compliance with laws** | Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria. |
| **2. Tenure and use rights and responsibilities** | Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established. |
| **3. Indigenous peoples' rights** | The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected. |
| **4. Community relations and worker's rights** | Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities. |
| **5. Benefits from the forest** | Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits. |
| **6. Environmental impact** | Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest. |
| **7. Management plan** | A management plan – appropriate to the scale and intensity of the operations – shall be written, implemented, and kept up to date. The long term objectives of management, and the means of achieving them, shall be clearly stated. |
| **8. Monitoring and assessment** | Monitoring shall be conducted – appropriate to the scale and intensity of forest management – to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts. |
| **9. Maintenance of High Conservation Value Forest** | Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach. |
| **10. Plantations** | Plantations shall be planned and managed in accordance with Principles and Criteria 1 - 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests. |

**Box 1: Criteria for Sustainable Forest Management under the PEFC**

1. Maintenance and appropriate enhancement of forest resources and their contribution to the global carbon cycle
2. Maintenance of forest ecosystem health and vitality
3. Maintenance and encouragement of productive functions of forests (wood and non-wood)
4. Maintenance, conservation and appropriate enhancement of biological diversity in forest ecosystems
5. Maintenance and appropriate enhancement of protective functions in forest management (notably soil and water)
6. Maintenance of other socio-economic functions and conditions

Source: PEFC (2012)

There is an ongoing academic debate on the comparison of the two standards. There are some studies that suggest that FSC has a more stringent and inclusive standard than the PEFC (see e.g. McDermott and Cashore, 2008; Gulbrandsen, 2005a), with some authors stating that FSC has more 'checks and balances' in place to keep inconsistencies at a minimum while providing clear assurance of performance and evidence of its impacts on forest management (Sprang and Meyer-Ohlendorf, 2006). Others argue that the PEFC might have a negative influence on biodiversity governance, because of its less stringent and inclusive standard compared to the FSC, enabling forest managers to choose for a less ambitious sustainability scheme (Visseren-Hamakers, 2013). Other questions raised include whether the differences between the standards are becoming smaller because of the ongoing competition between the two schemes, with some highlighting efforts to close the gap between both schemes (Overdevest, 2005). The standards could be involved in a 'race to the bottom' or a 'race to the top'. Finally, although the international standards and their P&C are general, how restrictive these are at the local, national or regional level also varies (see e.g. Schlyter et al., 2009).

Two national cases have been selected to illustrate examples of norms and policies of the FSC and PEFC (i.e. certification standards), and the extent to which they are including concern for biodiversity: The FSC Bolivian Standards for certification of forest management of timber-yielding products in the low lands of Bolivia (CFV, 1998), and the PEFC-endorsed CERTFOR from Chile for natural forests (CERTFOR and PEFC, 2007) (see Box 2). They have been selected since they are both operating in the South, on the same continent, and in important countries for biodiversity conservation.

The comparison shows that the Bolivian FSC standard (not considering implementation) mainstreams biodiversity more elaborately and specifically than the Chilean PEFC standard. Of course this comparison cannot be generalized to global conclusions on the differences between the two standards.

### 2.4.4 Interests

Sustainable Forest Management is a concept aiming to embrace and reconcile the different

economic, social and environmental interests in forests. However, interests arediverse and usually require trade-offs, with some even being mutually exclusive. For example with regard to biodiversity, *producers* often prefer the flexibility to determine their own actions, while *non-producers* tend to prefer more prescriptive standards and policies (Auld et al., 2008). The FSC has been categorized as a *performance-based scheme* (Sprang and Meyer-Ohlendorf, 2006), whilst the PEFC is a *producer-backed scheme*, representing the interests of international forest industry and trade organization (Peña-Claros et al., 2009), and some PEFC-endorsed schemes (e.g. the Canadian CSA) have been characterized as *system-based* standards, focused more on the presence of a forest management system. Producers have objected to the stringency and inclusiveness of the FSC's environmental and social standards (Auld et al., 2008), and to the design of FSC, namely the key role of NGO's in its development, and the ability of environmental and social interests to outvote economic interests.

**Box 2: Comparison between the Bolivian FSC and Chilean PEFC standards**

Both the Bolivian FSC and the Chilean PEFC:

- Avoid replacement of natural forest by other land uses
- Demand that ecological functions are maintained or improved
- Provide corridors between protection areas in the FMU
- Demand a minimum of 10% of the FMU to be reserved as conservation area
- Forbid the use of GMOs in the FMU

However, the FSC uses stronger and/or more detailed language on the following issues:

- Indigenous peoples' rights
- Ecosystem services
- Harvesting levels
- Environmental impact assessments
- Guidelines for forest management activities

Also, FSC includes issues that the PEFC does not mention, such as the landscape level, the prevention of the extinction of exploitable forest species, and the protection of representative samples of existing ecosystems within the landscape in their natural state. Both schemes address hunting, but in different manners.

Governments of countries whose forestry industries represent an important economic sector have an interest in defending these industries, and can be expected to have less stringent and inclusive approaches towards SFM in general and conserving biodiversity more specifically. Another important interest of forest-rich countries is defending their sovereign rights to decide themselves how to manage their forests and biodiversity (Humphreys, 2009). Another important topic is the interests of indigenous communities. For several forest-rich countries, this is a highly political and contentious issue. Since the FSC is in general more stringent on recognizing communities' rights, some countries are less keen to support or acknowledge this scheme.

### 2.4.5 Values

Forest certification – and its potential to contribute to biodiversity conservation – has been supported by the current dominant preference for market-based environmental policies over governmental policies.

Some actors, such as certain NGOs and social scientists, view certification specifically, and market-based approaches towards sustainable development more generally, as supporting the 'commodification of nature' and are critical of this development. The NGO movement is increasingly divided into 'collaborative' NGOs, which work together with companies to make markets more sustainable, and 'campaigning' NGOs, who critique the underlying values and nature of market-based approaches and the limited effectiveness of certification (Visseren-Hamakers 2013).

### 2.4.6 Framing

Certification is often framed as having a large contribution to SFM and biodiversity conservation. "Certification is now widely advocated as a strategy to conserve the world's forests and the biodiversity they contain; some consumers will pay a premium for products that promise 'biodiversity friendly' forest management and some markets are closing to non-certified forest products" (Sheil et al., 2010, p. v). In parallel, however, there are also negative frames around forest certification that sees it as part of the commodification of nature (see above) or as simply insufficient to prevent forest degradation and biodiversity loss (see discussion on effectiveness below).

A quite different, emerging, way of framing certification in the forestry sector is to look at it as part of the solution to climate change. Sustainable management of forests is currently being addressed as part of REDD+, a mechanism for reducing emissions from deforestation and forest degradation in developing countries under the UNFCCC (UNFCCC, 2011). Forest certification standards have not fully made use of the opportunity of the attention given to climate change, and the role of forests in climate change, to profile them. FSC has been hesitant to become involved in climate change activities, but has started to become engaged (de la Plaza et al., 2014). If the certification schemes better frame themselves as a 'ready to be implemented' instrument for REDD+, their role in putting biodiversity at the centre of forest-related climate mitigation efforts could become important.

### 2.4.7 Leadership

As one of the first large certification schemes for more sustainable forestry, FSC has contributed significantly to the institutionalization of the certification instrument (Visseren-Hamakers, 2013). Environmental NGOs like WWF played key roles in setting up the FSC, but their leadership came perhaps partly as a response to the lack of leadership by governments to devise global legally binding norms with regard to forests in the early 1990s. The WWF has continued to be a leader in aiming to achieve more FSC forests worldwide (WWF, 2010). The Sustainable Trade Initiative (IDH) is an example of another NGO working for the same goal, aiming to substantially increase the FSC-certified area in tropical forests and the trade of FSC-certified products (IDH, 2013). In addition, many governments have promoted both FSC and PEFC certification in their countries, for example through public procurement (see above), and have thus acted as leaders in expanding the area certified. The countries with the highest certified area by one or both schemes also include some of the most forested countries in the world, such as the Russian Federation (FSC), Brazil (FSC) and Canada (PEFC).

Development cooperation NGOs such as ICCO and Oxfam have supported communities in the South to become FSC-certified (FSC Nederland, 2010; OXFAM, 2012). With their knowledge of supporting local communities, these NGOs were able to support the further expansion of FSC-certified forests in the South, and play a leadership role in this way since it is in developing countries that certification is least prevalent. Greenpeace, that is also a member of the FSC, has sought another type of leadership role, by ensuring that the FSC standard is improved (Greenpeace, 2013). With this, Greenpeace seeks to improve the system from within. The NGO FSC-Watch is pursuing a similar approach, by publicly highlighting aspects of the FSC that should be improved (see FSC-Watch, 2013).

### 2.4.8 Knowledge

Public awareness of forest certification is limited, and many end-users do not understand the meaning of certified forest products, and the differences between the standards. Forest certification has, however, contributed to learning about new forest management practices among companies (Rickenbach and Overdevest, 2006), and has raised awareness and disseminated knowledge on a holistic SFM concept, embracing economic, environmental and social issues, worldwide (Rametsteiner and Simula, 2003). There remain, nonetheless, important knowledge gaps with regard to certification and biodiversity. There is a range of different types of information required around the impacts of forest certification, including knowledge about the forest sector, temporal dynamics of certification, the political economy of the forestry sector, and land use change (Romero et al., 2013).

While there is a lot of literature assessing sustainability and biodiversity-related issues in forest certification, many authors agree that there is a clear gap of knowledge on the actual biodiversity performance, in other words, there is a lack of empirical studies of the ecological impacts of forest certification (see Clark and Kozar, 2011; van Kuijl et al., 2009). For instance, there is little comparative research carried out into the forests' biodiversity prior to and post certification. Also, there is little quantitative evidence about the long-term effects of certified forest management on biodiversity, for example whether certified forest management is sustainable in terms of biodiversity conservation at the level of populations and communities (van Kuijl et al., 2009). It is also relevant to mention that the summaries of FSC audit reports are public, contrary to those of the PEFC, thus most desk-based research on certification effectiveness has focused on FSC (Sprang and Meyer-Ohlendorf, 2006).

In addition, there is an apparent imbalance in forest certification analyses in terms of country focus. For instance, many analyses have been done in large FSC-uptake countries such as the UK and Sweden, whilst others with large certified areas like Croatia, Poland, Uruguay, Ireland and the Baltic states, have received little attention so far (Marx and Cuypers, 2010).

### 2.4.9 Time

In general terms, there has been a rapid growth of certified area since the inception of both schemes. From 2010-2011 there was an increase of 4%, and from 2011 to 2012 an increase of 9%. This would indicate that certification is a tool that could quickly become an important measure for conserving biodiversity. On the other hand, practitioners perceive time and audit costs as some of the largest disadvantages of forest certification (Cubbage et al., 2009).

### 2.4.10 Financial resources

The FAO (2008a) has shown that at the global level in 2006, the (formal) forestry sector employed 13.7 million people, generated US$ 468 billion in value-added (i.e. the forestry sector's contribution to GDP), and exported products with a total value of US$ 291 billion (i.e. the sector's contribution to trade balances). Estimated to total around US$ 15 billion per year in developing countries and countries in transition, private-sector investment in the forestry sector far outstrips the combined investments of governments and agencies (Asen et al., 2012). On the other hand, governments generally spend more on forestry than they collect in revenue. The economic importance of the forestry industry can thus influence the potential willingness of governments to demand SFM, particularly in times of economic crises.

At the level of the individual producer, however, the cost of certification can be a considerable obstacle (see above), and is certainly one of the reasons for the slow growth of certification in developing countries. Cubbage et al. (2009) examined the costs of forest certification in the Americas. These varied considerably depending mostly on forest size. Median average total costs ranged from US$ 6.45 to $ 39.31 per ha per year for small areas of less than 4,000 hectares. The large owners of 400,000 ha or more had median costs of $ 0.07 to $ 0.49 per ha per year. The expected premiums on certified timber are also often disappointing.

Development cooperation funding could be an important source to enhance the biodiversity mainstreaming potential of forest certification. For instance, the WWF/WB Global Forest Alliance created the Forest Certification Assessment Guide, created for both partner organizations to use in their common and individual work on promoting and developing forest certification (WWF/World Bank Global Forest Alliance, 2006).

## 2.5 Effectiveness and legitimacy of mainstreaming efforts

Several scholars have raised questions regarding the effectiveness of forest certification that are relevant for its potential to mainstream biodiversity. Two major factors that could influence the impacts of certification on biodiversity, and thus should be part of an evaluation of effectiveness include:

1) the size of the areas covered by certification and the characteristics of these forests (*mainstreaming biodiversity through forest certification*) and
2) the quality of the certification criteria used with respect to biodiversity (*mainstreaming in forest certification*) (see also Rametsteiner and Simula, 2003).

In the first case, certification by the FSC and PEFC has expanded relatively fast in the past two decades with over 424 million ha under certification, albeit mostly in developed countries in the Northern hemisphere. The two schemes have been adopted in many countries and by many companies, including the largest timber and paper production companies, throughout the world. However, there is still much progress to be made, as currently only 34% of the countries of the world have FSC certified forests, and 11,6% areas certified under PEFC-endorsed schemes. Perhaps more importantly, only 6% of the certified

area is in tropical forests in Africa, Asia and South America, the biodiversity rich regions for which certification was originally intended as a tool for more sustainable forest management. Expanding certification in the tropics remains a goal for many organizations and countries (Sheil et al., 2010).

In the second case, the FSC and PEFC have both developed SFM principles and criteria that include biodiversity concerns both explicitly and implicitly. They include several requirements for the protection of environmental values and services from negative impacts, and also for managing environmental priority areas (like HCVF). Based on our comparison of the Bolivian FSC and Chilean PEFC, it seems this specific FSC standard could be regarded as mainstreaming biodiversity more thoroughly than the PEFC standard. This supports arguments by some scholars who state that the FSC is more stringent and inclusive than the PEFC (as discussed in 2.4.3).

However, effectiveness of the biodiversity relevant principles and criteria within the standards ultimately depends on the degree to which they are accepted, internalized, and applied. Impacts of forest certification have been measured at different scales. At the level of the forest management unit (FMU), for instance, studies have found better management practices (Auld et al., 2008; Peña-Claros et al., 2009).[12] It also has been noted that the impacts of forest certification can be mostly indirect, unintended, long-term and slow moving (Auld et al., 2008). Overall, it seems that forest certification is likely to have limited, but positive impacts on SFM and biodiversity (Rametsteiner and Simula, 2003). However, not much research has been done to assess whether forest certification improves the biodiversity performance of forest management (see Schulte-Herbrüggen and Davies, 2006; van Kuijl 2009, Sheil et al., 2010; Peña-Claros et al., 2009; Newsom, 2009). Most of the research has been done on the FSC, and has been based on desk studies, with only a hand-full of studies based on research on-the-ground (Visseren-Hamakers and Pattberg, 2013). As argued by Romero et al., (2013, p. 1), "Many forest stakeholders now agree on the need to critically assess when, where, how, to what extent, why, at what cost to whom and for how long certification changed the ways forests are managed". Several organizations have acknowledged this gap, and research is currently underway to assess the impacts of certification on the ground. Such critical assessment is likely to be a crucial element of building a continued legitimacy of forest certification in the eyes of public and private consumers, and would be an obvious element in ensuring good relationships of accountability between producers and consumers. Other relevant dimensions of the certification schemes that influence legitimacy include the rules for participation and transparency that vary between and within the FSC and PEFC schemes. For instance, both standards involve stakeholders pertinent for mainstreaming biodiversity (such as governments, ENGOs, major timber and paper producers), although civil society groups are better represented in the FSC. The FSC has also been characterized as having meaningful participation processes, partly due to the balance of powers in the voting system (Sprang and Meyer-Ohlendorf, 2006), and the transparency in terms of the public availability of (summaries of) audit reports.

[12] Peña-Claros et al. (2009) assessed the impact of FSC certification on economic, social and ecological aspects of forest management by comparing the actions requested (CARs) in the main evaluation and 5 years after re-certification.

## 2.6 Synthesis

### 2.6.1 Identifying levers and barriers of change

The most prominent levers and barriers of change for mainstreaming biodiversity in the forestry sector, which came to light in this analysis, are presented in Table 2.

It is clear that there are a number of structural/institutional barriers that constrain the mainstreaming of biodiversity. They include contextual barriers outside the domain of forestry, such as current economic crises, but also the lack of global norms and policies on sustainable forest management that would allow measures beyond voluntary certification schemes. On the other hand, governments in some regions are increasingly promoting certification through their public procurement policies and putting in place policies against illegal logging and the trade in illegal timber. There is clearly also an important lever in national forest-related laws and regulations. If these are more ambitious (with regard to conservation) and enforceable, the step towards certification could be lower. The presence of two global certification schemes also raises the question of how to ensure that the competition between the FSC and PEFC becomes a 'race to the top' instead of a 'race to the bottom'.

With the large economic interests involved in the forestry sector in many countries around the world, the low political will for ambitious forest policies at the global level, and the highly political issue of national sovereignty over natural resources, there are sufficient barriers to the mainstreaming of biodiversity in the forestry sector. Furthermore, the FSC and PEFC represent different views on the values that forest certification should represent, and there is a relatively vocal negative framing of forest certification that sees it as part of undesirable market-based approaches to conservation. On the other hand the opportunities for change in the forestry sector include the on-going and potential leadership roles of NGOs, large companies and professional consumers in the forestry supply chain in promoting certification, the current dominant preference for market-based instruments among main actors involved, and the current political attention for REDD+ and illegal logging. There are some actors that seek a leadership role with regard to expanding the areas of certified forests, including governments and NGOs like WWF, while other NGOs such as Greenpeace and FSC-Watch focus on improving the content of the standards.

The barriers for mainstreaming related to knowledge include the limited understanding among consumers of SFM, FSC and PEFC and their differences, and the general lack of knowledge on the biodiversity impacts of forest certification. With proper investment of time and resources, these barriers could be turned into important levers. For example, if consumers in emerging markets such as Brazil and China become increasingly concerned with forest and biodiversity conservation and aware of the certification schemes, this could dramatically change the demand for certified timber. Also, with the costs of certification being one of the reasons for the current unbalance in implementation of certification between the North and South, lack of resources is a significant barrier that needs attention from bilateral and multilateral donors. The development of a market for REDD+ carbon credits with biodiversity safeguards may provide another avenue for mainstreaming.

**Table 1**. Barriers and levers for addressing biodiversity in the forestry sector.

| *Cross-cutting elements/ Dimension* | | Potential for change | |
|---|---|---|---|
| | | **Barriers** | **Levers** |
| Institutional | **Horizontal and vertical interactions** | - Relatively low political will for ambitious intergovernmental global forest policy<br>- Some tropical countries have less capacity to implement certification<br>- The differences in the stringency of PEFC across different countries makes its potential for biodiversity mainstreaming difficult to assess at a global level<br>- The often low level of knowledge of consumers on forest certification is a barrier for its mainstreaming potential | - NGOs can promote certification<br>- Large companies are already using certification<br>- Illegal logging policies can be used to create prerequisites for large-scale implementation of SFM<br>- NGOs can play an important role in vertical governance, as they have partners and are active at all governance levels<br>- Professional consumers (both governmental and private) are an important market for certified forest products |
| | **Policies and norms** | - The differences between the biodiversity mainstreaming in the FSC and PEFC schemes are not well known and contested | - It is not clear whether the standards are becoming increasingly alike or not. This 'race to the bottom' or 'race to the top' can have an important impact on the biodiversity mainstreaming potential of forest certification |
| Motivational | **Interests** | - Sovereignty issues can be a barrier for large-scale implementation of forest certification<br>- The forestry sector is important for many national economies, discouraging ambitious biodiversity targets | |
| | **Values** | - The ongoing debate on the appropriate approach to SFM may be a barrier for the success of forest certification as a whole<br>- The question is what will happen in the longer term in the relationship between collaborative and campaigning NGOs | - The current preference for market-based governance can support the potential of forest certification in biodiversity mainstreaming, although its popularity seems to slow down a bit |
| | **Framing** | | - The current relatively large attention for REDD+ can support further expansion of forest certification |
| | **Leadership** | | - NGOs can play an important role in promoting and enhancing certification |
| Means | **Knowledge** | - The knowledge gap on the biodiversity impact of forest certification in general and specific standards needs to be solved<br>- Consumers should become better informed about forest certification | - The awareness on the knowledge gap is growing, and research is starting to be done |
| | **Time** | - There is a potential trade-off between fast growth in the area certified (quick certification with schemes with lower demands) and slower growth with schemes with more stringent demands which could take more time to implement | |
| | **Financial resources** | - The forestry sector is under pressure from the current economic crisis, making sustainability issues less of a priority | |

### 2.6.2 Possible future strategies in forest certification and beyond

Biodiversity mainstreaming in the forestry sector can be further enhanced through the FSC and PEFC by a) strengthening the standards for biodiversity conservation, and b) by increasing the area of forest cover by the schemes. However, there must be balance between these two factors. As argued by Schlyter et al., (2009, p. 377), "A highly stringent standard with small area coverage, due to limited acceptance is not likely to have a large environmental impact. Likewise, a very weak standard with a large coverage will not generate any significant impact."

An important lever for expanding the area of forest certification, allowing mainstreaming of biodiversity in the forestry sector, is the further acceptance of these schemes. Besides the 'wide' adoption of the standards in developed countries, where deforestation is a relatively smaller problem, but timber and paper production are relevant sectors, forest certification has also gained momentum as a conservation strategy in tropical forest countries, where both biodiversity and deforestation are higher (Ebeling and Yasué, 2009). However, the extent to which certification can be adopted as a governance tool in developing countries is limited, for example due to financial constraints. Hence, strong incentives are needed to increase the total area certified in area in tropical forests (Peña-Claros et al., 2009). Initiatives that already exist, which could be up-scaled, include collaboration among market actors in the supply chain, with timber traders in the North supporting their suppliers' efforts to become certified, NGOs supporting small companies and local communities with certification initiatives, and development cooperation funding focusing on achieving a larger area of certified forest. An important issue that also needs attention is for forests to stay certified, since forest managers losing or abandoning their certificates is a recurring problem.

The principles and criteria of the standards are already incorporating biodiversity aspects, constituting an important basis to further the mainstreaming process. It is important to focus on those that are pivotal for biodiversity mainstreaming, such as the HCVF and the precautionary principle (Roe and Mapendembe, 2011). The principles and criteria have different degrees of detail, inclusiveness and stringency, and the extent to which they can enhance the mainstreaming process depends on the effectiveness on the ground. Also, there are opportunities for participation and legitimacy by the rule-setting authority of these (public-) private partnerships based on a multi-stakeholder logic, as seen for FSC by Boström and Hallström (2013). For instance, the legitimate engagement of the main stakeholders (especially in the FSC), and seizing their leadership, interests, capacities and resources and on-the-ground action can boost the mainstreaming process in forest certification, and thus, in the forestry sector. On the other hand, the wide acceptance of the PEFC among timber and paper companies worldwide can also constitute a useful linkage of the private sector to the mainstreaming process. Also, sustainability certification in general is currently receiving increasing scrutiny, which creates momentum for efforts to improve their sustainability performance.

Another urgent action is to improve multi-disciplinary knowledge on the impacts of forest certification. Research must build on existing models, monitoring data, and new empirical studies (Clark and Kozar, 2011), should synthesize information from existing studies, and critically analyse and compile learned lessons (Romero et al., 2013). There are recent efforts to start filling this knowledge gap. It is important to see whether the current efforts fill the crucial knowledge gaps, or whether additional efforts are needed.

In addition, certification by itself is not sufficient; it is only one of the tools to achieve SFM, and it must be part of a broader, more integral strategy to sustainably manage forest resources. As recognized by Rayner et al., (2010), international forest governance is complex and fragmented, and needs synergistic approaches through a wide range of policy instruments, embracing inter-sectoral and inter-institutional complexity. Effective land use planning led by governments is pivotal, integrating diverse measures to enhance SFM and forest biodiversity conservation, including strict conservation, sustainable forest management, community forest management, and restoration. Sustainable management of forests in the 'plus' of REDD+ needs to be further developed. It has been argued that forest certification could become a useful tool in avoiding degradation and forest degradation under the REDD+ scheme (Marx and Cuypers, 2010; De la Plaza et al., 2014).

Also, more clearly framing certification as an instrument to combat illegal logging could enhance its broader adoption and implementation. Many countries are involved in implementing policies to combat illegal logging, which could provide the needed incentives to further implement certification.

Not only the number of certified hectares needs attention, but also the market for certified products. These efforts need to work in parallel, as done for example through the IDH, since a forest can only remain certified if there are buyers for the certified products. Professional consumers have an important role to play in ensuring forest managers that there is a market for certified forest products.

### 2.6.3 Insights for the overall sector

Since the forestry sector – and its main products such as timber and paper – has impacts on forests biodiversity, the optimal goal should be to attempt the balance between achieving socio-economic and environmental objectives: sustainable forest management. Since SFM is already an internalized concept in the sector, framing biodiversity mainstreaming as intensifying SFM could be a successful approach.

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## Acronyms

| | |
|---|---|
| CAR | Corrective Action Request |
| CBD | Convention of Biological Diversity |
| CoC | Custody of Chain |
| ENGO | Environmental Non-governmental organization |
| FMU | Forest Management Units |
| FSC | Forest Stewardship Council |
| HCVF | High Conservation Value Forests |
| PBL | Netherlands Environmental Assessment Agency |
| PEFC | Programme for the Endorsement of Forest Certification |
| SFM | Sustainable Forest Management |

## Annex I: Supporting tables and figures

**Table A1.** Certified forest area and estimated roundwood from certified forests (adapted from UNECE 2013).

| Region | Total forest area (million ha) | Certified forest area (million ha) | Certified forest area (%) | Estimated roundwood from certified forests (million $m^3$) | Estimated roundwood from certified forests (%) |
|---|---|---|---|---|---|
| **North America** | 614.2 | 198.0 | 32.2% | 224.0 | 47.8% |
| **Western Europe** | 168.1 | 95.4 | 56.8% | 224.7 | 48.0% |
| **Commonwealth of Independent States** | 836.9 | 47.5 | 5.7% | 9.1 | 1.9% |
| **Oceania** | 191.4 | 13.2 | 6.9% | 3.8 | 0.8% |
| **Africa** | 674.4 | 7.2 | 1.1% | 0.8 | 0.2% |
| **Latin America** | 955.6 | 14.7 | 1.5% | 2.9 | 0.6% |
| **Asia** | 592.5 | 9.5 | 1.6% | 3.2 | 0.7% |
| **World** | 4033.1 | 385.5 | 9.6% | 468.5 | |

**Table A2**. Comparison between the FSC and PEFC.

| Scheme | FSC | PEFC |
|---|---|---|
| ***History/evolution process*** | Founded in 1993, by the environmental movement. First large certification scheme for SFM. | Established in 1999, by private sector. |
| ***Description of the scheme*** | Single standard that is applied globally. | PEFC endorses existing national schemes. |
| | Both require operational units in the respective system to comply with at least the ISO standards for certification and accreditation. | |
| ***Governance structure*** | Membership; General Assembly with 3 chambers (environmental, economic and social) with equal voting power. Centrally controlled, endorsement of national working groups, standards and certification bodies. Three decision-making bodies: General Assembly, Board of directors and Director General. | Umbrella organization; National members (or National Governing Bodies) are independent, national organizations implemented a PEFC system within the country. International stakeholder members include NGOs, companies and associations. Three levels of decision-making: General Assembly, Board of directors and Secretary General. |
| ***Results*** | - 180 million ha. (1211 forest management certificates) in 79 countries.<br>- 26458 CoC certificates in 113 countries | - 244 million ha. in 27 countries<br>- 32 endorsed national certification systems<br>- 9808 CoC certificates in 64 countries |

**Table A3**. Large timber and paper companies in the world and certification systems they use*.

| COMPANIES FROM THE NORTH | | | | |
|---|---|---|---|---|
| **Company** | **Production sawnwood ($m^3$/yr.)** | **Products** | **Main country(ies) of operation** | **Certification systems** |
| **West Fraser Timber Co Ltd** | 8,800,000 | Lumber, related solid wood products | Canada, USA | SFI**, PEFC |
| **Canfor** | 7,300,000 | Wood building | Canada, USA ( and businesses in Europe and Asia) | FSC**, PEFC, ISO, CSA** |
| **Weyerhaeuser** | 6,449,000 | Growing and harvesting trees, builds homes and making a range of forest products | USA and 11 countries | SFI**, FSC, PEFC |
| **Stora Enso** | 5,960,000 | Packaging, paper, and wood products industry (renewable materials) | Finland, Sweden, the Baltic states, Continental Europe and Russia. Around 6% of the wood is from tree plantations in the Southern Hemisphere | FSC, PEFC |
| **Georgia Pacific** | 4,300,000 | forest products: newsprint, commercial printing papers, market pulp and wood products. | USA, Canada and South Korea | SFI**, PEFC, FSC |
| **Ilim Timber** | 3,900,000 (200.000 $m^3$ of plywood) | sawn wood and plywood | Russia, Germany and USA | FSC, PEFC, SFI |
| **Resolute Forest Products** | 3,850,000 | pulp and paper; wood products, woodlands | Canada | FSC, SFI**, PEFC |
| **Tolko Industries Ltd** | 3,800,000 | Lumber, unbleached kraft papers, panel products, co-products, biomass power | Canada | ISO 14001 (EMS), PEFC |
| **Sierra Pacific Industries** | 3,200,000 | lumber | USA | SFI** |
| **Hamton Affiliates** | 3,100,000 | Lumber | USA | FSC |

**Table A3**. Continued

| COMPANIES FROM THE SOUTH | | | | |
|---|---|---|---|---|
| **Company** | **Production** | **Products** | **Main country(ies) of operation** | **Certifica-tion systems** |
| **Arauco** | 3.2 million tonnes wood pulp; 2.8 million $m^3$/yr (sawn timber ) | wood pulp, wood products | Chile, Argentina, Brazil, Perú, Colombia and Uruguay | PEFC, FSC |
| **MASISA** | 3 million $m^3$/yr (wood boards) | wood products | Chile, Argentina, Perú, Brazil, Venezuela, México, USA | FSC |
| **CMPC** | 2,8 million tons/yr. (pulp) | Paper production | Chile, Argentina, Brazil, Perú, Colombia and Uruguay | FSC, PEFC |
| **Fibria** | 6.7 million tons (pulp and paper) | Pulp and paper | Brazil | FSC, PEFC |
| **Suzano Papel e Celulose** | 2.7 million tons (pulp and paper) | pulp and paper | Brazil | FSC, PEFC |
| **Asia Pacific Resources International Limited (APRIL)** | 2.8 million tons/yr. (pulp and paper) | fibre, pulp and paper, hardwood kraft (BHK) pulp | Indonesia | withdrawal from FSC CoC |
| **Hyne** | 0.9 $m^3$/yr (sawn wood) | timber products | Australia | PEFC (AFS) |

*Sources: Google search for "largest timber & paper companies in the world, individual webpages of each company, and the list is based on the top 10 ten sawnwood production in the **world:** *http://www.sawmilldatabase.com/productiontoplist.php.*
**SFI and CSA are PEFC endorsed.

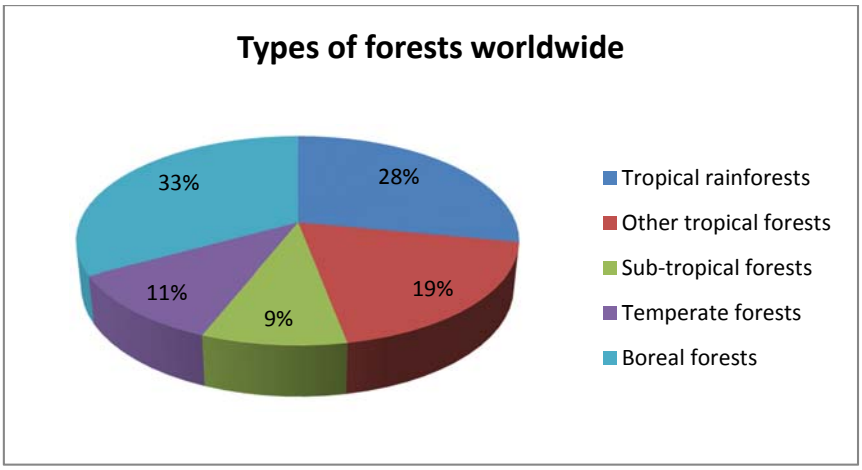


**Figure A1**.Types of forests worldwide (UNEP, FAO, UNFF, 2009).

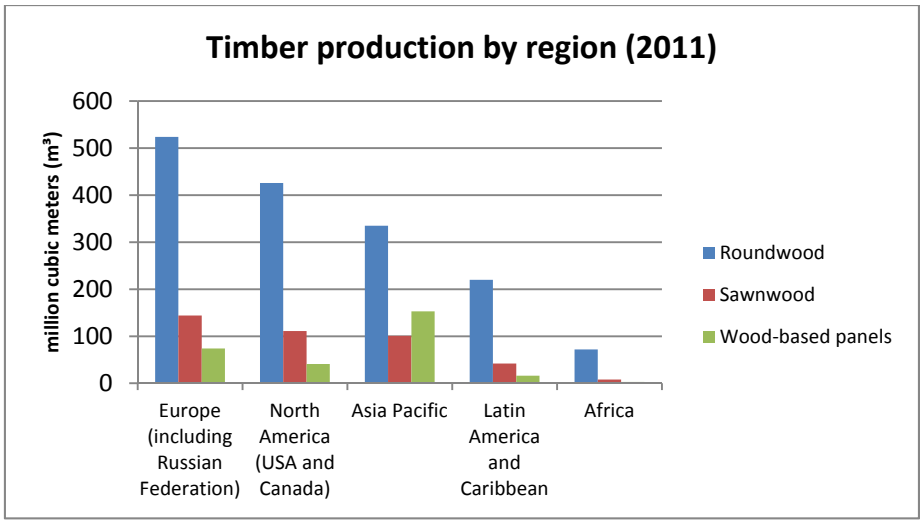


**Figure A2**. Timber production (roundwood, sawnwood and wood-based panels) in 2011 by region (FAO 2011).

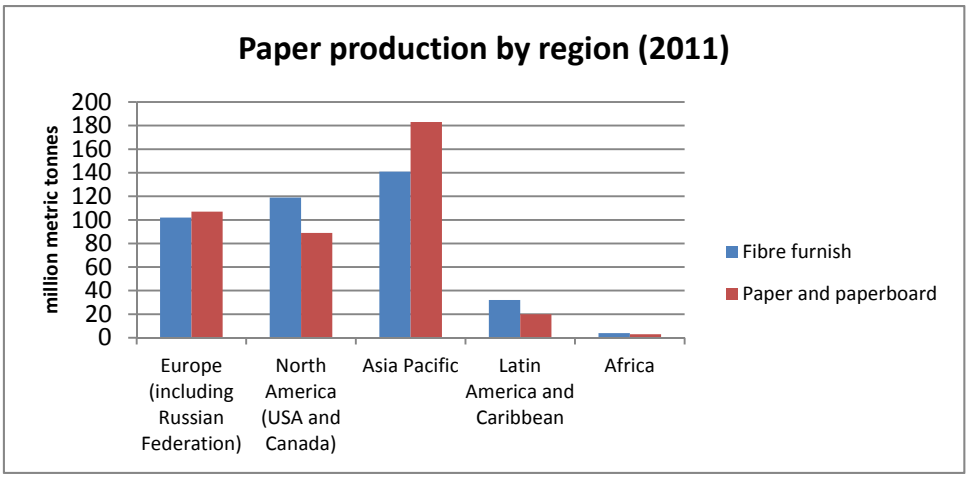


**Figure A3**. Paper production in 2011 by region (FAO 2011).

# Chapter 3. Mainstreaming Biodiversity in Fisheries Management: The case of the Marine Stewardship Council

Luc van Hoof with contributions from Jan van Tatenhove

## 3.1 Introduction

The marine capture fisheries sector shows a wide variety across the globe as to its characteristics, ranging from small scale artisanal fisheries to large scale commercial fishing operations; and from subsistence, coastal communities based fisheries to global commercial fisheries. Worldwide, fisheries are perceived to be in crisis as fish stocks have declined following a discrepancy between available fish stock and fishing effort deployed. Fisheries are characterized by the "Tragedy of the Commons" (Hardin, 1968, Commission of the European Communities, 2011a); individuals operating in their own interest tend to overexploit a common-pool resource. The ensuing race for fish creates an incentive to emphasize short-term gains and de-emphasize long-term incentives for stewardship (Hanna, 2001). Hence the core question in fisheries management, as in other environmental and resource dilemmas, is how to bridge the gap between private decisions and societal and environmental impacts?

One of the possible measures to bridge this perceived gap is the use of certification and labelling of sustainably yielded produce. The Marine Stewardship Council labelling programme (MSC) that we are analysing in this chapter was established to manage marine fisheries more sustainably. The MSC was established in London in 1997, four years after the establishment of the Forest Stewardship Council (FSC). WWF and Unilever came together in the wake of the collapse of the Grand Banks cod fishery to create a market based programme to promote and encourage sustainable fishing (Marine Stewardship Council, 2009).

## 3.2 Marine biodiversity and fisheries

There are ample data that suggest fisheries exploitation affects not only target stocks but also communities of organisms, ecological processes, and even entire ecosystems (Agardy, 2000). Overfishing is a major environmental problem in the oceans. In addition to the direct loss of the exploited species, the very act of fishing, particularly with mobile bottom gear, destroys habitat and ultimately results in the loss of biodiversity. Furthermore, overfishing can create trophic cascades in marine communities that cause similar declines in species richness. These effects are compounded by indirect effects on habitat that occur through removal of ecological or ecosystem ‘engineers’. Mass removal of species that restructure the architecture of habitat and thus increase its complexity or influence the biogeochemistry of sediments could have devastating effects on local biodiversity and important water–sediment processes. The possible overexploitation of engineering species requires more attention because the consequences extend beyond their own decline to affect the rest of

the ecosystem. This is particularly problematic in the deep ocean, where oil and gas exploration and fishing pressure are likely to increase (Coleman and Williams, 2002).

Human-dominated marine ecosystems are experiencing accelerating loss of populations and species, with largely unknown consequences. Overall, rates of resource collapse increased and recovery potential, stability, and water quality decreased exponentially with declining diversity. Marine biodiversity loss is increasingly impairing the ocean's capacity to provide food, maintain water quality, and recover from perturbations (Worm et al., 2006).

## 3.3 Current mainstreaming efforts

The declining fish stocks lead national government fisheries management to focus on managing the deployment of the fishing fleet's capacity (input regulation), regulating the amount of fish landed (output regulation) and the way the fish are being caught (technical measures). Catch limits are now widely introduced in the form of Total Allowable Catch (TAC) (van Hoof et al., 2007). Table 1 outlines some examples of national fisheries management measures.

Furthermore, governments have jointly adopted at the World Summit on Sustainable Development in Johannesburg the goal of achieving maximum sustainable yield (MSY) for all fish stocks by 2015. Also included in the World Summit on Sustainable Development outcome in 2002 and later formulated as one of the Aichi targets for 2020 was the objective that fisheries should have: recovery plans and measures in place for all depleted species, have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems should be within safe ecological limits. A regional example of an effort to strengthen the legal framework is the European Union's introduction of the Marine Strategy Framework Directive (MSFD). Whereas under the EU Common Fisheries Policy the focus is more on single fish stock management, the MSFD in combination with the European Birds Directive and Habitat Directive bring more biodiversity considerations to the table.

It is parallel to these government initiatives that various market based initiatives have been started to address the marine ecosystem health. The MSC is world's leading certification and eco-labelling programme for sustainable seafood and by linking sustainability concerns via an eco-label in the market between producers and consumers the MSC programme can clearly be perceived as a major mainstreaming effort in conserving biodiversity in the marine realm. The MSC's Principles and Criteria for Sustainable Fishing were developed to encourage sustainable fisheries – regardless of their size, scale, complexity, geography, or technology – to be assessed for any commercial fishery anywhere in the world. The MSC sets three general principles relating to the issue of overfishing, the health of the ecosystem, as well as effective management system that respects local, national, and international laws and standards (Boström and Hallström, 2013).

Today the programme has 200 fisheries certified, over a 100 currently undergoing assessment and over 2,000 companies having met the MSC Chain of Custody standard for seafood traceability (International Trade Centre; 2013, Marine Stewardship Council, 2013b).

Some 8% of the global total wild capture harvest is MSC labelled and over 2,000 companies have met the MSC Chain of Custody standard for seafood traceability (Marine Stewardship Council, 2012a, Marine Stewardship Council, 2013a). The MSC works in partnership with a number of organisations, businesses and funders around the world but is fully independent of all.

**Table 1.** Examples of national fisheries management measures.

| Typology | Instrument | As for example applied in |
|---|---|---|
| Input control | Unitisation schemes | Australia |
| | Effort limits and temporal and spatial closures | Canada, Australia, Iceland, Norway |
| | Licence limits | US, Canada, Australia, New Zealand, Norway |
| | Technical limits such as the type and size of gear used | Canada, Australia, Iceland, Norway, EU |
| | Entry/exit scheme | EU |
| | Decommissioning/buyback vessels, permits | US, Canada, Australia, Norway |
| Output Control | TAC | US, Canada, Australia, New Zealand, Iceland, Norway, EU |
| | Individual Quota (IQs) Fishing cooperatives, community quotas, area-based quota programs, vessel quota | US, Australia, Norway |
| | Transferable Quota (ITQs)/harvest rights | Canada, Australia, New Zealand, Iceland |
| Access charges | Management cost recovery | New Zealand |

Source: van Hoof (2010)

In summary, if we consider the 5 strategic goals of the CBD as formulated in 2010, noting that the MSC label has a prime focus on introducing a market based incentive in sustainable fish production coupled with a strive for increased knowledge management and capacity building, than MSC is most closely related to objectives **Strategic Goal B** (Reduce the direct pressures on biodiversity and promote sustainable use) and **Strategic Goal E** (Enhance implementation through participatory planning, knowledge management and capacity building). Aichi target 6 related to Goal B (by 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches…) is particularly pertinent as this reflects a worldwide commitment to

implementation of this general sustainability framework for fisheries. The MSC labelling effort as such is clearly an example of mainstreaming sustainability considerations in fish production and hence relates clearly to **Strategic Goal A** (Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society). Relating to **Strategic Goal C** (To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity) the MSC label is built on management practices in the different fisheries across the globe. As for **Strategic Goal D** (Enhance the benefits to all from biodiversity and ecosystem services) the MSC label as such does not relate to equity issues.

## 3.4 Governance analysis

On the map below (Figure 1) the certified fisheries are shown. Although a clear concentration of fisheries in the North Atlantic can be noted, certified fisheries can be found all over the globe. In recent years there has been a trend of increased applications for certification of fisheries in the Southern hemisphere. Examples of types of certified fisheries can be found in Annex I.


**Figure 1.** Certified fisheries. Source: Marine Stewardship Council (2013b).

In the following sections the governance dimensions that form part of the framework for mainstreaming biodiversity (Karlsson-Vinkhuyzen et al., 2014) are analysed for marine fisheries that are certified through the MSC programme.

### 3.4.1 Horizontal and vertical interactions

In the case of labelling fisheries the key players are the relevant fishing sectors, government and the labelling institution, in this case MSC. This represents a rather complex world. The fishing sector encompasses primary producers (the fishers) and the further steps in the processing and marketing chain. Fisheries can be classified along different yardsticks such as e.g. in-land, coastal fisheries versus sea fisheries, artisanal versus commercial fisheries. Also an important distinction to be made is differences in *métier* the combination of fishing

technique used by fishermen, targeting a specific species, within a specific fishing zone. The métier types vary considerably across regions. In addition there is a difference between fishers targeting a specific species and fishers fishing this species as by-catch.

In short, there is no one single fishing sector at the national level, let alone at the regional level of the ecosystem. In addition there is also no single legal framework operational at the regional level; different actors are involved in fisheries policy at different levels. If we take a closer look at practices in the European Union then first we note that in fisheries policy the European Commission has exclusive competence (Hawkins, 2005); the Commission plays a central role in setting policies. However, implementation of policies is left to the individual Member States. This results in a structure that can be classified as being simultaneously inter-governmental, supranational and transnational. Furthermore, the fisheries sector and the state negotiate and agree upon resource management (van Hoof and van Tatenhove, 2009). Hence fisheries sector and government are linked in a network, both in a horizontal and vertical fashion.

In the complex world of multiple fishing *métiers*, ecosystem considerations at the regional level and the multi-level layering of fisheries governance, the MSC label brings fishers and market parties together via an outside certification audit using the existence and implementation of sustainable resource use policies. Individual fisheries (*métier* level) seek certification. This can lead to a situation in which e.g. North Sea plaice by itself is not certified but when caught by a specific fleet it is (see Box 1 below).

**Box 1: Osprey Trawlers North Sea twin-rigged plaice, certified 23rd September 2010**
North Sea plaice is an important species for the European flatfish fleet and the Osprey Group is the second to receive MSC certification for this species. Small plaice migrate from the south of the North Sea to the north. This means that in the central North Sea, where the Osprey Group's fishery takes place, predominantly adult plaice are found. This, in combination with the large mesh gear means that they can catch plaice with little undesired by-catch. The fishery operates under a strict quota management regime, closes during the spawning period for plaice and respects voluntary area closures throughout the year as part of their management plan. The Osprey Group worked with WWF Netherlands in achieving their certification (Marine Stewardship Council, 2011e).

In this process the MSC approach is designed to complement strategies of other agents. A fisheries certificate is valid for five years provided that annual audits establish that the fishery continues to meet the MSC standard and is making adequate progress on required Performance Indicators improvements (see below; Marine Stewardship Council, 2011a). The MSC programme builds on the existence of a functioning fisheries and stock management policy of local authorities[13]. The MSC programme criteria focus on the existence of a functioning fisheries management system and the state of the stocks fished upon within a given fishery (métier).

[13] Establishing in a universal way the locale of fisheries management, noting the wide variety in scale and scope of national and international fisheries management systems, is deemed unfitting. With local authorities here we refer to government actors at the level of implementation of the national fisheries management system. This can either be at the overall national level or at the sub-national level of provinces or regions.

### 3.4.2 Policies and norms

Across the globe fisheries are regulated by policies setting norms for access to fisheries, inputs and outputs. Input controls are those measures aimed at limiting fishing capacity by limiting or reducing the level of inputs used. Examples are effort limits, transferable effort quota and decommissioning and buy back schemes. Output controls aim at regulating the amount of fish landed. Access charges, such as management cost recovery and access and user charges, are an instrument directly affecting the economics of the fishing operation (van Hoof, 2010).

The MSC brought about a shift in the market demand for fish, putting sustainability as one of the key attributes of the produce as a requirement. A basic prerogative in this is that sustainable fish production is possible. This has been captured by MSC in its principles for sustainable fishing (see Box 2 below).

In this context the MSC provides the tangible attribute of labelling fisheries that operate within the three basic principles of the labelling program (Sustainable fish stocks, Minimising environmental impact, Effective management) (Marine Stewardship Council, 2010). Whereas the first two principles stimulate fishers who seek certification to operate within the defined sustainability criteria, the third criteria may directly stimulate authorities for the establishment of a proper management system but may also stimulate fishers to request governments to do so.

**Box 2: Principles for Sustainable Fishing.**

1. A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery
2. Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.
3. The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

Source: Marine Stewardship Council (2010).

### 3.4.3 Interests

At the onset, the perceived interests of the MSC and the fishing fraternity did not align. The MSC program is designed to create market incentives to reward sustainable fishing practices but in the beginning the fishing community identified the MSC label as a push towards sustainability, implying not only a required further reduction in fishing effort but also a ban on particular fishing gears such as bottom trawls. After the first fisheries got certification and it became clear that consumers and retailers were demanding for certified produce and willing to pay a premium price, the interest of the fishing community in possible certification

grew. One could notice a shift in the fishers' perspective from a struggle to accommodate sustainability in daily operations towards a perception that their market would disappear unless they could produce certified produce. The increasing aspiration of retailers to have an extensive and increasing part of fish produce in their assortment to be derived from eco-labelled fisheries would over time affect the licence to produce in the fishing sector: at the onset a premium market for eco-labelled fish, in the long run no more market for unlabelled produce.

Most fisheries say the MSC label has helped them retain existing markets and gain access to new ones, geographically or in terms of opportunities arising from new product category developments (Marine Stewardship Council, 2009). A major development in recent years was the increased interest of retailers, supermarkets and restaurants to commit to serving MSC labelled fish and fish products.

In Box 3 below some examples of ways in which specific fisheries have adapted practices to align with MSC criteria are described.

**Box 3: Examples of fisheries adapting practices**

- The economically important South Africa hake trawl fishery was required to investigate mortality rates among seabirds that were caught in trawl warps and, if studies proved it necessary, take steps to reduce them. As a result, bird kills have decreased dramatically from a previously unrecorded 18,000 to just 200 per year.
- As a condition of its certification, the Norway North Sea and north-east Arctic saithe fishery (page 56) was required to record by-catch more systematically than under existing regulations. This, it believes, may lead to changes in the way other fisheries are managed. It also co-operated with government scientists on mapping deep coral areas closed to trawlers, to see if they were damaged or depleted by static gear.
- To qualify, the South Georgia Patagonian toothfish fishery in the South Atlantic requires its entire catch to be weighed, box by box, under government control in the Falkland Islands. This measure ensures to buyers and consumers that the certified catch does not come from vessels fishing illegally in other toothfish fisheries.

Source: Marine Stewardship Council (2009).

### 3.4.4 Values

The introduction of the MSC label by WWF and Unilever translated a societal concern about the sustainability of fisheries, good environmental status of ecosystems and biodiversity into a market instrument. Many supermarkets, fuelled by consumer concerns, were eager to have their fish be MSC labelled. The MSC vision is that of the world's oceans teeming with life and sustainability of a fishery is assessed not only based on the amount of fish caught and the stock's ability to regenerate but also the impact of the fishery on the wider ecosystem such as the dependence of other animals on those same fish, the impact of the

unwanted catch of other species and the review of the fishing methods used and their impacts on habitat (Marine Stewardship Council, 2011a). This vision for a large extent is congruent with the perception of a large part of the fishing fraternity. MSC certification created an opportunity for quite a number of fisheries to step out of the normal discussions on seeking to reduce government regulations of fisheries, towards creating opportunities for sustainably produced produce to reach a market.

Underlying motivations can be found in the fact that both the societal concerns as expressed by NGOs and the vision of fishers align in the sense that both favour oceans with sustainably managed fish stocks. The label, arranging market access for the producers, creates the possibility to, instead of continuing a debate on fishing limitations and prolonged discussions on the exact level of stock's biomass and fishing effort allowed for a specific fisheries, think in positive terms of bringing a healthy and sustainable product to the market. Also, the label tilts the discourse on licencing of production from the realm of formal government permits, licences and set of fisheries management measures, towards a licence to produce articulated by the market. It awards the segment of fishers that is prepared to internalise this demand for labelled sustainable produce.

### 3.4.5 Framing

The MSC label operates within two distinct yet connected frames. The basic principles of certification are framed in the sustainability discourse; MSC seeks to promote fisheries that are in line with a vision of the world's oceans teeming with life, and seafood supplies safeguarded for this and future generations (Marine Stewardship Council, 2011a). Simultaneously MSC frames its label as a market instrument that seeks to influence the choices people make when buying seafood, and transform the seafood market to a sustainable basis (Marine Stewardship Council, 2011a).

For the fisheries sector the most relevant frame provided by the MSC certification process is that of the market instrument and access to market: "Many of the fisheries initially undertaking assessment against the MSC standard were well operated and had to make few changes to meet the standard. These pioneers provided the foundation for MSC to become established and the market's recognition of these fisheries has provided the necessary incentives for other fisheries to follow" (Marine Stewardship Council, 2011a). Nowadays for the primary producers the label is not so much framed as market recognition of sustainable production but rather as a necessity to obtain a licence to produce and be able to gain market access. In this respect, noting the fragmentation and great diversity of the fisheries sector[14], a dual frame emerges in which part of the fishing fraternity perceives the MSC label as an opportunity to cash in on sustainability attributes of their produce. The other part of the fisheries sector is much more framing the label as a market requirement and necessity to gain market access. From a consumer perspective, and the strive from a large part of the actors in the marketing chain for full certified produce traded, the frame on the label is that of providing an opportunity to consume fish in a responsible way.

[14] 'The' fishing sector in a particular area or country usually consists of a multitude of different sub-sectors characterised by different fishing operations (métiers), hence differt fish produce, different market channels and markets, different consumers and different sets of legislation.

In terms of the effectiveness of framing the MSC label (also see section 3.5 below) there are two distinct issues. The first is that framing the MSC label as granting market access and having some fisheries being certified successfully. This is a "yes we can" framing that certainly boosted the confidence of fishers around the globe that certification was a workable opportunity. The downside of this framing comes in two parts: 1) fisheries that are still not qualifyed for the label and may lose interest in further promoting sustainable practices as the road for change proves rather too long and/or too expensive and 2) criticism on the contents of the label and certification practices. This latter dwells on the label being framed as sustainable whereas it allegedly certified or recertified less sustainable operations (see section 3.5 below; Jacquet et al., 2010; Froese and Proelss, 2012; Christian et al., 2013), and the apparent intrinsic drive for certification companies to ease on the severity of the labelling process; hence how sustainable are the fisheries when carrying an MSC label? Hence the opportunities for the opponents of the MSC label to frame its success in a negative fashion: if so many fisheries world-wide can be certified there must be something wrong with the certification process.

### 3.4.6 Leadership

In the MSC case the key to the successful kick-off has been the cooperation between an environmental NGO (WWF) and a leading fish processor (Unilever) that dared to share a vision on how to achieve a shift towards more sustainable fish produce by using the market, and a number of fisheries that embarked on the certification programme. Also the independency of the label and the certification process facilitated acceptance of the sustainability of the fish produce.

For the fishing sector it required some examples of fisheries that were able to attain the certification. After picking up momentum more fisheries around the world saw opportunities to get fisheries certified, or that with a change to fishing practices could become allegeable for certification. Especially in fisheries that at face value would not be eligible for certification it required forerunners to embark on the process of changing fishing practices (not always applauded by their peers) and/or to embark on the process of getting a particular section of the fleet (*métier*) certified. A particular aspect is that of the ownership of the label and the certification process. This on the one hand calls for fisheries to be aware of the label and the certification process. On the other hand it requires the establishment of an agent who can implement the certification process.

From the onset MSC has clearly opted for the creation of an independent label where MSC formulates principles and criteria (see Annex II), it is the sector's (industry) responsibility to proof adherence to the criteria being assessed by an independent auditing firm. As such the MSC can be regarded as the development of a non-state, 'multi-stakeholder' organization setting standards for socially and environmentally responsible practices. A multi-stakeholder organization (such as the Marine Stewardship Council) builds on the idea of assembling actors from diverse societal spheres into one rule-setting process, thereby combining their resources, competences, and experiences (Boström and Hallström, 2013). These processes also allow competing interests to negotiate and deliberate about their different concerns in global political and ethical matters.

### 3.4.7 Knowledge

Biodiversity considerations in the fisheries management discourse are increasingly gaining importance. Yet traditional fisheries management had a prime focus on fish and concerned single stocks. Although information on a world scale on the state of individual stocks varies, for a large part of the commercially exploited stocks information is available. In addition, quite some information is available on the impact of fishing techniques on the marine ecosystem such as impact on habitats and by-catches of other fish species and for example cetaceans and sharks.

Increasingly, fisheries management frameworks are based on the ecosystem approach, taking the interrelation of ecosystem components and impacts of pressures on the ecosystem as focal point. However, in some cases concrete knowledge on reference status, ability to predict the effects of cumulative impacts and a clear distinction between cause and effect is quite often lacking. In addition exogenous developments, such as climate change, may render existing knowledge void.

As to establishing the direct impact of eco-labelling on marine biodiversity, there are examples in which the certification requirements resulted in fisheries adapting their practices (see Box 3 above for some examples). However, the impact of the eco-label on biodiversity will always be indirect. The label will encourage that fishing practices are taking place within a proper fisheries management system and that this system renders ample attention to sustainability and biodiversity considerations.

With the fishers in the driving seat of the certification process and the general openness of the certification through MSC the knowledge base on which decisions are taken and the decision making process are rather transparent and open. General issue in fisheries management is the inclusion of stakeholder knowledge in the decision making process. In the current process in Europe of developing Long Term Management Plans, we can observe increased attention for the role of stakeholders in this process.

### 3.4.8 Time

The process of introducing labelling for fish produce consists of two steps. The first step, taken in 1996, was the agreement between an environmental NGO and a fish processor to develop a sustainability label for fisheries. WWF and Unilever came together in the wake of the collapse of the Grand Banks cod fishery to create a market based programme to promote and encourage sustainable fishing (Marine Stewardship Council, 2009). The second step in time was to have fisheries be attracted to pursue certification.

The time-horizon of the actors involved can differ quite extensively. The vision of sustainable production and ocean bio-diversity, as expressed by environmental NGOs is a really long term perspective. This is being translated into more short term policies and management measures by regional and national authorities. The fishers have a dual time-perspective: a more long term outlook of continuity of the company and in interest in healthy fish stocks, on the other hand a more short term profitability concern over the day to day performance of the individual vessel. Especially the latter (noting that quite some fisheries operate at very low or no profit levels) can firstly interfere with the more long term considerations of

sustainability and secondly, can prevent individual fishers from investing in more sustainable operations as the resources needed for the investment are just not available.

The MSC assessment criteria are revised and strengthened over time on a regular basis. In this process a review will consolidate the MSC's existing policy development on issues pertaining to the fishery assessment and other fishery client 'performance' requirements. This process entails a public consultation (Marine Stewardship Council, 2010).

### 3.4.9 Financial resources

As for resources required, the MSC label can be considered an indirect promoter of maintaining biodiversity, funded by non-government and industry actors. The bulk of the resources required for the certification process are embedded in the certification process of an individual fishery: it is the fishermen in a fishery that have to pay the bill of the auditing process. These costs can be quite prohibitive and can hinder individual fisheries to embark on the certification process, certainly in those instances where the perceived premium price for labelled produce does not cover the increased costs entirely.

The MSC promotes equal access to its certification programme irrespective of the scale of the fishing operation. One should realise that in daily practice a fishery consists of a (large) number of individual fishermen or fishing companies. As the entirety of the fisheries will have to seek certification this will require resources of the individual fishers to be allocated to this process.

## 3.5 Effectiveness and legitimacy of existing mainstreaming efforts

The MSC's fishery certification program and seafood eco-label recognise and reward sustainable fishing. The scheme provides market access to fishers (fish produce) to a (premium) market, and as such is perceived as a rather effective and thus legitimate initiative. The market uptake has been impressive. In 2009, 10 years after the establishment of MSC there were over 2,000 products and close to 2.5 million tonnes of sustainable seafood carrying the MSC eco-label (Marine Stewardship Council, 2009).

As of 31 March 2012, 295 fisheries had entered full assessment since the program began. Of those:

– 147 fisheries are now certified
– 128 fisheries are currently in the assessment process
– 10 fisheries withdrew from the assessment process
– 7 fisheries failed MSC assessment
– 3 fisheries failed parts of their wider assessment (Marine Stewardship Council, 2012a)

In 2006, Wal-Mart pledged to sell only MSC-certified wild-capture fish in its North American market by 2010 (Jacquet et al., 2010); as of Jan. 31, 2012, 76% of Wal-Marts fresh, frozen, farmed and wild seafood suppliers were third-party certified and an additional 8% had developed the required certification plans (Wal-Mart, 2012). In 2012 more than 7,300 restaurant locations were certified globally; almost 5,300 workplace, educational and leisure

establishments were certified; nearly 500 fishmongers are serving MSC certified and labelled fish and over 13,000 foodservice outlets are certified globally. For example, On World Ocean's Day, in June 2011, McDonald's Europe announced that all its Filet-O-Fish across 40 European countries will be sourced exclusively from fisheries that have met the MSC standard (Marine Stewardship Council, 2012a).

Market uptake is of course not sufficient for the MSC programme to be effective in conserving biodiversity. This is determined by if, and how, the change in fishing practices influence biodiversity. In Box 4 below some examples of clearly positive impact on biodiversity are shown.

**Box 4: Some experiences with the MSC label**

- The economically important South Africa hake trawl fishery was required to investigate mortality rates among seabirds that were caught in trawl warps and, if studies proved it necessary, take steps to reduce them. As a result, bird kills have decreased dramatically from a previously unrecorded 18,000 to just 200 per year.
- As a condition of its certification, the Norway North Sea and north-east Arctic saithe fishery was required to record by-catch more systematically than under existing regulations. This, it believes, may lead to changes in the way other fisheries are managed. It also co-operated with government scientists on mapping deep coral areas closed to trawlers, to see if they were damaged or depleted by static gear.
- To qualify, the South Georgia Patagonian toothfish fishery in the South Atlantic requires its entire catch to be weighed, box by box, under government control in the Falkland Islands. This measure ensures to buyers and consumers that the certified catchcome from vessels fishing illegally in other toothfish fisheries.

Source: Marine Stewardship Council (2009).

The contribution of the MSC to biodiversity conservation requires on the one hand that the principles and criteria of the certification are contributing to conserving biodiversity (the fish stock and beyond) and that these criteria are adhered to. In its processes of review of criteria and in rebuttals of the certification process the MSC seeks to have a transparent process. MSC is accountable for the certification standards, fishers are accountable for providing information of the certification (and of course for implementing sustainable fishing practices), the independent auditors are accountable for applying the assessment criteria to the individual fisheries. In addition, the MSC label is not only given to primary producers but is also obtained by the other steps in the value chain of fish and fish produce. All information of certified parties is being made public.

However, there has been growing concerns among scientists about the validity of seafood eco-labelling in general and the MSC label specifically (Cressey, 2012). In addition, conservation groups have raised concerns about MSC's certification process, calling into question the organization's claim that its eco-labelling program is "the best environmental

choice in seafood". Its certification process is paid for by the fisheries, with rates dependent on the size and complexity of the fishery. MSC estimates that most certifications cost between $15,000 and $120,000. Since its founding, MSC has attached its certified label to more than 170 fisheries, with fishery clients spending between $2.3 and $18.7 million on certification (New York University, 2013).

In 2010 Jacquet and colleagues sparked off the debate by stating that seafood stewardship was in crisis. She and her co-authors concluded that MSC increasingly risks its credibility as allegedly 'the certification system creates a potential financial conflict of interest, because certifiers that leniently interpret existing criteria might expect to receive more work and profit from on-going annual audits' (Jacquet et al., 2010). In addition, by having as principle "for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery" (Jacquet et al., 2010) Jacquet and colleagues argue that mistakenly the largest MSC-certified fishery, the US trawl fishery for pollock in the eastern Bering Sea with an annual catch of 1 million tonnes, was recommended for recertification in 2010 despite the fact that the spawning biomass of those pollock fell by 64% between 2004 and 2009. Likewise similar declines in biomass in other MSC fisheries, including the Pacific hake, which was certified in 2009 despite a population decline of 89% since a peak in the late 1980s (Jacquet et al., 2010).

In 2012 Froese and Proelss analysed seafood stocks that were certified by the Marine Stewardship Council (MSC) or Friend of the Sea (FOS). They compared the actual stock size and fishing pressure with the internationally agreed reference points which both organizations have accepted. They came to the conclusion that no suitable status information was found for 11% (MSC) to 53% (FOS) of the certified stocks. For the stocks with available status information, 19% (FOS) to 31% (MSC) had overfished stock sizes and were subject to on-going overfishing (Froese and Proelss, 2012). In seeking explanation for this situation Froese and Proelss suggest the same explanation as Jacquet et al: the assessors are for-profit companies which are chosen and paid by the fisheries to be assessed. The assessors seem to have been biased towards bending the rules in favour of their clients (Froese and Proelss, 2012). They advise to give more weight in the certification criteria to the status of the stock and withhold or withdraw certification from overfishing fisheries ($F>F_{MSY}$). Furthermore, MSC would be well advised to drastically simplify their assessment procedure and prescribe much shorter, highly standardized assessment reports where status of the stocks and fishing pressure can be easily found and verified.

The statement made by Froese and Proelss was contested. Agnew et al. (2013) argue that the results of Froese and Proelss' are derived using a definition of 'overfished' that is not consistent with internationally accepted definitions and interpretations. In addition, the authors used unrealistic estimates of biomass that produce Maximum Sustainable Yields ($B_{MSY}$) obtained through methods that are inconsistent with the approach used by the management agencies and scientific advisory bodies responsible for the stocks in question (Agnew et al., 2013). Also Christian and colleagues argued in 2012 that despite widespread discussions about the rigor of the MSC standards, no comprehensive analysis of the performance of MSC-certified fish stocks has yet been conducted. They compared status and abundance trends of 45 certified stocks with those of 179 uncertified stocks, finding that 74% of certified fisheries were above biomass levels that would produce maximum

sustainable yield, compared with only 44% of uncertified fisheries. On average, the biomass of certified stocks increased by 46% over the past 10 years, whereas uncertified fisheries increased by just 9%. As part of the MSC process, fisheries initially go through a confidential pre-assessment process. When certified fisheries are compared with those that decline to pursue full certification after pre-assessment, certified stocks had much lower mean exploitation rates (67% of the rate producing maximum sustainable yield vs. 92% for those declining to pursue certification), allowing for more sustainable harvesting and in many cases biomass rebuilding. From a consumer's point of view this means that MSC-certified seafood is 3–5 times less likely to be subject to harmful fishing than uncertified seafood. Thus, MSC-certification accurately identifies healthy fish stocks and conveys reliable information on stock status to seafood consumers (Gutiérrez et al., 2012).

In 2013 Christian and co-authors evaluated the objections made to MSC certification of specific fisheries. In the 15 years of its existence MSC has attached its logo to more than 170 fisheries, conservation organizations and other groups have filed and paid for 19 formal objections to MSC fisheries certifications, out of which only one has been upheld such that the fishery was not certified (Christian et al., 2013). The authors point at the success of MSC as one of its potential pitfalls. All incentives point toward certification, which has led the MSC to write and interpret its principles of sustainability in an intentionally ambiguous way (e.g. ''respect for laws'') and has led third-party certifiers to generously interpret those principles, as well as generously assign high scores. As a result, and contrary to MSC claims, MSC-certified fisheries are not all sustainable, and certified fisheries are also not necessarily improving (Christian et al., 2013).

Most of the scientific debate reviewed here is focused on the degree to which the MSC label is a guarantee that the fish stock in question is at sustainable levels and harvested sustainably. It does not evaluate the impact on biodiversity more broadly. As mentioned above, the impact of the MSC on biodiversity is through indirect means and it is often not possible to predict the effects of cumulative impacts and a clear distinction between cause and effect.

As for the general legitimacy of the MSC label, today the label is widely acknowledged and widely used. Although the label has been criticised as to the integrity of its labelling criteria and certification practices, it still remains an instrument perceived to add value to the fish produce market. The label brings about a shift in the accountability of sustainable fish production: where before fishers were accountable to government and had to operate within the context of national fisheries management policies, under the MSC label fishers are accountable to the consumers that take a final decision whether or not to buy the product. In theory the label brings producers and consumers together in the market place over sustainability considerations, in practice one can see that by having major wholesale, processing and retail market parties commit to only selling labelled produce, the choice for labelled produce is not so much made by producers and consumers but forced upon them by the major players in the market chain.

As for the perceived legitimacy of the labelling scheme by the fishers, firstly of course there is a divide between those fisheries that are already operating under sustainable conditions and hence find it easy to fulfil MSC criteria, and those fisheries that have to go through a

major process of revising fishing operations to obtain the label. Especially this second group may have considerable resentments as to the legitimacy of the MSC label as they can claim that they have always been operating within the confines of the fisheries management system, yet fail to obtain the label. With increasing requirements for a label to be able to enter the market, as articulated by major players in the global fish market, this emphasis on a licence to produce coming from the market may be perceived as being unjust.

As for the production of the legitimacy of the label, MSC is an independent institution which formulated the certification criteria. Independent assessors audit a fisheries that applies for certification. The information on which the certification decision is being made is being produced in a joint fact-finding process in which basically it is the fishers bringing the information to the assessors.

## 3.6 Synthesis

Overall the introduction of the MSC label has had a major impact on the global fish market. By linking local fisheries management systems and the state of fish stocks via the market directly to the consumers created a new incentive for producers to seek a more sustainable way of operation. Whereas the bulk of fisheries' legislation has a focus on fisheries operation and biodiversity, the MSC label created the opportunity to translate sustainability considerations into a marketable attribute of fish produce.

The analysis above has identified a number of barriers and levers for strengthening the MSC's contribution to biodiversity conservation in the oceans which we here summarise in three categories, see also Table 2.

### 3.6.1 Structures and institutions

Important structural barriers for change are the multi-level institutional setting of the MSC process and the fact that fishers operate within the context of prevailing regulation which do not pay attention to issues of social sustainability. Barriers on the agency level concern motivation and strategies of actors within the fishery sector. Still a part of the sector disputes the necessity of extra efforts of sustainable production, because they are of the opinion that existing legislation is already enough to realise a sustainable sector. On the other hand MSC links producers, chain actors and consumers in a new way, opening up the black box of neo-corporatist exchange relations. Examples of institutional levers are that MSC provides a strong push towards the operationalization of sustainable fishing practices and a strong incentive to implement sustainability across different levels. By involving new actors (NGOs, supermarkets, restaurants, consumers) in the process of certification and by delivering sustainability objectives and output legitimacy has been strengthened and could be further strengthened if certification expands to new fisheries, and if trust in the label remains.

**Table 2**. Barriers and levers for mainstreaming biodiversity in governance of fisheries.

| *Cross-cutting elements / Dimension* | | Potential for change | |
|---|---|---|---|
| | | **Barriers** | **Levers** |
| Institutional | **Horizontal and vertical interactions** | - Sector and government are connected in policy making; certification is an outsider.<br>- Multi-level setting can induce mismatches across levels. | - Connecting market and industry provides strong incentive; strong push for policy implementation across levels. |
| | **Policies and norms** | - Fishers operate within the limits of prevailing national/regional regulations, which apparently do not reflect societal sustainability concerns. | - Norms for sustainable fishing exist. MSC provides a push in operationalizing. |
| Motivational | **Interests** | - Domination of short-term, self-centred interests. | - Discovery of new income opportunities. |
| | **Values** | - Part of the sector disputes necessity for more sustainable production; denial of state of affairs and claim that current set of rules already are based on sustainable production practices (why do more than regulation requires). | - Threat to lose license to produce. On the other hand label provides chance to parts of the sector to showcase sustainability. |
| | **Framing** | - MSC frames as yet another pressure on fisheries for more sustainable operations.<br>- Different segments of fleets frame the label differently (sustainable nuisance vs market opportunity).<br>- Rejected fisheries lose market access. | - Framing label as granting access to market. Consumers 'talk' to producers.<br>- Framing certification as being a possible route to sustainable fisheries. |
| | **Leadership** | - Depicting several métiers as being a single fisheries prohibits individuals to take up the challenge to obtain individual (métier) certification[15]. | - Forerunners taking up the challenge to get individual fisheries certified; "proof of concept" that certification of fisheries is possible. |
| Means | **Knowledge** | - Contestation of available knowledge.<br>- Exclusion of stakeholder knowledge.<br>- Lack of available data and or high uncertainty in available information. | - Knowledge available and shared between parties enables open and transparent labelling process and in addition clear benchmarks of fisheries against clear standards. |
| | **Time** | - Time horizons of different actors do not align: short term economic considerations vs very long term ecosystem considerations. | - Certification can align the time perspective as long term vision has short term market implications. |
| | **Financial resources** | - Funds needed for certification and re-certification market access for non-labelled produce. | - Pioneers with resources obtain market access and premium price. |

[15] For example the Dutch North Sea fisheries for Plaice and Sole consists of a variety of fishing techniques all involving a cutter type vessel and a type of beam trawl. Some of the fishing techniques such as fly shooting and pulse-fishing are considered more sustainable, especially relating to wider environmental impacts and therefore can obtain certification (see annex II for examples), whereas the traditional beam trawl, operating with tickler chains are considered not to be sustainable. Certification will only be possible if actors involved are able to show their fisheries to be dissimilar to the overall traditional fisheries. This in itself causes a legitimacy issue for the MSC label: how can some of the plaice and sole catches be labelled and others not.

### 3.6.2 Motivations

A barrier related to motivation concerns the tension between individual economic decisions and the long term ecosystem consideration. Levers on the agency level are that MSC provides the sector to showcase sustainability and to improve the image of the sector. Especially the pioneers play an important leadership role to convince the laggers that certification of fisheries is possible. An important incentive is market access and premium price. The licence to produce aspects and the new ways of regulating market access of the MSC label will results in new forms of mobilization within the sector.

### 3.6.3 Means

For the individual fisher MSC is costly. A complicating factor is the fragmentation and great diversity of the sector. What can easily be perceived from the outside as being 'the' fishing sector in a particular area or country, and indeed the actors to an extent share similar concerns and objectives, is in fact an amalgam of different sub-sectors characterised by different fishing operations (métiers), hence differing fish produce, different market channels and markets, different consumers and different sets of legislation. Next to being characterised by diversity this also leads to a great fragmentation within the fishing fraternity were objectives and interests may vary widely. Organising certification as a group of individual producers then can prove lengthy and costly. In addition, noting the different practices these will require different processes of certification, requiring specific rules and resources, and also time and the creation of new trust relations are needed to deal with the diversity of fisheries applying for certification. The limitation in detailed information on the links between certification and biodiversity trends in the marine environment is a barrier that requires considerable resources (for research) and time to be overcome while the openness of information and data in the certification process is a lever that can deliver accountability in the short and long run.

### 3.6.4 Mainstreaming biodiversity?

The MSC certainly provides an example in which the label brings market parties to increasingly consider sustainability concerns into the production process. The complexity and fragmentation within the fishing sector can be a hindering force in obtaining a more wide spread certification. Yet, despite some (even disputed) criticism on the labelling practices, the MSC label has over a relatively short period of time had an enormous impact on the fishing sector worldwide.

Experiences elsewhere show that in the longer term this premium price for labelled produce tends to return to average price levels (Sedjo and Swallow, 2002; Delmas and Grant, 2008). The label may well develop into an actual licence to produce as many retailers, at least in parts of Europe, tend to opt for a 100% certification of all seafood traded in certain markets. Surely, certification is not the only instrument for mainstreaming biodiversity marine governance. Yet, in the case that in principal a supportive policy environment exists (such as the existence of a fisheries management framework) the label can provide extra stimuli for the producers to develop more sustainable practices.

As for the width and breath of mainstreaming biodiversity in the fisheries sector through MSC labelling, firstly the prime principal of the label can be perceived as being a sustainable exploitation of a given fish stock. Although under principle 2 of the MSC criteria biodiversity

is positioned (should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem see Annex II) biodiversity considerations could be made more explicit within the criteria.

Secondly, MSC is rapidly expanding, covering more fisheries and a larger geographical area. Part of MSC strategy is not to seek full certification of all fisheries in the world but by having a significant portion of fisheries and fish produce chains certified to have a more wider impact.

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## Annex I: Examples of certified fisheries

The Alaska Pollock- Bering Sea and Aleutian Islands fisheries was among the first to receive an MSC certification. It was certified as sustainable on 14 February 2005 and recertified on 14th December 2010 (Marine Stewardship Council, 2013b). The Bering Sea/Aleutian Islands Pollock fishery is the largest U.S. fishery, accounting for about 30 per cent of all U.S. seafood landings by weight. The Pollock resource in U.S. waters off Alaska remains abundant and robust (At-sea Processors Association, 2004).

More recent are the certifications of the Dutch North Sea fisheries. As developed over time, today the following fisheries are certified:

- *Pelagic Freezer-Trawler Association North Sea herring*, certified May 2006, re-certified May 2011
    - Herring is a pelagic species which is distributed widely throughout the North Sea. It produces eggs which are attached to gravelly areas on the seabed, suggesting an evolutionary origin of spawning in rivers. Due to specific substrate requirements, spawning occurs in small, discrete areas. Herring are plankton feeders, and an important food source for various demurral fish. Herring fishing in the North Sea has been conducted for centuries by a variety of fleets. Following a stock collapse in the 1970s, the fishery is now controlled by quotas. The certified fishery comprises pelagic trawlers from the Netherlands, the UK, France and Germany. Trips last approximately three weeks, and all catch is frozen and boxed on-board (Marine Stewardship Council, 2011h).
- *Pelagic Freezer-Trawler Association North East Atlantic Mackerel*, certified 10th July 2009
    - While mackerel has been an important species for the North Sea fisheries, it was not until the 1960s until the North East Atlantic mackerel fishery developed. The skippers of the Pelagic-freezer Trawler Association (PFA) use single and pair pelagic mid-water trawls to catch mackerel. The catch is pumped from the cod-end of the trawl into refrigerated seawater tanks to chill. Subsequently the catch is graded and frozen into blocks and stored in the freezer compartments of the trawler. The PFA fleet comprises 25 freezer-trawlers owned by nine companies from five EU-countries. PFA has successfully introduced management measures to reduce undesired by-catches to low levels. An example is the ban on high grading for all PFA vessels, which has been an internal policy of the PFA since 2000. As part of their ongoing certification, PFA will take further management action with respect to the monitoring and reduction of undesired catches (Marine Stewardship Council, 2011g).
- *Dutch Fishery Organisation gill net sole*, certified November 2009
    - Dover sole is an important target species of the European flatfish industry. Around 60, mostly small vessels are involved in the Dover sole gill net fishery. The fishing method employed in this fishery is a bottom set gill net. The net consists of a single netting Wall. The DFO Dover sole gill net fishery operates under a voluntary management plan and recently the Dutch government incorporated elements of this management plan in a new regulatory framework for the gill net fishery, capping access to the fishery and fishing effort. Limiting the number of vessels and the number of nets in the coastal zone is an important precondition

the fishermen have enforced on themselves (Marine Stewardship Council, 2011b).

- *Pelagic Freezer-Trawler Association Atlanto-Scandian herring*, certified July 2010
    - The PFA Atlanto Scandian herring fisheries comprises 25 freezer-trawlers owned by nine companies from five EU-countries. The vessels catch Atlanto Scandian herring using pelagic midwater trawls. The annual fishery begins inshore along the west coast of Norway in spring where mature fish spawn. After spawning, adult fish move north–northwest to summer feeding grounds between Svalbard (Spitzbergen) and Iceland during which time they are fished by the international fleet (Marine Stewardship Council, 2011f).
- *Osprey Trawlers North Sea twin-rigged plaice*, certified 23rd September 2010
    - North Sea plaice is an important species for the European flatfish fleet and the Osprey Group is the second to receive MSC certification for this species. Small plaice migrate from the south of the North Sea to the north. This means that in the central North Sea, where the Osprey Group's fishery takes place, predominantly adult plaice are found. This, in combination with the large mesh gear means that they can catch plaice with little undesired by-catch. The fishery operates under a strict quota management regime, closes during the spawning period for plaice and respects voluntary area closures throughout the year as part of their management plan. Osprey Group worked with WWF Netherlands in achieving their certification (Marine Stewardship Council, 2011e).
- *Netherlands blue shell mussel fishery dredged and suspended seed collectors and bottom culture*, certified July 2011
    - One of the Netherlands most typical seafood products are “Zeeuwse mosselen”, mussels from the Dutch province of Zeeland. The Dutch blue shell mussel fishery and culture is located in the Dutch coastal region of the Waddenzee and Zeeland delta and comprises 65 fishing vessels and 220 ha of suspended seed mussel collecting systems. Mussels are caught with a mussel dredge. Vessels operate 2 or 4 dredges. The dredge consists of a metallic net that is supported by a steel bar frame. The net is usually 1.9 meter wide and a steel bar of 4 cm is dredged along the sea bottom. When the net is full it is emptied into the boat hold. The same gear is used for the seed fishery as for the fishery on the mussel plots. The total landings in 2010/2011 were 56.6 million kilograms (Marine Stewardship Council, 2011c).
- *Netherlands suspended (rope) culture mussel fishery*, certified July 2011
    - The Dutch suspended culture mussel fishery is located in the Dutch coastal region of the Zeeland delta and comprises four members. The fishery produces mussels collected as spat on mussel seed catching systems that grow-out on suspended ropes or nets. The mussel seed is harvested by stripping the collector lines bare. The seed mussels are “resocked” and fed into net tubes (mussel socks). The mussel socks are hung along a long line where they stay and grow until they reach harvest size. The seed mussels in the sock put out byssal threads attaching themselves to the sock and one another and the eventually grow through the mesh of the sock and appear to be a solid column of mussels once fully grown. The Dutch suspended culture mussel fishery is an enhanced fishery of the type CAG (Catch and Grow). Mussels from this fishery are mainly sold to restaurants in the Belgian and Dutch markets (Marine Stewardship Council, 2011d).

- *Association of professional rod-and-line fishermen Netherlands (VBHL) Sea bass fishery*, certified 15 December 2011
    - The Sea bass fishery is carried out in the Southern North Sea. Fishermen affiliated to the VBHL fish with traditional gear: rod, line and artificial bait. They fish anchoring at a ship wreck or another kind of object, sand bank or obstruction where Sea bass can be found. By using light fishing and active gear, life at sea is minimally disturbed. Additionally, the rod-and-line fishery is very selective resulting in minimal by-catch. Undersized fish can be put back alive. At the moment, there are 21 vessels affiliated to VBHL with a maximum length of 10 meters. Immediately after catching the fish, they are put on ice guaranteeing the high quality of the Sea bass. The fresh Sea bass is auctioned the same day in IJmuiden, in the Netherlands (Marine Stewardship Council, 2012b).
- *OHV Dutch Waddenzee and Oosterschelde Hand Raked cockle*, certified 30th October 2012
    - The hand-raked cockle fishery is located in the Dutch North Sea coastal region of the Wadden Sea and Oosterschelde. There are 31 licenses for the fishery on cockles in place. The cockles (*Cerastoderma edule*) are caught on the mud flats in the tidal regions with a cockle rake, a kind of rake to which a netted bag is attached. The members of the Dutch Organisation of Cockle Fishermen catch between 400 and 700 tonnes (shelled cockle meat) annually. The OHV member fishermen are allowed to harvest a maximum of 2,5 per cent of the harvestable stock annually. The cockles are mainly sold on the Spanish market with a subsidiary market in France (Marine Stewardship Council, 2012d).
- *DFA Dutch North Sea ensis*, certified 20th November 2012
    - The DFA razor clam fishery takes place in the south-western and northern coastal waters of The Netherlands. There are 8 licences for the fishery on razor clams (*Ensis directus*), 4 of which are in use. The vessels catch approximately 3,700 metric tonnes fresh weight. This is 46 per cent of the 2012 total allowable national catch (8,000 mt). Dutch razor clams are mainly sold to the Spanish and Italian markets. The MSC guidelines for introduced species were developed to allow fisheries on non-native species to seek evaluation against the MSC standard for sustainable fisheries. Consistent with best international practice, fisheries targeting introduced species can only be considered for MSC certification if the introduction is now irreversible, if the species is now self-sustaining and if the introduction occurred prior to 1993 (Marine Stewardship Council, 2012c).
- *Cooperative Fishery Organisation (CVO*) North Sea plaice and sole, certified December 20th 2012
    - The North Sea plaice fishery is a very important fishery for the Netherlands. Dover sole, which is typically a by-catch species in the twinrig and outrig fishery, was assessed as a target species because of its commercial value. The MSC certificate applies to the fisheries using twinrig and outrig gear and part of the flyshoot fishery. The fishery operates under a strict long term management plan. As part of the certification, a comprehensive sampling programme will be set up to further map the catch composition of the various techniques including the interactions of the fisheries with vulnerable or protected species (Marine Stewardship Council, 2013c).

## Annex II: MSC Fishery Standard; Principles and Criteria for Sustainable Fishing

Source: Marine Stewardship Council (2010).

**Principle 1:**
*A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.*

Intent:
The intent of this principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favour of short term interests. Thus, exploited populations would be maintained at high levels of abundance designed to retain their productivity, provide margins of safety for error and uncertainty, and restore and retain their capacities for yields over the long term.

Criteria:
1. The fishery shall be conducted at catch levels that continually maintain the high productivity of the target population(s) and associated ecological community relative to its potential productivity.
2. Where the exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame.
3. Fishing is conducted in a manner that does not alter the age or genetic structure or sex composition to a degree that impairs reproductive capacity.

**Principle 2:**
*Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.*

Intent:
The intent of this principle is to encourage the management of fisheries from an ecosystem perspective under a system designed to assess and restrain the impacts of the fishery on the ecosystem.

Criteria:
1. The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes.

2. The fishery is conducted in a manner that does not threaten biological diversity at the genetic, species or population levels and avoids or minimises mortality of, or injuries to endangered, threatened or protected species.

3. Where exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames,

consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields.

**Principle 3:**
*The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.*

Intent:
The intent of this principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery.

A. Management System Criteria:
1. The fishery shall not be conducted under a controversial unilateral exemption to an international agreement.

The management system shall:
2. demonstrate clear long-term objectives consistent with MSC Principles and Criteria and contain a consultative process that is transparent and involves all interested and affected parties so as to consider all relevant information, including local knowledge. The impact of fishery management decisions on all those who depend on the fishery for their livelihoods, including, but not confined to subsistence, artisanal, and fishing-dependent communities shall be addressed as part of this process;

3. be appropriate to the cultural context, scale and intensity of the fishery – reflecting specific objectives, incorporating operational criteria, containing procedures for implementation and a process for monitoring and evaluating performance and acting on findings;

4. observe the legal and customary rights and long term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability;

5. incorporates an appropriate mechanism for the resolution of disputes arising within the system;

6. provide economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing;

7. act in a timely and adaptive fashion on the basis of the best available information using a precautionary approach particularly when dealing with scientific uncertainty;

8. incorporate a research plan – appropriate to the scale and intensity of the fishery – that addresses the information needs of management and provides for the dissemination of research results to all interested parties in a timely fashion;

9. require that assessments of the biological status of the resource and impacts of the fishery have been and are periodically conducted;

10. specify measures and strategies that demonstrably control the degree of exploitation of the resource, including, but not limited to:

a) setting catch levels that will maintain the target population and ecological community's high productivity relative to its potential productivity, and account for the non-target species (or size, age, sex) captured and landed in association with, or as a consequence of, fishing for target species;
b) identifying appropriate fishing methods that minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
c) providing for the recovery and rebuilding of depleted fish populations to specified levels within specified time frames;
d) mechanisms in place to limit or close fisheries when designated catch limits are reached;
e) establishing no-take zones where appropriate

11. contains appropriate procedures for effective compliance, monitoring, control, surveillance and enforcement which ensure that established limits to exploitation are not exceeded and specifies corrective actions to be taken in the event that they are.

<u>B. Operational Criteria</u>
Fishing operation shall:
12. make use of fishing gear and practices designed to avoid the capture of non-target species (and non-target size, age, and/or sex of the target species); minimise mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive;

13. implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;

14. not use destructive fishing practices such as fishing with poisons or explosives;

15. minimise operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.;

16. be conducted in compliance with the fishery management system and all legal and administrative requirements; and

17. assist and co-operate with management authorities in the collection of catch, discard, and other information of importance to effective management of the resources and the fishery.

# Chapter 4. Mainstreaming biodiversity in the palm oil value chain

Otto Hospes

## 4.1 Introduction

Palm oil is 'one of the world's rapidly increasing crops' (Fitzherbert et al. 2008) due to the growing global demand for this oil as an input for food products, cosmetics, animal feed and bio-energy. In the period 1995-2010 palm oil production in the world 'more than tripled to 46.7 million tonnes' (MVO 2010). In the same period the total area of production of oil palm fruit in the world nearly doubled from 8.0 to 15.9 million hectares (FAOSTAT).[16]

Whereas trade and consumption of products of palm oil are global, about 85 percent of the production is concentrated in Southeast Asia (Indonesia and Malaysia). The palm oil sector is very important for the Indonesian economy; it contributes to a significant surplus in Indonesia's agro-food trade (OECD 2012). Indonesia is the world's leader in terms of the cumulative area of oil palm plantations and Crude Palm Oil (CPO) production. In 2011, oil palm plantations covered 7.8 million hectares in Indonesia, out of which 6.1 million hectares were productive plantations under harvest. Indonesia plans to double the current production of CPO by 2020 to 40 million tonnes annually and to expand its oil palm plantation by additional 4 million hectares (CIFOR 2013).

Production is not only geographically concentrated but also organized by a relatively small number of very large plantation groups: around 50 plantation groups account for 75% of global palm oil production (Schouten and Glasbergen 2012). The refining and trading segments of the global commodity chain are even more horizontally integrated: 15 business groups control 75% of the global market (Aidenvironment 2008). In Indonesia private companies accounted for 55% of palm oil production in 2010 against 35% for smallholders and 10% for state-owned companies; ten companies owned 67% of the plantations (OECD 2012).

Palm oil production has generated different economic, environmental and social effects. The palm oil sector has contributed to economic growth, income and employment across the globe and particularly in Malaysia and Indonesia (Sayer 2012; World Growth 2011) but also led to de-forestation and exploitation of peat soils in production countries, reportedly leading to loss of biodiversity and increase of greenhouse gas emissions (Danielsen et al. 2009; McCarthy and Zen 2010; Reijnders and Huijbregts 2007; Tan et al., 2009). In addition, expansion of palm oil production has led to confusion around land rights at the local level, conflicts between communities and companies, and tensions and cleavages within communities (McCarthy and Cramp 2009; McCarthy 2010; Rietberg 2011).

[16] http://faostat.fao.org/

## 4.2 Palm oil production and biodiversity

Three conclusions can be distinguished on the links between the palm oil sector and biodiversity. First, palm oil plantations erode biodiversity (Danielsen et al. 2009; Sayer et al. 2012; Turner 2008; Wilcove and Koh 2010). Since palm oil production is located in some of the world's most biodiverse regions it has often been accused of being a major threat to biodiversity (Turner et al 2008). Oil palm plantations affect biodiversity in adjacent habitats through fragmentation, edge effects and pollution, and they support very few species compared to native forest (Fitzherbert et al. 2008). Sayer et al. (2012) therefore conclude that large scale biodiversity loss follows the conversion of natural forest to oil palm.

Second, the dominant mode of large-scale and mono-culture production of palm oil can be adapted to meet at least some of the environmental concerns. Anderson (2008) lists 10 different assessments and practices that could help and enable palm oil plantations to develop an eco-friendly approach. There are a number of measures that be taken in industrial palm oil estates that can create more space for biodiversity such as retaining forests in riverine areas and on steep slopes and setting aside areas of High Conservation Value Forest (Sayer et al. 2012).

A third and more general conclusion is that expansion of palm oil production is not the only driver of land use change and loss of biodiversity. Wicke et al. (2008) state that in Indonesia the expansion of palm oil alone cannot explain the large loss of forest cover. They conclude that a web of interrelated direct causes and underlying drivers is responsible. Critical direct causes were found to be not only expansion of palm oil but also logging, other agricultural production and forest fires. Fitzherbert et al. (2008) conclude that in Indonesia the conversion to oil palm could only explain about 16% of recent deforestation and one reason for this is that oil palm plantations often replace forests that had already been degraded by fire and logging.

## 4.3 Past and current mainstreaming efforts

This case is about efforts to address biodiversity through certification of palm oil at different levels: at the global level through the Roundtable on Sustainable Palm Oil (RSPO) and at the national level by the government of Indonesia. Both the RSPO and government of Indonesia have developed different instruments and institutional arrangements with different actors at different levels of governance for the purpose of certification.

The RSPO is a European initiative of civil society and business actors, headed by World Wildlife Fund (WWF) and Unilever, that has established global principles and criteria for sustainable palm oil. The ultimate aim is to make sustainable palm oil not a niche product but mainstream in both local production and global markets through voluntary certification. In 2004 the RSPO was formally established as a foundation under Swiss law, excluding governments from membership. In 2007 global principles and criteria for sustainable palm oil were adopted at the General Assembly of the RSPO, to be implemented at the national and local level in production countries.

For at least WWF, certification was considered a key strategy for bringing in biodiversity into the core business of agricultural commodity chains, thus a clear effort of mainstreaming. WWF had realized that protection of endangered species and biodiversity at large requires protection of the habitats or eco-systems in which these endangered species live (Marsden 2002; WWF 2013).

Protection of biodiversity is mainstreamed in RSPO principles that form the normative backbone of its policy to promote sustainable palm oil in all regions. One of the eight RSPO principles, as adopted in 2007 and confirmed in 2013, is the principle of environmental responsibility and conservation of natural resources and biodiversity. Another RSPO principle that more indirectly shows that conservation of biodiversity is mainstreamed in RSPO policy is the principle of compliance to international laws and regulations. The Convention on Biological Diversity is one of the international laws that are listed by the RSPO (2007; 2013a). And the RSPO specifically refers to Article 10(c) that addresses the protection and encouragement of customary use of biological resources in accordance with traditional practices. In 2009, that is: two years after the adoption of the RSPO principles and criteria, a Biodiversity Technical Committee (BTC) was inaugurated. In 2011 the BTC was transformed into the Biodiversity and High Conservation Value (BHCV) working group, indicating that the RSPO considered high conservation values as very much connected to, if not a framework, for biodiversity.[17] Two of the 12 seats in the BHCV working group are reserved for environmental organizations. The Government of Indonesia is not represented in this working group.

According to Paoli et al. (2010), corporate social responsibility (CSR) is "becoming mainstream strategic business planning for the oil palm oil industry" (p.438) but there are considerable steps between planning and implementation (see section 4.5).

The Government of Indonesia has committed itself to sustainable development, greening the economy and reduction of greenhouse gas emissions. In 2011, the Indonesian Ministry of Agriculture launched the national standard for Indonesian Sustainable Palm Oil (ISPO) as a mandatory rule for plantation companies to comply with principles and criteria, including 'responsibility to implement regulations on the environment and conservation of natural resources' (IPOC 2011). This standard includes two specific principles on biodiversity: 'oil palm planters/millers should take care and conserve biodiversity on the plantation and area which is not planted' and 'oil palm planters and millers should identify protected area which has the primary function to protect biodiversity, which include natural resource, manmade resources and historical value and nation culture that not to be planted by oil palm' (IPOC 2011, p. 31).

Though the ISPO standard is mandatory for all oil palm plantations in Indonesia, its adoption and coverage have not been swift and wide during the first two years after the launch. In August 2013 the executive director of the IPOC reported that a total of 20 plantation firms had been ISPO certified (Jakarta Post 2013). In the interview with the Jakarta Post, she explained that 'only 120 companies had applied for the certification, despite the fact that

[17] http://www.rspo.org/en/minutes_of_bhcv_meetings

around 1,200 palm oil companies were subject to the mandatory certification'. The government's objective is to have all palm oil and to have all the companies certified by 2020.

## 4.4 Governance analysis

In the following sections the governance dimensions that form part of the framework for mainstreaming biodiversity (Karlsson-Vinkhuyzen et al., 2014) are analysed for the palm oil value chain.

### 4.4.1 Horizontal and vertical interactions

The global actor in our case is the RSPO which formally speaking is a foundation under Swiss law. It consists of more than 1,300 members coming from nearly 70 countries. The RSPO is international but not intergovernmental. The RSPO distinguishes seven constituencies: palm oil processors and traders, consumer goods manufacturers, retailers, banks and investors, oil palm growers, environmental and nature conservation organizations, and social and development organizations (Hospes 2011). These players have met in multi-stakeholder consultations at the global level to discuss how to change modes of production at the local level. Representatives of intergovernmental or supranational agencies, national governments and research institutes were not invited to participate in the process of drafting the global RSPO principles and criteria. The governments of the Netherlands and UK applauded the RSPO but left the initiative to develop a global sustainability standard with the private and civil society actors, also fearing incompatibility with WTO rules (Hospes et al. 2009, p.247). The RSPO tried but failed to get consumers at the roundtable, possibly because palm oil is not a very visible product for consumers, unlike fish or wood.

The RSPO organized national implementation and interpretations teams in every production country that were asked to discuss how to interpret the global RSPO principles and criteria in the national context and in these teams government officials were invited (Hospes 2011). In the case of Indonesia, nearly one third of the national team of 65 members consisted of high officials from different ministries. However, no steps have been taken by the RSPO to organize or facilitate multi-stakeholder consultation processes in different production areas at the regional or local level within countries. In Indonesia the Indonesian Palm Oil Commission (IPOC) is the key actor in the certification efforts. The IPOC falls under the Ministry of Agriculture and was given the task to organize inter-departmental consultation on principles and criteria for sustainable palm oil with other relevant ministries and this resulted in the ISPO. The IPOC mobilized support from the Indonesian Association of Palm Oil Growers (GAPKI) for the implementation of the ISPO.

Although the RSPO and IPOC standards are institutionally very different, there are several linkages between the key actors behind them. The RSPO and the Government of Indonesia can be seen as part of a complex, multi-actor and multi-level governance system of sustainable palm oil. The IPOC has been leading one of the thematic groups of the RSPO national implementation and interpretation team for Indonesia. The IPOC has also actively participated in international conferences of the RSPO and international meetings organized by the World Bank and International Finance Corporation on sustainable palm oil and taken active part in debates in these arenas.

### 4.4.2 Policies and norms

The RSPO and ISPO standard for sustainable palm oil look similar in terms of general principles (see Table 1). Both standards consist of principles addressing environmental, social, economic or legal dimensions of sustainability. Unlike the RSPO, however, the ISPO does not include principles on transparency, long-term economic and financial viability, and responsible development of plantings.

**Table 1.** Similar and distinctive principles of the RSPO and ISPO.

| RSPO principles | ISPO principles |
|---|---|
| Commitment to transparency | |
| Compliance with applicable laws and regulations | Permit system (as part of principle of 'Permit system and oil palm plantation management') |
| Commitment to long-term economic and financial viability | |
| Use of appropriate best practices by growers and millers | The implementation of guidance for cultivation and processing of oil palm |
| Environmental responsibility and conservation of natural resources and biodiversity | Environment management and monitoring |
| Responsible consideration of employees and of individuals and communities affected by growers and mills | Responsibility on labour<br>Social responsibility and empowering the community economic activities |
| Responsible development of new plantings | |
| Commitment to continuous improvement in key areas of activity | To increase a sustainable economy |

Sources: IPOC (2011); RSPO (2007).

The 8 principles of the RSPO and the 7 principles of the ISPO have each been specified into 39 criteria. At critical points the criteria of the RSPO and ISPO strongly differ (Hospes 2014): for example, distinctive features of the RSPO standard are the criteria on 'free, prior and informed consent', 'high conservation value areas', and strong restrictions on cultivation of palm oil in peat lands. The ISPO does not include the criterion of 'free, prior and information consent' but emphasizes that palm oil growers have to get the permission (licenses) from provincial and local authorities before they can clear forests to expand palm oil production. Unlike the RSPO, the ISPO considers palm oil production in peat lands as possible, provided attention is given to peat land characteristics.

When it comes to the institutional character and context of the criteria for the standards they are much more different. The RSPO builds on a global voluntary certification scheme paid out of membership fees and premium payments of certified growers. Certification is provided by third parties that have been accredited by the RSPO. Growers pay the costs of certification directly to the certifying company. The ISPO on the other hand is a national standard mandatory by law in Indonesia whose government is also hoping it will become accepted within the WTO and other international standard bodies. Nonetheless, the biggest challenge of both standards is to attract membership and ensure compliance.

### 4.4.3 Interests

Biodiversity was tabled from the very beginning of the multi-stakeholder consultations on RSPO principles and criteria for sustainable palm oil. The WWF was one of the initiators of the RSPO and two of the Executive Board's 16 seats are reserved for environmental NGOs. These organisations tend to have biodiversity conservation as one major interest.

Palm oil growers from Indonesia did not so much raise concerns about the principle of conservation of biodiversity in the proposed RSPO standard but the principle of responsible expansion of palm oil production. They had difficulties with accepting the absolute cut-off point (November 2005) for the adoption of the principles and criteria and were not amused when a new and stricter RSPO norm on responsible plantings was adopted, requiring palm oil growers to get free prior and informed consent from local communities *before* they started new plantings instead of afterwards. This could slow down expansion of palm oil production and herewith result in loss of income and profit for business which are clearly their major interests.

Although the ISPO includes specific principles on the conservation of biodiversity, and Indonesia became a Party to the Convention on Biological Diversity in 1994, it has not been a major issue or driver for the Indonesian government to launch this national standard. The Indonesian government had its own reasons for the launch of a national standard for sustainable palm oil. First of all, this standard was considered of strategic importance to demonstrate its commitment to reduce greenhouse gas emissions, as agreed upon in bilateral co-operation with Norway and multilateral negotiations at the Copenhagen summit (IPOC 2012). This political commitment was instrumental in negotiations with several bilateral donors and UN agencies to fund REDD projects in Indonesia to slow down deforestation and herewith to reduce greenhouse gas emissions.[18] Second, the government considered this mandatory rule as helpful to overcome the limitations of the RSPO as a voluntary agreement and to speed up the process of making all palm oil production in Indonesia sustainable (IPOC 2012).

Two of the four officially stated objectives of the ISPO are about reducing GHG emissions caused by the opening and operation of oil palm plantations. The other two objectives are to raise awareness of the importance of palm oil production and to enhance the competitiveness of the Indonesian palm oil in the world market (IPOC 2011).

At international RSPO meetings, a limited number of social NGOs try to represent the interests of local communities, smallholders and indigenous peoples whose life is being affected in different ways by the production and expansion of palm oil. Still, it is very difficult

[18] REDD stands for Reducing Emissions from Deforestation and Forest Degradation and is a mechanism linked to the United Nations Convention on Climate Change although it has first been elaborated and initiated also outside the formal Convention context. Some examples of REDD programmes in Indonesia are the UN-REDD national programme 2009-2012, with a budget of USD 5.6 million*, and Indonesia's REDD+ pact with Norway, paying Indonesia up to USD 1 billion for forest-conservation activities aimed at slowing rampant deforestation and resulting greenhouse gas emissions (Edwards et al. 2010). *http://www.un-redd.org/CountryActions/Indonesia/tabid/987/language/en-US/Default.aspx

to get a clear idea of the interests of local communities in Indonesia. Rietberg's (2011) study of palm oil expansion on Kalimantan shows that a local community may not be informed or interested at all in RSPO principles and criteria, but find the offer of plantation companies of work, income and roads very attractive. Another case study (De Vos 2013) shows that local communities simply refuse to give up their land for palm oil plantation and are involved in land conflicts with plantation companies.

### 4.4.4 Values

The vision and ultimate aim of the RSPO is global market transformation, meaning that consumers all over the world buy products that only include palm oil products that have been sustainably produced. From the RSPO principles and criteria and the way in which these principles and criteria have been developed, different kinds of values could be identified that somehow may have helped or driven those involved in the making of these principles and the creation of the legitimacy of the RSPO as a new rule-setting authority. A first type of value refers to norms for decision-making. Schouten and Glasbergen (2011) describe how actors involved in the roundtable process created legitimacy by developing procedural arrangements to reflect four universal norms: representation, participation, neutrality and procedural regularity. A second and related type of value is about deliberative democracy or the idea of the roundtable as a process in which one has to deliberate, give and take, and be open for unexpected outcomes (Schouten and Glasbergen 2012). A third type of value refers to the concept of sustainability, consisting of different economic, social, environmental and legal dimensions. There is no hierarchy given to these dimensions. The economic, social, environmental and legal dimensions of sustainability give enough room for different actors to articulate their specific interests but also provide a common ground or framework for collaboration with other actors from different spheres (Schouten and Glasbergen 2011).

From the ISPO principles and criteria and the way in which these principles have been developed, a rather different set of values could be identified that have helped or driven Indonesian state actors to launch and justify the ISPO. One of the RSPO principles that is missing in the ISPO is about transparency. Instead, legality is very much defined in terms of conformity to existing laws and regulations. The ISPO reflects the idea of the state as the sovereign and territory-based power. A second and related type of value is about 'deliberative bureaucracy', or the idea that high civil servants through collaboration with each other can and have to define policies, standards and instruments. A third type of value is to accept and promote that some dimensions of sustainability are more important than others. The ISPO lacks the RSPO principle on responsible development of new plantings and the notion of High Conservation Value areas, giving more legal room for plantations to replace forests and to reduce biodiversity whilst expanding their production (Hospes 2014). The Ministry of Agriculture and IPOC much emphasize the economic importance of the palm oil sector. In 2013 the Indonesian Association of Palm Oil Growers organized a conference entitled: "Palm oil as an engine to sustain economic growth and expand trade". The vision of the government of Indonesia and the Indonesian Association of Palm Oil Growers is not about global market transformation but sustainable economic development of the palm oil sector of Indonesia.

### 4.4.5 Framing

Many different frames and counter-frames can be distinguished that are constructed by actors to give meaning to issues, decisions or events related to the production of palm oil production. To start with, a major distinction can be made between frames in which palm oil production is considered as an opportunity and engine of growth and development versus frames that consider palm oil production as a threat and cause of ecological deterioration and social unrest. To speak of 'sustainable' palm oil itself is to suggest that palm oil can be sustainably produced and/or to that palm oil, or at least some palm oil, is sustainably produced. The term of sustainable palm oil refers to an existing or desired and feasible situation. However, the term itself does not explain what is meant with sustainability. As such, the word of 'sustainable' palm oil serves as a rallying point to organize multi-stakeholder debates on palm oil, or as a ticket to access various negotiations and networks on palm oil, with actors that may have quite different views on the importance of different dimensions or criteria for sustainability. The scope and possibility for tabling and mainstreaming a dimension or issue (like biodiversity) in a consultation process depends on the room and acceptance for tabling and mainstreaming other dimensions or issues at the same time.

Different frames on the scale at which the problem is experienced and its linkage with the scale at which it could be politically addressed or resolved have been constructed in the palm oil sector or in debates on sustainable palm oil (Hospes 2014). A frame that has provided a rationale for initiating and organizing the RSPO is that the only way to address the negative effects of palm oil production at the local level is by organizing multi-stakeholder consultation at the global level, involving nearly all value chain actors: producers, buyers, processors, traders, manufacturers and retailers of palm oil products. To justify the launch of the ISPO as a national standard, alternatively, the Indonesian government framed sustainable palm oil as an Indonesian problem that has to be addressed and governed by the state (Hospes 2014).

### 4.4.6 Leadership

The roles of (representatives from) WWF and Unilever at the early stages of the RSPO have been critical for the development of this roundtable. WWF provided financial means for the early design of a new business partnership model and a first informal meeting with European food business.[19] Its commitment to develop this model and its views on sustainability as an overarching concept to link protection of endangered species to protection of biodiversity and eco-systems to agricultural production were very unorthodox and provided the basis for a new approach both to governance and sustainability. Unilever has been a frontrunner on sustainability in commodity chains ever since this multinational got engaged with environmental NGOs, other business and producers to develop sustainable production of global commodities.

At an early stage of development, the initiators of the RSPO had already a kind of growth model in mind, including the formal establishment of the initiative as an association, the development of principles and criteria through multi-stakeholder consultation, and democratic decision-making at the General Assembly. In general, RSPO leadership can be

[19] Interviews 1 and 2 (see Appendix I).

said to be visionary. Every phase, however, required new leadership capabilities. One thing is to develop a vision; another is to mobilize people with different interests from different parts of the globe to agree on global principles and criteria. Again another one is to find ways how to overcome barriers that constrain adoption of the principles by palm oil growers or limit global market transformation. In general, RSPO leadership has demonstrated great skills in organizing multi-stakeholder events and participatory decision-making. However, leadership is still struggling with the implementation of the global voluntary standard at the national and local level.

The launch of the ISPO as a national standard shows both assertive and reactive qualities of the Indonesian government (Hospes 2014). It is assertive because the government wants to make sustainable palm oil from Indonesia competitive in the world (IPOC 2012). It is reactive because it is the result of its political commitments at bilateral and multilateral meetings to reduce greenhouse gas emissions and the weakness of the RSPO as a voluntary organisation that cannot reach all palm oil growers in Indonesia (IPOC 2012).

### 4.4.7 Knowledge

Scientific research institutes did not play a distinctive, institutional role in the development of the RSPO standard. The initiators of the RSPO did not start with developing a science-based and shared understanding of the impact of palm oil production but invited stakeholders from different spheres to jointly define the desired properties of sustainable palm oil. This way the consultative process did not have to await the finalization of possibly time-consuming research projects emphasizing the complexity of promoting sustainable palm oil. On the other hand the RSPO was acutely aware of the complexity of biodiversity issues in relation to the plantation landscape but this realisation did not make them turn to the scientific community for advice.[20]

Private consultants have played a key role at the very beginning of the RSPO to reflect on the governance structure of the RSPO and also to facilitate the revision process of the RSPO standard culminating in the adoption of a slight adapted version in 2013. Various scholars have been invited to give presentations at the annual conference of the RSPO preceding the General Assembly.

The development of the ISPO has been led by the IPOC of the Indonesian Ministry of Agriculture, seeking consultation with and consent from various other ministries. Scientific research institutes have not played a distinctive, institutional role in the development of the ISPO standard either.

### 4.4.9 Time

The drafting and finalization of the RSPO standard took about two years (Schouten and Glasbergen 2011). The first conference of the RSPO in 2003 marked the beginning of the consultation process on the standard and was facilitated by the working group on Principles and Criteria. At the third RSPO conference in 2005 the principles and criteria were launched to be field tested for two years. At the adoption of the final version of the standard at the

[20] See http://www.rspo.org/en/biodiversity_and_high_conservation_values_working_group. Downloaded per December 2013).

General Assembly of 2007, it was agreed that the principles and criteria would be reviewed within 5 years. In 2013 a slightly revised version of the standard was adopted at the General Assembly of the RSPO, it did not change the principles of 2007 but added new and specific criteria on GHG emissions, corruption, human rights and forced labour.

The time it takes for growers to become certified after application varies. For example, it depends on: "the extent of the task involved, capacity of the certifying body, location and spread of the relevant areas, whether own crop or purchased from smallholders/out growers/other estates, public comments, if any, and, of course, rectification of non-conformities" (RSPO 2013a). As per August 2013, all over the world 44 growers and 206 palm oil mills have been RSPO certified (RSPO 2013b).

In his key-note speech at the annual conference of the RSPO in 2010, the Indonesian Minister of Agriculture announced that the government is preparing the launch of the national standard for Indonesian Sustainable Palm Oil (ISPO). In March 2011 the ISPO was officially launched per ministerial decree. As per August 2013 20 plantation firms have been ISPO certified.

### 4.4.8 Financial resources

The two main sources of income for the RSPO are income from supply chain contributions and subscription fees (RSPO 2012). The income from supply chain contributions, which is derived from sustainable palm oil trade at USD 1 per tonne, was RM 9.9 million in the year 2011-2012. The income from subscription fees was RM 5.2 million in the financial year 2011-2012. The ordinary membership fee is € 2,000.[21] The RSPO has been enjoying financial support from several bilateral and multilateral donor agencies to implement projects. For example, the International Finance Corporation (IFC) provided a grant of about $ 200,000 to the RSPO to conduct a one-year project (2012-2013) on the 'Development and Implementation of Credible RSPO Standards for Sustainable Palm Oil'. The grant was provided through the Biodiversity and Agricultural Commodities Program (BACP) of the IFC. The ISPO on the other hand is a standard of the government, so the costs are paid out of the state budget.

## 4.5 Effectiveness and legitimacy in multilevel palm oil certification governance

Considerable time and efforts have been devoted to developing principles and criteria on biodiversity in the RSPO and its technical working group on biodiversity considers the identification of High Conservation Value areas as a methodological and strategic way to protect biodiversity. And while the HCV criteria and a couple of other potentially biodiversity relevant criteria are absent from the ISPO, these standards are also aimed at reducing deforestation and thereby also protecting biodiversity. With these good intentions there are still three major questions that remain in order to evaluate how effective these certification standards are to protect biodiversity. First, how good are the criteria developed in the certification for protecting biodiversity? Second, how well are these criteria complied with

[21] As per October 25th of 2013, one RM (Malaysian Ringgit) equalled 0.23 Euro.

by the certified growers? Third, how much of the acreage of palm oil plantations globally and in Indonesia will be covered by the global and the Indonesian certification schemes respectively? None of these questions can be adequately answered at the moment and it is unclear if there are efforts by the RSPO or researchers to answer them over time.

It is clear that the major challenges of mainstreaming biodiversity in the RSPO certification process for palm oil sector lie in the adoption and implementation of the global principles and criteria by oil palm growers (see discussion on barriers below). First, while the number of palm oil plantations in Indonesia exceeds 2,000 whereas the number of Indonesian palm oil growers that are member of the RSPO, is less than 70 (Suharto 2010). However, as most of these plantations that are RSPO certified are very huge the picture can be different in terms of geographical coverage. Second, it is difficult, time-consuming or sensitive to assess whether and when all criteria have been met at all production sites and mills of a plantation group that has applied for certification. Finally, it is challenging to monitor compliance by certified palm oil growers to the RSPO principles and criteria. Data and maps showing locations and acreages of plantations that are RSPO certified are contested. Environmental NGOs (like Greenpeace) report that some certified palm oil growers do not comply with RSPO criteria. Social NGOs (like Sawit Watch) raise concerns about hundreds of land conflicts caused by palm oil expansion in Indonesia.

In theory, the ISPO that does include principles on biodiversity could, as a mandatory rule by the government of Indonesia, overcome the limitations of the RSPO as a voluntary scheme and become more effective in addressing biodiversity degradation. However, although the ISPO is mandatory, only a fraction of all palm oil companies in Indonesia have applied for certification. Like the RSPO, the government of Indonesia has difficulties in reaching palm oil plantations and changing their ways of production limiting its effectiveness at least until now as a strategy for mainstreaming biodiversity.

With regard to legitimacy the RSPO has devoted considerable time and effort to develop the global principles and criteria for sustainable palm oil on the basis of multi-stakeholder consultations. At working group meetings, board meetings, international conferences and general assemblies, various drafts of principles and criteria were intensively discussed by hundreds of business and civil society actors from all over the world in the period 2004-2007 (Hospes 2011; Paoli 2010). This relatively inclusive process has clearly increased its legitimacy for the various stakeholders who were involved. The exclusion of governments as members, however, naturally reduced the process' legitimacy considerably for at least the Indonesian government. However, the exclusion of the Government of Indonesia from membership of the RSPO as a global governing agency has not disabled this government from voicing its views and using its public power and privileges at the global level. Representing the government of Indonesia and more in particular the Ministry of Agriculture, the IPOC has been closely involved in debates and working groups at the national and international level organized by RSPO, World Bank or other UN agencies.

The ISPO on the other hand was not the result of multi-stakeholder consultations with plantation companies, local communities and environmental NGOs but rather developed by decree from the government. This may significantly reduce its legitimacy in the eyes of those actors. At the same time as it is a mandatory scheme it should be less dependent on it being

considered legitimate by these actors, if the government has enough resources to enforce it. The latter, however, seems not to be the case.

The legitimacy of the RSPO and its standards for the members of the global value chain was not created on the basis of scientific knowledge and interactions with scientists but on the basis of exchange of experience-based knowledge and the joint commitment of stakeholders to make palm oil production sustainable. Generally speaking, the lack of (proof of) effectiveness of the RSPO at the level of production will challenge its legitimacy over time (see discussion below).

## 4.6 Synthesis

The analysis above has identified a number of barriers and levers for strengthening the contribution to biodiversity conservation in the palm oil sector. These are summarised below and in Table 2.

### 4.6.1 Levers and barriers of change

A major challenge of the RSPO is to improve corporate governance of plantation companies "to translate boardroom CSR decisions into conservation actions on the ground" (Paoli 2010, p.438). Cleary, the Indonesian government has a parallel challenge. This observation, however, does not tell us whether the barriers to do this are to be found in lacking motivation, insufficient means, or some design problem with the certification institution itself. The analysis we have carried out above does identify barriers and levers for mainstreaming within each of the three categories of governance dimensions of the framework.

First, on the institutional side this analysis supports the expectation of Sayer et al. (2012) who state that, 'much of the future expansion of oil palm will take place in regions where regional and local governance is relatively weak, spatial planning ineffective, and land tenure uncertain' (p.5). These institutional failures may indeed be the main obstacle to protecting environmental values such as biodiversity and achieving more equitable social outcomes as palm oil production expands. However, there may be considerable potential to improve the design of the certification schemes themselves, including their content and enforcement of the criteria. A condition for capturing such potential is, however, that on the one hand there is considerable investment in evaluating the operation and effectiveness of the certification standards and on the other an openness from the RSPO and ISPO/Indonesian government on the other to adjust the standards and processes by which they are applied. It is clear that the very presence of certification schemes in the palm oil sector is a considerable lever for biodiversity mainstreaming. Institutions such as these are costly to build.

Biodiversity was tabled on the agenda of the RSPO from the early stages of multi-stakeholder consultations on sustainable palm oil. Biodiversity did not have to get

**Table 2**. Barriers and levers for addressing biodiversity in palm oil value chains.

| *Cross-cutting elements / Dimension* | | Potential for change | |
|---|---|---|---|
| | | **Barriers** | **Levers** |
| Institutional | **Horizontal and vertical interactions** | - Exclusion of national government from membership of global private governance. | - Creating private-public synergy at national level. Organizing policy deliberation between RSPO and ministries of agriculture and environment. |
| | **Policies and norms** | - Reluctance of government to copy stringent environmental criteria of RSPO into national standard. | - Developing cross-referencing in global and national standards for sustainable palm oil. Defining minimum and maximum criteria for global and national standards. |
| Motivational | **Interests** | - Economic interest of government to promote expansion of palm oil cultivation. | - International and national commitments of government to reduce GHG emissions. |
| | **Values** | - Different norms for decision-making.<br>- Different priorities given to different dimensions of sustainability. | - Combining procedural rules.<br>- Learning about multi-dimensional character of sustainable palm oil. |
| | **Framing** | - Diverging frames on palm oil as a barrier or engine for development.<br>- Diverging frames on the scale of the problem and governance solution. | - Organizing reflection on diverging frames through deliberation between RSPO and government actors.<br>- Reframing sustainability as a multi-scalar problem to demonstrate the need for combined efforts. |
| | **Leadership** | - Lack of coordination between public authorities at national level and leadership of RSPO at global level. | - Diverse and compatible leadership qualities of government, business and civil society actors. |
| Means | **Knowledge** | - No (institutionalized) collaboration with scientific community. | - Independent scientific research to reduce controversies on effects of palm oil production and expansion on biodiversity. |
| | **Time** | - Too long time to get all palm oil producers certified. | - Low and slow adoption of standards by palm oil growers is common problem of RSPO and government. This could prompt joint efforts to speed up certification. |
| | **Financial resources** | - Resources for extension and programs to implement standards at national and local level are low. | - Applying together (as RSPO and national government) for funding from international donors for joint implementation. |

mainstreamed in the RSPO because it was already there; it was one of the reasons for its creation at least for the WWF. As a consequence the framing of 'sustainable palm oil' has been a lever for promoting and mainstreaming the conservation of biodiversity. The integration or mainstreaming of biodiversity in the RSPO consultation process was accepted in the multi-stakeholder process as long as other dimensions and issues could be tabled and mainstreamed at the same time as well. This means both conservation of biodiversity can be seen and accepted as one of the sustainability principles also by multinationals or palm oil growers and thus a unifying value but also that there are major underlying conflicting interests that have to be considered.

Another important lever for strengthening mainstreaming is the strong commitment to values related to transparency and inclusiveness by all the participants in the RSPO process. This commitment should contribute to legitimation of the whole regime for its key stakeholders. However, there is a clear scale limitation to these process values as the global standard process does not open up for dialogues at national and local levels. This has already become a major barrier for the legitimacy of the RSPO in Indonesia contributing to the government creating its own certification standard and it could also be a major barrier for the acceptance of the RSPO approach in local communities.

The presence of strong leading actors, WWF and Unilever for the RSPO and the Indonesian Government for the ISPO, that do favour perhaps for various reasons, the mainstreaming of biodiversity and other sustainability dimensions into the production of palm oil, is a lever to build on. The RSPO itself is now a global leader in the sector and in this role there are two major pitfalls that can be identified as barriers for mainstreaming: one is its lack of capability or willingness to organize concerted dialogue with national, regional and local governments in production countries and to explore new public-private forms of governance; another is that it has not taken up the challenge to organize roundtables at regional or local level in production countries, or the idea of decentralizing decision-making power to local or regional roundtables. Generally speaking, RSPO leadership has not been very responsive to concerns and queries of public authorities in Indonesia at the national, provincial and local level. Furthermore, two major pitfalls could be distinguished in governmental leadership: one is the lack of capability or willingness to explore new public-private forms of governance, together with delegates from the RSPO; another is its inability to address and solve various 'legal problems' that plantation companies face to get ISPO certified and to contribute to resolution of land conflicts or disputes between communities and companies at the local level.

The means that are needed to implement the certification schemes are likely to be another barrier. One example is the subscription fees and technical knowledge needed for obtaining the RSPO standards; these are likely to be prohibitive for small plantation owners. On the other than the RSPO has been successful in finding resources and for the Indonesian government the money flows for REDD projects show capacities to overcome financial barriers and develop innovative schemes. Another significant barrier is the lack of knowledge on how effective the RSPO and ISPO standards are (or could become) in theory and practice for protecting biodiversity.

### 4.6.2 Possible future strategies

Both the RSPO and Indonesian government face difficulties in mainstreaming principles of sustainability (including those related to the conservation of biodiversity) into plantations. If and when the RSPO and Indonesian government would recognize this as a common problem, RSPO leadership and IPOC could sit together to discuss options for addressing and improving this situation. A learning approach that brings in experience and knowledge from growers and local communities as well as scientists would be essential in such a strategy.

The co-existence of the RSPO as a global standard and ISPO as a national standard could provide room for standard-shopping to plantations and confusion in the first place. To prevent this, RSPO leadership and the IPOC could sit together and explore possibilities of collaboration or even public-private partnership.

The RSPO and government of Indonesia could also facilitate roundtables at the regional or local level. So far both the government and RSPO has concentrated on global or national events. They also could (together) organize multi-stakeholder consultations closer to production areas in Kalimantan or Sumatra.

### 4.6.3 Insights for mainstreaming biodiversity in the palm oil sector

Though not institutionally linked, the RSPO and government of Indonesia can be seen as part of a complex, multi-actor and multi-level governance system of sustainable palm oil. Both the RSPO and ISPO standard include criteria on protection of biodiversity. However, as the large majority of palm oil growers in Indonesia have refused to voluntarily join the RSPO or to apply for ISPO certification under mandatory rule, the impact of these standards on preservation of biodiversity is not yet very high. This does not mean that there is not considerable potential within these certification schemes for the future preservation of biodiversity. Our analysis has identified a number of barriers that have to be overcome and levers that can be used to promote this direction. They centre on improvement of institutional design, finding ways of bringing in both experience based and scientific knowledge for learning process that is bound to take time, and taking more advantage of the common ground on values for sustainability that has been gained.

This study suggests that both the RSPO and government of Indonesia should reflect on the development of a new generation of governance arrangements that possibly includes a hybridization of global and national governance and combinations of state-cantered territory-based sovereignty and non-state chain-based sovereignty. What that could look like in more detail requires further research. When comparing the voluntary RSPO scheme with the mandatory ISPO scheme it is clear that there is no magic solution in a legally binding scheme if there are no means available to enable its implementation or enforce compliance with it. The shadow of hierarchy for the ISPO case is however one of potential strength for the certification scheme, while the same shadow looms as a threat in the background for the RSPO in the potential conflict with WTO rules.

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## Appendix I: List of interviewees

| Interviewee | Relationship with RSPO | Type and date of interview |
|---|---|---|
| **1 Chief Executive Officer, WWF Switzerland** | Representative of WWF in global discussion on RSPO in 2003-2004 | Interview by phone, 14 November 2012 |
| **2 Consultant sustainable business** | Facilitator of first informal consultation on RSPO in 2002 | Interview together with Sabina Stiller, 6 December 2012 |

# Chapter 5. Foreign Direct Investment in African agricultural land

Jack Peerlings

## 5.1 Introduction

This chapter deals with foreign direct investment (FDI) in land and explores how the mainstreaming of biodiversity could be achieved in this 'sector' that links land use and agriculture. FDI in land takes mainly place in South-America, Sub-Saharan Africa (SSA) and South-East Asia (Land Matrix, 2013). Although our discussion is general, the focus of the analysis will be on SSA. The choice for SSA is somewhat arbitrarily but it is considered as the region where land is relatively abundant and the countries relatively poor and their governments weak (Cotula et al., 2009). We will illustrate FDI in land in SSA using two specific examples from this region: flower production in Ethiopia and a forest project in the province of Niassa in Mozambique (see Box 1).

Many countries depending on food and energy imports began to realize their own vulnerability concerning long-term food and energy security during the severe food price crises in 2007-2008 in particular during the price spikes. This led these governments to stimulate investments in land in foreign countries. The stimulus for investment was made in different ways (Cotula et al., 2009; IFPRI, 2009). First, by direct land acquisitions by central governments agencies (this is rare). Second, by investments in land by state-owned enterprises (SOEs). Third, by Sovereign Wealth Funds (SWF) (state-owned investment funds that are mostly funded by revenues from commodity exports or from foreign-exchange reserves held by the Central Bank), taking a minority share in investing companies. SWFs may operate through a subsidiary operational company, or through joint ventures with private sector companies or with SOEs or investment funds. Finally, governments have a number of instruments beyond being shareholder for providing financial and non-financial assistance to companies (see 4.2).

Due to the global financial crisis, taking place at the same time as the food price crises, the value for investment of many assets fell, while acquiring land in SSA was cheap – leading foreign investors to realize the potential of agricultural land in SSA (Deininger et al., 2011). Furthermore, the practice of the governments of the host countries to market much of the land as "idle", i.e. free of claims (e.g. by local communities), backed the investment decisions of foreign investors (Cotula et al., 2009).

In practice close partnerships exist between foreign investors and the governments of the host countries that rule over the lands in question, with the latter playing a key facilitating role in creating the institutional environment to make the transactions possible or brokering the deals themselves. For the governments of the host countries FDI is seen as beneficial for their country but the self-interest of government representatives i.e. corruption could be an additional reason form supporting FDI (De Schutter, 2011; Cotula et al., 2009). The benefits for a country come from economic growth (i.e. an increase in national income) and an increase in government revenues (more tax revenues through export taxes and an increased

tax base because of the larger national income, and government income from the land rents). Foreign investors may also bring capital, technology, know-how and market access, and may play an important role in catalysing economic development in rural areas (Cotula et al., 2009).

## 5.2 Agricultural land and biodiversity – existing and potential linkages

Exact data about the frequency and the amount of land involved in the land deals and the state of biodiversity on these lands before and after the deals is largely missing or incomplete (see for overviews IFPRI, 2009; Cotula et al., 2009; Anseeuw et al., 2012; Land Matrix, 2013). It is nonetheless possible to expect both direct and indirect effects on biodiversity from FDI in land.

Direct effects are resulting from a transition of the land to monoculture and or intensification of land use e.g. in the form of increased use of pesticides and fertilisers. Direct effects differ strongly from case to case. Land involved in land deals is in most cases characterised by a low population density but not idle, there is some form of land use, often by the poor for purposes such as grazing animals and gathering fuel wood or medicinal plants (Cotula et al., 2009; Deininger et al., 2011). So, the areas most affected are the 'commons' - traditionally used collectively by local people - including much of the world's forests, wetlands and rangelands (IEED, 2013). Therefore, land involved in FDI is often characterised by a large biodiversity (IEED, 2013). However, sometimes it also involves agricultural land. In that case direct effects on biodiversity are smaller. Matavel et al. (2011) show that of the 1.2 million hectares in the period 2004-2009 transferred to investors in Mozambique 50% was considered not to be (fully) used. So, land deals could involve both agricultural land and real natural areas but in most cases it involves land uses somewhere in between. Moreover, the land is often characterized by a low actual yield gap (making the land cheap) and potentially high yield gap resulting in a high long term return of the investment. The Netherlands Environmental Assessment Agency (2010) examined eight options to improve biodiversity. One of the options mentioned is closing the agricultural yield gap. FDI in land, despite its negative effects, can contribute to closing this gap.

In the region or country where the land deal takes place also indirect effects take place. If people have to abandon land and they cannot find a livelihood outside agriculture the result could be that other land than involved in the land deal will be more intensively used or land not used before will. If this takes place this will negatively affect biodiversity. The opposite could also be true, pressure on surrounding land could become less because of increased income and job opportunities. The latter will be most relevant in case of labour intensive agricultural production, i.e. horticulture.

Another indirect effect takes place in the investor's country and worldwide. Increase in food production affects production and intensity of food and fibre production elsewhere. Again these effects could be both positive or negative for biodiversity depending on land use, pollution impacts from agrochemicals etc.

FDI in land does not necessarily need to lead to unsustainable outcomes but, instead, under

certain circumstances they have the potential to contribute to the host country's food security and sustainable development. When it is not an option to replace domestic farmers to other economic sectors, as is often the case in SSA countries, due to their inability of absorbing this additional labour, these farmers need to remain in the agricultural sector. This can lead to pressure on marginal lands, and therefore, negatively affects biodiversity.

## 5.3 Current mainstreaming efforts

There is some recognition of the potential negative effects of FDI in land on biodiversity, e.g. IFPRI (2009) puts potential negative effects on biodiversity on a list of potential drawbacks. However, the main discussion on FDI in land focusses on livelihood and human rights of the farmers involved. To the best of our knowledge no research exists on the negative effects of FDI in land on biodiversity although there is attention for sustainability of the FDI in land. In recent years, the foreign investors' acquisitions of agricultural land in SSA started a debate on the social and environmental effects of this foreign direct investment (FDI) in land in SSA. Currently, two diverging positions or frames are dominating this debate. On one hand, critics emphasize the possible dangers of FDI in land, arguing that weak state capacities, insufficiently enforced property rights of local small-scale farmers and underfinanced regulatory institutions bear the risk of preventing benefits for the region's rural poor. They fear that benefits concentrate only on a small privileged part of the population and that the risk of adverse impacts, such as environmental pollution, degradation of resources or social conflict, increases (Deininger et al., 2011; Schoneveld, 2013). Although loss of biodiversity is only seldom explicitly mentioned in the literature it certainly falls under the category adverse environmental effects and lack of sustainability of the FDIs in land (see section 2).

On the other hand the advocates of FDI in land argue that foreign investors provide jobs and technologies that enable land-abundant countries to overcome underinvestment in the agricultural sector, leading to an increasingly sustainable development. These advocates recognize the potential adverse effects but believe that with good governance possible negative social and environmental effects can be avoided or minimized (see e.g. IFPRI, 2012). Among the advocates are e.g. the governments of the host countries and the World Bank (World Bank, 2010) although the latter also takes a more critical view (Deininger et al., 2011).

## 5.4 Governance analysis

In the following sections we analyse the ten governance dimensions that can be relevant for mainstreaming an issue in governance contexts (Karlsson-Vinkhuyzen et al., 2014). The analysis is made for SSA broadly but with some examples from the two cases described in Box 1.

### 5.4.1 Horizontal interactions

There is a wide variety of investors (Cotula et al., 2009; IFPR, 2009) ranging from central governments agencies (rare), investor countries' state-owned enterprises (SOEs) and by Sovereign Wealth Funds (SWFs) (state-owned investment funds). SWFs may operate though

**Box 1: Examples of the effects of FDI of land in Sub-Saharan Africa on biodiversity**

### Flower production in Ethiopia

In case of FDI in flower production in Ethiopia land is rented by companies from the government that formally owns the land. Dutch companies play a dominant role in the Ethiopian flower sector (e.g. Ayelech and Helmsing, 2010). The Ethiopian government facilitates these investments. People that used to live on the land are employed in the labour intensive flower farms. In some cases this is also contractually agreed. The increased and more certain income improves people's food security and livelihoods. Flower farms often set up hospitals and schools and pay relatively high wages. This is not for altruistic reasons but improved health care and schooling increase productivity and provide a 'license to produce' (see e.g. Ayelech and Helmsing, 2010). An example is Sher Ethiopia (Afriflora, 2013) a production facility where several companies produce cut flowers. Production is largely exported to the Netherlands. A Code of Conduct for sustainable flower production has been implemented including rules about maintaining soil conditions and the use of pesticides. Rules agreed are more strict than of that of the Ethiopian government. The Code has been developed by a team comprising EHPEA members (flower exporters) and local stakeholders and the development has been guided by external expertise provided through the Ethiopia Netherlands Horticulture Partnership Programme (see EHPEA, 2011). Biodiversity may be negatively affected on the land under production despite sustainability criteria included in the Code of Conduct. Given the positive effect on economic growth and employment the indirect effects on biodiversity however are probably small. However, flower production is certainly not only a success story. There is criticism on many issues such as low wages, potential environmental damage (e.g. Mulugeta Getu, 2009) and the consequences of potential farm discontinuity (see The Hindu (2013) for an example for a failed FDI project in Ethiopia).

### Forest project in Niassa Mozambique

Niassa is a province of Mozambique. With an area of 129,056 km² and a population of 1.027.037 (2006) it is the most sparsely populated province in the country. Village communities grow crops and use the land involved e.g. to produce charcoal. The area is characterised with a high level of biodiversity. Lichinga is the capital of the province. The Malaonda Foundation is founded by the government of Mozambique with the objective to attract FDI in Niassa province among others in the forestry sector in order to improve the livelihood of the population (Sida, 2013). The largest forestry project is the Chikweti Forests' plantation that started a few years ago and which is still growing, aiming to reach a size of 10.000s of hectares on 50 year land leases (Malonda Foundation, 2013; Matavel et al., 2011). One of the investors in this plantation is the Dutch pension fund ABP (but e.g. also Scandinavian churches). Chikweti Forests promised jobs, and to a limited extent they did deliver on this. This improved the livelihood of the workers employed. However, employment is limited and other support promised often did not arrive. Another aim was that the forest would get the certificate of the Forest Stewardship Council (FSC) indicating that production is sustainable. However, this certificate is not granted yet. In recent years Chikweti Forests faced protest e.g. in the form of fires set by the villagers and protest of shareholders as ABP (e.g. Volkskrant, 2011; New Internationalist, 2013; Matavel et al., 2011). Shareholders are worried about their reputations. As a result they e.g. set up a social fund providing cheap loans to support the local communities and there is pressure on Chikweti Forests to obtain the FSC certificate.

a subsidiary operational company, or through joint ventures with private sector companies or with SOEs or investment funds. Countries as China, Saudi-Arabia and India are most active according to the Land Matrix Database (Anseeuw et al., 2012). However, also other investors e.g. from the EU are active. So, companies do the actual investments but there is often a strong link with the government of the investor country. Besides being shareholder this could be because governments have a number of instruments beyond being shareholder for providing financial and non-financial assistance to companies. Besides the companies and governments local communities of farmers are important stakeholders. Before the FDI in land takes place they are the users of the land and the FDI directly influences their livelihoods. Moreover, after the FDI they are a potential source of labour for the investing companies.

The interests of the local communities but also of the environment are represented by both nature conservation groups and human rights groups who lobby to get their interests realised. The Africa Biodiversity Collaborative Group (ABCG) comprises seven U.S. based international conservation NGOs with field programs in Africa including the WWF. ABCG explores emerging and high priority African conservation issues, shares lessons learned, and seeks opportunities for collaboration. One of their themes is 'Land Use, land tenure, planning and governance for conservation' which includes FDI in land (ABCG, 2013). Intergovernmental actors like the World Bank promote FDI which is seen as a motor for a sustainable economic development. This is e.g. done through information provision on investment opportunities (e.g. World Bank, 2010). Consumers in the host countries can play an important role as their demand can strongly influence production circumstances (see e.g. the certification of flowers in the Ethiopian flower case in Box 1).

### 5.4.2 Vertical interactions

Some governments of investor countries have established development funds that provide financial services such as subsidies, soft loans, guarantees and insurance to both SOEs and other investors. Government agencies also provide a range of informational, technical and bureaucratic support to the private sector, e.g. through export credit agencies. These measures are also applied by the governments of the host countries. This support would enable governments of both the host and investor country to set criteria for a sustainable production. However, it is not common to do so. In some cases NGOs actively co-operate with investing companies to guarantee a sustainable production e.g. in designing a Code of Conduct, e.g. in designing the Ethiopian Code of Conduct labour unions and the International Labour Organization have been involved (EHPEA, 2011). This creates potential interactions between the consumers of the produce and the financial actors who make the investments in land. There are also NGOs that support local communities to deal with the effects of FDI in land. In the case of the Sher project the Sher foundation has been established that gets support from a Dutch NGO (Wilde Ganzen) to establish e.g. a primary school (Afriflora, 2013). Although e.g. IFPRI (IFPRI, 2011) promotes multi-stakeholder co-operation this is often not in the interest of the investors and governments of the host countries.

### 5.4.3 Policies and norms

Each host country has its own law that applies to land investment deals and foreign investors have to obey to it (Cuffaro and Hallam, 2011). In addition, international law provides certain provisions that especially protect the rights of foreign investors (Smaller and Mann 2009). As

international law is considered to be superior to national law, in case of conflict or doubt international law is applied (Cotula et al., 2011). The role of international law in land investment deals is predominantly conducted through international investment agreements (IIAs) that address mainly the economic aspects of land investment deals (Smaller and Mann, 2009). Sometimes the land deals form part of a broader agreement that includes measures for a wider cooperation between two countries concerning development assistance and business cooperation, making these land investment deals highly attractive for host country governments (Cotula et al., 2011). Furthermore, it is common that IIAs provide foreign investors with the right to export most or all of their produce. This is crucial as foreign investors mainly acquire agricultural land in SSA with the aim of exporting the output to their countries of origin. At the same time, international law on IIAs largely fails to address non-economic aspects adequately, for example concerning social or environmental issues (Smaller and Mann, 2009). Once land investment deals have been concluded, it is very difficult for receiving governments to make any changes to the contract, even during food emergencies (Smaller and Mann 2009).

Property rights in SSA are a complicated issue as land rights are largely unclear and usually either non-existent or based on local traditions (Smaller and Mann, 2009). Governments legally own most of the land in the region, while private land ownership plays only a minor role (Cotula et al., 2011). Although land investment deals take place under all kinds of property rights regimes, they are most frequent where insecure property rights prevail and where people are thus most vulnerable (White et al., 2012). It is usually the poor farmers who lose their land first due to a lack in protection of their land rights (Zoomers, 2010). As national law usually only protects customary tenancy where it considers it to be under productive use, a term that lacks a clear definition (Cotula et al., 2011), property rights of rural people tend to be insecure, making them vulnerable to dispossession from their land (Cuffaro and Hallam, 2011). Recently, some governments recognized the problem of insufficient protection for the land rights of rural citizens. As a result, they started to take measures to improve their legal situation through strengthening the protection of customary tenure rights (Cotula et al., 2011).

Moving on to transnational and global norms, the FAO has formulated 'Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security' that outline principles and practices that governments can refer to when making laws and administering land, fisheries and forests rights (FAO, 2012). For FDI in land these guidelines entail: recognition and protection of legitimate tenure rights, even under informal systems; best practices for registration and transfer of tenure rights; making sure that tenure administrative systems are accessible and affordable; managing expropriations and restitution of land to people who were forcibly evicted in the past; rights of indigenous communities; ensuring that investment in agricultural lands occurs responsibly and transparently; mechanisms for resolving disputes over tenure rights; dealing with the expansion of cities into rural areas. It is up to individual countries to implement these guidelines. These guidelines could be helpful in formulating a Code of Conduct on FDI. Another potentially relevant set of norms are the Equator Principles, which is a risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects and is primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making (Equator

Principles, 2013). The Equator Principles can therefore be considered guidelines for project investments (including land) and 78 financial institutions in 75 countries have adopted the Equator Principles (Equator Principles, 2013).

### 5.4.4 Interests

The main interests of investing companies is to establish a profitable production of agricultural or forest products. For the investor countries (e.g. through shared ownership) this could contribute to meeting their demand of feed, food and energy (biofuels). Investing companies do not want to be hampered by restrictive rules. On the other hand they have an interest in a well-functioning institutional environment, infrastructure, educated and healthy employees, etc. Environmental effects including biodiversity are not of direct importance to them. However, implementing a Code of Conduct, that includes environmental friendly production, can be an important marketing tool and can provide a license to produce. However, this depends on the investor countries. In countries like Saudi Arabia, China and India who are most active according to the Land Matrix Database (Anseeuw et al., 2012) there will probably be less consumer pressure than in the European Union or United States e.g. because of lower incomes and larger food insecurity.

The interest of the present users of the land lies in keeping the status quo as the present land use is for them important for their livelihoods. Although they are often promised that their livelihood will improve because of the FDI in land this is often not the case (Cotula et al., 2009; Deininger et al., 2011). The effect seems to depend largely on the labour intensity of the 'new' land use. If it is high there are more labour opportunities (see Ethiopian case) than when it is low (see Niassa case). Even if data is missing it is quite plausible that present land use involves more biodiversity than the land use after the FDI in land as new land uses are often characterized by monoculture and use of agro-chemicals.

Governments of the host countries can benefit from FDI in land because it can involve revenues for them in the form of land rents paid and more taxes (e.g. export taxes). Moreover, there could be an increase of economic growth and rural development. This could also lead to a more environmentally sustainable production as there are more financial means. Biodiversity is often not of direct interest except when the FDI in land endangers tourism. Important is also to note that biodiversity is from an economic point of view a good with a positive income elasticity, and therefore, for poor countries of less interest than for rich countries as shown in a meta-analysis by Jacobsen and Hanley (2009). The presence of corruption and lack of transparency can lead to a situation where the interests of society and government diverge (De Schutter, 2011; Cotula et al., 2009).

NGOs focusing on nature conservation (e.g. ABCG, 2013) are just one of the groups of NGOs involved in lobbying on the issue of FDI in land. Moreover, given the linkages between nature conservation and other themes like livelihoods the focus of many NGOs is rather broad. ABCG for example has besides the theme 'Land Use, land tenure, planning and governance for conservation' also themes like 'Communities and livelihoods' and 'Conflict and corruption' (ABCG, 2013).

### 5.4.5 Values

Values and visions of the stakeholders are strongly related to and underlie their interests

(see previous section). Economic interests prevail among most of the stakeholders related to FDI in land (except maybe with exception of some NGOs) but environmentally sustainable production is certainly also an issue. It is unlikely that stakeholders are against protection of biodiversity but few give it any weight or even recognises that loss of biodiversity is a potential problem of FDI in land. However, investors can in some cases also have a commercial interest in advocating environmental friendly production in order to maintain 'a license to produce' that may otherwise be questioned from consumers.

### 5.4.6 Framing

Critics on FDI in land emphasize the possible dangers, arguing that weak state capacities, insufficiently enforced property rights of local small-scale farmers and underfinanced regulatory institutions bear the risk of preventing benefits for the region's rural poor. They fear that benefits concentrate only on a small privileged part of the population and that the risk of adverse impacts, such as environmental pollution, degradation of resources or social conflict, increases (Deininger et al., 2011). Also the term "Land grabbing", which is used frequently even in academic literature and has almost become a synonym for this kind of investments, comprises a clearly negative framing through indicating that foreign investors illegitimately "grab" the land of poor small-scale farmers and thus endanger their livelihoods. NGOs stress the negative effects of FDI in land on especially human rights and livelihoods of the people involved but also on sustainability and biodiversity (e.g. WWF, 2013). Also present land users stress the fact that their livelihoods are negatively affected by the FDI in land (Matavel et al., 2011).

On the other hand the advocates of FDI in land argue that foreign investors provide jobs and technologies that enable land-abundant countries to overcome underinvestment in the agricultural sector, leading to an increasingly sustainable development. These advocates recognize the potential adverse effects but believe that with good governance possible negative social and environmental effects can be avoided or minimized (see e.g. IFPRI, 2012). Not surprisingly investors stress that they bring economic development which is in the overall interest of the host country in which they invest. As they are firms they are also explicit about the fact that they try to maximize profit. They frame FDI as not conflicting with providing education and health services as these improve labour productivity (as in Ethiopia). Interesting in the Niassa case is that the investors claim that their actions are positive for the environment as they prevent charcoal production that is considered to be negative for the environment (Malonda Foundation, 2013).

Workers and other beneficiaries (e.g. transport companies) are often positive towards FDI when it has improved their livelihoods. Also domestic governments stress that the FDI leads to sustainable economic growth. For example, despite potential adverse effects FDI in flower production it is advocated as beneficiary to economic growth by the Ethiopian government (see e.g. Ayelech and Helmsing, 2010).

### 5.4.7 Leadership

In the Ethiopian flower case a number of companies have set up a Code of Conduct for sustainable flower production (Agriflora, 2013; EHPEA, 2011). Part of this Code of Conduct are rules about maintaining soil conditions and the use of pesticides. Interesting is that these rules are more strict than of that of the Ethiopian government (see EHPEA, 2011). Fear of

loss of reputation and commercial interests seem to be the main motivation. The same motivation can be found with the shareholders of Chikweti Forests in Niassa (e.g. ABP) demanding for a more sustainable production. If these initiatives should be counted as examples of leadership for mainstreaming biodiversity is more questionable. It is clear that the WWF plays an important role in putting biodiversity related to FDI in land on the international agenda. Also the FAO (2012) by formulating the guidelines on the governance of land deals and the financial institutions signing the Equator Principles (2013) could be considered as leaders in a governance arena where not much at all is happening on biodiversity.

### 5.4.8 Knowledge

Support for aligning interests between biodiversity and other factors like economic growth, human rights etc. could benefit from better data and indicators. The fact that there is even no data on how much and which land is involved in FDI in land shows that lack of information is considerable. Research that seeks to quantify biodiversity before and after FDI in land projects is entirely absent. An analysis of the effects of FDI in land on biodiversity would involve a systematic assessment of potential effects of specific land deals. However, perhaps more important is the lack of knowledge on ways to reduce negative impacts on biodiversity impact by large scale monoculture and on the degree to which consumer pressure on host countries and investing firms could influence land policies. There is also a lack of transparency and knowledge about the formal agreements made between foreign investors and the governments of the host countries.

### 5.4.9 Time

Investors have a long time perspective because they want to benefit from the investments made in e.g. land improvements and infrastructure. This usually results in long term lease contracts (e.g. 50 year lease for the Chikweti Forests in Niassa). This long term perspective is beneficial for the environment because it prevents short term opportunistic behaviour of the foreign investors leading to soil depletion and erosion. If the time horizon for investors is shorter this hampers sustainable production as investment costs have to be earned back in a shorter time period. When contracts are concluded for a long period the conditions in the contract also remain the same for a long period hampering flexibility. As a result of this changed circumstances cannot be taken into account.

### 5.4.10 Financial resources

While FDI in land involves considerable financial transactions the profits made (whether on the investor or host side) is not channelled to biodiversity protection that often involves costs. Costs probably differ largely between projects depending e.g. on their size. The Ethiopian case shows that cost is probably not the main issue. For the foreign investors getting a license to produce may outweigh the costs. Moreover, applying a Code of Conduct and selling certified products can also be attractive commercially (Cuffaro and Hallam, 2011). Governments of host countries also could decide to implement more strict rules regarding sustainable production however implementation and monitoring costs would be a considerable barrier.

## 5.5 Effectiveness and legitimacy of possible mainstreaming efforts

As mentioned earlier some see FDI in land as a potential opportunity for sustainable economic growth and rural development, if it is implemented such that it minimizes or avoids possible negative social and environmental effects. Prominent players promoting this are e.g. the World Bank (World Bank, 2010) and the International Food Policy Research Institute (IFPRI, 2011). From this point of view the risks of FDI in land can be managed. If this is actually the case is questioned e.g. by Borras and Franco (2010). Since little has been done on bringing in biodiversity concerns in relation to FDI it is difficult to assess how effective such measures could be.

In contrast, there are several known aspects around FDI in land that raises concerns for legitimacy. Land deals are usually concluded between the governments of the host country and foreign investors, while the host country's communities and small-scale farmers do not have much say in the conclusion of these land deals. They do not belong to the parties that take part directly in designing land investment deals (Vermeulen and Cotula, 2010). There are examples where assessments and consultations take place (Vermeulen and Cotula, 2010), but even then local communities are passive entities rather than active participants of an evaluation of the impact that land investment deals have on them. The community consultation goes a step further than the assessment and seeks to include these communities more actively. However, community consultation is often limited to discussions with local elites, village elders and officials who usually have already been involved in the planning process beforehand and support it. Thus, consultation is often constrained to privileged and supportive parts of the local communities, while excluding the majority of the rural citizens (Cotula et al., 2011). As the contracts are usually concluded in secrecy, they lack transparency. This makes it difficult to build trust in these land deals and also makes it difficult to observe their characteristics and consequences. Furthermore, there is a power imbalance between the foreign investors and the receiving country's stakeholders. Foreign investors are protected by international law under which the land deals have been concluded and host countries' governments and local farmers often do not even possess formal property rights.

## 5.6 Synthesis

The analysis above has identified a number of barriers and levers for strengthening the contribution to biodiversity conservation related to foreign investment in land in Africa. These are summarised below and in Table 1.

### 5.6.1 Identifying barriers and levers of action

#### Structures and institutions

Mainstreaming could be achieved by defining and influencing the institutional environment in which investing companies have to operate in the host country or through Codes of Conduct formulated by the investing companies themselves. There is a potential win-win situation as investors obtain a 'license to produce', profit and a secured food supply while local communities, NGOs and other stakeholders get their interests acknowledged. However

in practice there are several strong structural and institutional barriers for both strategies. First, as contracts fall under international law they are of a higher order than national policies hampering the ability of national policies to address biodiversity. Second, the property right structure is often unclear. This bears the risk of preventing benefits or compensation for the region's rural poor. Third, monitoring and enforcement mechanisms are often lacking (see also Schoneveld, 2013). Costs of monitoring and enforcement are therefore high. Fourth, there could be self-interest of the government officials of the host countries (due to corruption) to promote land deals also when they are clearly negative for biodiversity or other environmental and social dimensions. The fact that many of the countries involved in land deals in SSA are characterised by high levels of corruption (e.g. Ethiopia and Mozambique) strengthens this concern (Transparency International, 2013 and Prosper et al., 2011). Fifth, related to the previous point is that there is lack of transparency of policy making and in the details of the contracts concluded. A stronger and better functioning government could thus be an important lever to manage the potential negative effects of FDI in land. As governments of the investors often provide a range of informational, technical and bureaucratic support to investing companies this support could be made conditional to fulfilling criteria for a sustainable production. Only strong, well-functioning and non-corrupt governments are able to do this. It would also be these kinds of governments that would be able to implement land use planning as an instrument to protect biodiversity. Another lever could be multistakeholder cooperation that could be an efficient way to organize a more sustainable production. For example, giving local communities partly ownership (so joint ownership with the investing companies) would merge interests, and therefore, could lead to a more sustainable production.

### Motivations

In the case of FDI in land the different stakeholders have different values and interests. Investing companies are interested in profit and a 'license to produce'. Governments of investor countries want to improve food and energy security. Governments of host countries want economic growth but sometimes personal motivations of government officials (corruption) play a role. Local communities are primarily concerned about the livelihoods of their people. NGOs want to protect human rights and some also biodiversity. All these different interests are reflected in two dominant frames. First, FDI in land is good for economic growth and sustainability if well governed and second, FDI in land is unsustainable. The first frame justifies FDI in land for investing companies and governments of investor and host countries. The second frame is dominant with the opponents of FDI in land because they fear unsustainable production, a negative effect on the livelihoods of people and more general a negative effect on human rights. Clearly these contradicting values, interests and frames constitute a significant barrier for integrating attention to biodiversity in FDI deals in land. On the other hand biodiversity could be an issue in both frames. Despite critics and evidence of the drawbacks of FDI in land (e.g. Borras and Franco, 2010; Schoneveld, 2013) the challenge seems to be to make FDI in land more sustainable. The first frame is in that sense more helpful than the second but the idea that there is a win-win situation might be a fig leaf for FDI in land. Leadership might help to show the possibilities for mainstreaming biodiversity. NGOs and intergovernmental organisations like the FAO could assist governments and investing companies to draw up policies and Codes of Conduct in which the different interest of the stakeholders have been aligned.

**Table 1**. Barriers and levers for addressing biodiversity related to Foreign Direct Investment in African agricultural land.

| *Cross-cutting elements / Dimension* | | Potential for change | |
|---|---|---|---|
| | | **Barriers** | **Levers** |
| **Institutional** | **Horizontal and vertical interactions** | - Actors not well connected, lack of information. Weak linkages between actors. Lack of transparency. | - Government policies and Codes of Conduct. Fear of loss of reputation of shareholders, and pressure of consumers and NGOs. FAO guidelines can facilitate the formation of policies and Codes of Conduct. |
| | **Policies and norms** | - Many existing policies and norms working against mainstreaming. | - Trying to establish a more clear property right structure and policies.<br>- Pressure of consumers and shareholders of the investing companies. |
| **Motivational** | **Interests** | - Self-interest of policy makers in host and investor countries. | - Creating win-win options via a Code of Conduct. |
| | **Values** | - Sector objectives diametrically opposed to mainstreaming issue. | - Reinforcing alignment of values. |
| | **Framing** | - Diametrically diverging frames. | - Both frames can allow for mainstreaming biodiversity. |
| | **Leadership** | - Absent, weak or unmotivated leaders. | - Leadership can be (commercially) interesting for investing companies. |
| **Means** | **Knowledge** | - Considerable knowledge gaps, information required is case specific. | - There is interest in mainstreaming so also in obtaining relevant knowledge. |
| | **Time** | - Too long contract duration. | - Long term contract help to prevent opportunistic behaviour. |
| | **Financial resources** | - Resources are scarce. | - Interested first movers with resources. |

### Means

Lack of financial resources and knowledge could be barriers for mainstreaming biodiversity. Governments of host countries could decide to implement relevant policies but high implementation and monitoring costs could negatively affect implementation and effectiveness of these policies. Codes of conduct face the same kind of problems. To

establish a Code of Conduct therefore involves costs but the benefits could outweigh the benefits for investing firms if a license to produce is obtained. However, in some cases costs will outweigh the benefits and this will prevent the mainstreaming of biodiversity. Mainstreaming biodiversity will also depend on the pressure put on the investing companies and governments of the host and investor countries by consumers, stakeholders and NGOs. The more far reaching the demands the higher the costs usually will be. Bringing together all stakeholders and negotiating also involves costs. Internationally recognised labels for products could lower these costs of implementation and monitoring. Better agronomic information and scientific research on impacts of FDI on land for biodiversity would also facilitate and lower costs of discussions, negotiations and implementation of effective government policies and Codes of Conduct. This also goes for international guidelines as formulated by the FAO (2012) and the Equator Principles (2013). Another related and potentially important level would be a greater degree of transparency around FDI in land. As the land deal contracts are usually concluded in secrecy, they lack transparency making it difficult to observe their characteristics and consequences which in turn makes effective lobbying for biodiversity and other societal concerns more difficult. An optimal duration of the contracts of the land deals is relevant. A too long contract could lead to less flexibility, e.g. making it impossible to deal with changing circumstances. A too short time period could lead to opportunistic behaviour.

### 5.6.2 Possible future mainstreaming strategies

The case of FDI in land is a challenging one for bringing in biodiversity into the heart of governance but at least the following two strategies could be explored. First, pressure from NGOs, local communities and shareholders can give an incentive to investors to draw up a Code of Conduct (Cuffaro and Hallam, 2011). Investors could have a commercial interest in doing so. Shareholders in developed countries often attach value to other factors than just profit, e.g. because of potential reputation damage. Consumers in 'rich' countries often attach more value to production circumstances than consumers in 'poor' countries do. The Code of Conduct in the Ethiopian case (EHPEA, 2011) shows that investors indeed may decide to draw of a Code of Conduct. For biodiversity to be part of a Code of Conduct clear and widely accepted indicators of biodiversity are needed. A problem with this strategy is that only the direct effects on biodiversity can be taken into account. Taking into account indirect effects in a Code of Conduct is more difficult. Another limitation of a Code of Conduct is that enforcement mechanisms are usually missing and many other issues than just biodiversity will be included (Borras and Franco, 2010).

Second, the government of the country where the investment takes place (host country) can play an important role as they conclude contracts. They could decide to include conditions in a wide range of a topics including biodiversity. The failure of the Karuturi project in Ethiopia shows that even in countries with a weak government the government could decide to take action if the investing firm (in this case from India) is not meeting conditions laid down in the contract (The Hindu, 2013). However the dominance of poor and relatively corrupt countries among the 'hosts' for FDI in land makes it questionable how effective such a strategy would be. As the investing companies have often strong links with the governments of their home country pressure on these governments might also be effective.

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# Chapter 6. Mainstreaming Biodiversity in the Water Sector: Mangrove Management in South-East Asia

Jan Cools and Eline Boelee

## 6.1 Introduction

Mangroves typically provide multiple ecosystem functions and services, including coastal protection, breeding grounds, firewood and food (Macintosh and Ashton, 2002). Mangroves are also among the most vulnerable and threatened ecosystems in the world. Mangroves are increasingly being cut for firewood and to free up new land for high-income intensive aquaculture (mainly shrimp farming). In addition, both mangroves and shrimp productivity are often negatively impacted by external pressures such as upstream water use, e.g. for irrigation and hydropower and downstream impacts from saline water intrusion, due to sea level rise, or sea floods. Even though the knowledge on large-scale impacts on mangroves and even coastal areas or Deltas as a whole is still insufficiently understood, it is considered best practice to manage mangroves as part of the holistic or integrated management of larger geographic entities such as coastal zones, landscapes or river basins (Godschalk, 2009; GWP, 2000). Integrated management however requires the engagement and coordination of multiple stakeholders, including authorities at the local, provincial, national and international level. While substantial progress is made in the planning and implementation of integrated natural resources management, many challenges still need to be overcome to mainstream biodiversity and especially mangroves in water management.

### 6.1.1 Biodiversity in water management

Water and biodiversity are closely linked. Flow regimes, water availability and water quality define to a large extent the habitat suitability (or not) for aquatic biodiversity (Bunn and Arthington, 2002) and are thus important parameters to consider in restoration or conservation efforts (Borja et al., 2010; Feld et al., 2011). A global spatial analysis of multiple stressors on freshwater resources has shown that the water security of almost 80% of the human population is threatened, while biodiversity is affected in habitats served by 62% of the world's rivers' discharges (Vörösmarty et al., 2010). Conversely, sustainable water management can reduce the direct pressures on biodiversity (Aichi Strategic Goal B) and in return enhance the benefits to all from biodiversity and ecosystem services (CBD Strategic Goal D).

Water is of prime importance for food (agriculture, livestock, aquaculture), for people (drinking water and sanitation), for industry, navigation, hydropower and other purposes (GWP, 2000). Water also flows across administrative boundaries. The widely supported governance instrument to address all water needs at the river basin level across sector and geographic borders is referred to as Integrated Water Resources Management (IWRM) (GWP, 2000). A similar holistic concept that focuses on coastal zones as the unit of operation is referred to as Integrated Coastal (Zone) Management (ICM or ICZM; Godschalk, 2009). Wetlands, including mangroves, are water-related ecosystems, highly vulnerable to change, often biodiversity hotspots and suppliers of many ecosystem services (Russi et al., 2013).

### 6.1.2 Mangroves as multifunctional coastal agro ecosystems in South East Asia

Mangrove forests along the coasts around the world are vulnerable natural ecosystems that provide many ecosystem services, such as flood protection and fish breeding grounds. Mangroves support marine, aquatic and terrestrial biodiversity at genetic, species and ecosystem levels (Macintosh and Ashton, 2002). Local communities use natural products such as shellfish, crustaceans, fish, firewood, construction materials and medicines. Mangroves protect coasts from erosion and the impact of strong winds and waves. With the increasing impacts of climate change, such as more intense tropical storms and sea level rise, mangroves have an important role to play in protecting rural livelihoods and need to be preserved.

These ecosystems are threatened by climate change and exploitation. For example, in Asia, more than one-third of mangroves have been lost since the 1980s (Valiela et al., 2001), mainly to aquaculture (38% to shrimp farming and 14% to fish farming), deforestation for firewood (some 25%) and to upstream water diversions (11%) (MA, 2005). The loss is even more serious for primary mangrove forest, e.g. in Vietnam, 62% of the mangroves are currently newly planted monocultures, low in biodiversity (Vietnam government, 2008).

As water shortages increase and salinity rises, particularly towards rivers' delta, rice production is reduced. In Asia, farmers then often shift from rice to shrimp production (Hoanh et al., 2010). Aquaculture, in particular shrimp farming, is rapidly expanding in the Delta. Aquaculture exploits the brackish water zone, thereby encroaching on fragile coastal areas at the expense of mangrove forests. Shrimp farming is a major source of income. Yet, the productivity is restrained by water availability, water quality (salinity and nutrients) and unsustainable production methods (van Halsema, 2012).

## 6.2 Mangroves in the Mekong Delta of Vietnam

Few mangroves remain in the Mekong Delta. The largest mangrove forest is found in the Southwest of the Delta, in the Ca Mau province. Smaller mangrove belts exist at the mouth of branches of the Mekong river. The focus of this chapter is on mangroves in the coastal zone of Vietnam, particularly the Ca Mau and Soc Trang provinces. The area has clearly distinct wet and dry season flows and high population densities. The many large urban centres and intensive agriculture have led to poor water quality in the Delta with respect to nutrients and organic loads (MRC, 2011a).

The majority of the coastal brackish water zone is used for intensive mono-culture shrimp farming and limited mangrove belts remain along the coast line in the Soc Trang province. Erosion threatens the earthen dyke along the coast that protects the hinterland from flooding. Most of the original mangrove forests have been lost, as in other areas in Vietnam, because of the herbicides and defoliants used during the Vietnam war (Vo, 2013). After the war, natural regeneration and rehabilitation programs led to a partial recovery of mangrove forests. Population pressure, the overexploitation of timber for construction and charcoal, and the expansion of aquaculture is not only hampering the restoration but also encroaching on the remaining mangrove forests. In addition, erosion is a major threat in the limited mangrove belts remaining along the coast line in the Soc Trang province (Schmitt et al.,

2013). As a remediation, there is a strong focus in the Mekong Delta on protective strategies such as dyke building, planting of an at least 500 m wide mangrove belt in front of the dyke and forest protection contracts for individual households.

## 6.3 Current mainstreaming efforts

Vietnam is party to the Convention on Biological Diversity (CBD) and the Mekong River Commission. For the protection and sustainable exploitation of mangroves, the following Aichi targets are most relevant: reduce pressures to vulnerable ecosystems, so as to maintain their integrity and functioning (Target 10) and ecosystems that provide essential services are restored (Target 14). By supporting integrated high-diverse mangrove-shrimp production systems, Target 7 (areas under agriculture, aquaculture and forestry are managed sustainably by 2020), ensuring conservation of biodiversity becomes attainable, as well as several other Targets.

Vietnam included mangroves and coastal zones explicitly as 'environmental hotspots' in the National Biodiversity strategy and Action Plan (NBAP; Target 1) up to 2010 and orientations towards 2020 (Prime Minister, 2007). The action plan includes the objectives: to restore 200,000 hectares of mangrove forests (Target 5); the designation of 5 wetlands as Ramsar sites (two of which are coastal mangroves, though not located in the Mekong Delta); to assess the current status of mangrove forests; to restore mangroves important for coastal protection; and to develop and implement national and provincial plans for Integrated Coastal Zone Management. It is unclear to which degree the targets have been implemented, though the potential for mainstreaming mangrove-related biodiversity into governance is high. An updated NBAP is expected by 2015.

The Mekong River Commission (MRC) was established in 1995 by the governments of Cambodia, Lao PDR, Thailand and Viet Nam with the purpose of promoting cooperation in the management and development of water and related resources of the Mekong River. In 2011, the first 'Basin Development Strategy' for the Lower Mekong Basin, founded on the principles of IWRM, has been developed. The development strategy enables the four MRC Member States jointly to set out how they will share, utilize, manage and conserve the water and related resources of the Mekong. The strategy is complemented with a road map for implementation, four national action plans and a regional action plan. The need to identify and conserve biodiversity hotspots is included in the Strategy, and the priorities and actions are assessed against a wide range of social, economic and environmental criteria. Yet, potential risks and environmental impacts raised by actions, mainly related to irrigation and hydropower, are currently researched further. Actions for biodiversity mainstreaming appear limited.

At the local level, diversification at landscape, farming system and field level are important livelihood strategies. Even though habitat restoration and biodiversity conservation is mostly not the main goal, except for specific projects, some livelihood strategies implicitly lead to biodiversity conservation. Integrated approaches have been developed that combine various production systems with adequate forest, water and land management. The success of these approaches partly depends on efforts by individual farmers but also needs other measures

to be up scaled. The first co-management agreement for mangroves, as part of the coastal zone, is set up in the coastal village of Au Tho B (Soc Trang province) in 2009 as part of a 6 year pilot project supported with German development funding (GIZ, 2013a; Schmitt et al., 2013). Here, the local authorities and resource users jointly negotiated rules on the use and protection of mangroves. These rules have been formalised and a mangrove user committee has been setup. All stakeholders have been involved from provincial to local level. Second and third co-management agreements have been signed in the villages of Mo O and Vo Tanh Van in 2013.

## 6.4 Governance analysis

This section analyses the governance dimensions of the framework for mainstreaming biodiversity (Karlsson-Vinkhuyzen et al. 2013) for coastal zone management in Vietnam. The case is one where many sectors are implicated and thus presents a complex governance context.

### 6.4.1 Horizontal interactions

Mainstreaming mangrove biodiversity in coastal zone management is complicated because of the many roles that mangroves play and could play, with various ecosystem services all relevant for many different sectors and actors (Table 1).

### 6.4.2 Vertical interactions

Well-functioning mangroves are strongly influenced by pressures at various scales. While the direct pressures (e.g. encroachment by shrimp farmers) act on the landscape scale (coastal zone), mangrove rehabilitation and protection depends on action at the local scale. The inflowing water quality and quantity have a large, potentially damaging impact on local mangroves and aquaculture, but are governed at the larger (sub-)river basin scale. If mangroves are to be managed as part of an integrated management of coastal zones, consideration of external impacts becomes important (e.g. from upstream water use and pollution to sea waves).

The inflows of water (quantity and quality) at the scale of the Lower Mekong River Basin are regulated by the Mekong River Commission (MRC). Provincial, district and municipal authorities as well as local user committees are involved in the management of the direct pressures on mangroves.

### 6.4.3 Policies and norms

In the buffer zones in the mangrove belt in Vietnam (see also 6.4.6 on framing) 60% of the area must be covered by mangrove forests, according to the government, while the other 40% can be used for aquaculture. Here, farmers can lease a 20-year use right on forest farm land that might be renewed, provided that the farmers adequately protect 60% of the forest cover. Vo (2013) showed that more than half of the region, the mangrove cover was below 30%.

**Table 1.** Actors and interactions that have relevance for mainstreaming mangrove biodiversity in the Mekong Delta in Vietnam.

| Actors | Interactions relevant for conserving biodiversity in mangroves |
|---|---|
| **Aquaculture sector: shrimp farming** | Shrimp farming has high impacts on mangroves; increased expansion of shrimp farming at the expansion of mangroves; integrated shrimp-mangrove systems generate win-win situations; high income generation; many small scale farmers, very few cooperatives. |
| **Shrimp processing companies** | Processing of shrimps and distribution to the market. |
| **Agriculture sector: rice cultivation** | Increasing soil salinity affects rice production; food security; multifunctional rice fields; fertilizer and pesticide residues damage mangrove and shrimp production downstream; role of crop biodiversity (e.g. salt tolerance). |
| **Rural development sector** | Income generation and poverty eradication. |
| **Forest protection** | Mangroves are considered by the Vietnam authorities as forests; mangroves cut down for firewood. |
| **Fisheries sector** | Mangroves as main breeding ground for fish and shellfish. |
| **Coastal protection** | Coastal erosion; sea floods; sea currents and winds inhibit mangrove rehabilitation. |
| **Natural resources and environment** | Environmental sanitation; unsustainable practices. |
| **Public health sector** | Water quality; predators of mosquito larvae and pathogens. |
| **Local communities** | Mangroves are used for harvesting of natural resources (e.g. fish, shellfish, roofing material, firewood, ...). |
| **Mekong River Commission and Vietnam national Mekong Committee** | Upstream activities affect water quality and quantity flowing into the Mekong Delta, in turn affecting the productivity of mangrove forests, rice and shrimps. |

At the basin scale, the basin development strategy and basin action plan (MRC, 2011a) sets out how to utilize the Mekong's water in a reasonable, sustainable and equitable way in each country, including the priority to provide more reliable dry season flows and better wetland management. In the Vietnam national plan (MRC, 2011b), actions have been identified for the Mekong Delta. Yet, a clear reference to mangrove management or coastal zones is not given, even though some actions can have an impact. These are the development of a vision on water resources management, a study to assess the impact of changing upstream flows and the habitats impacted, the development of guidelines for better water use efficiency and water quality management and flood risk and management for the Delta.

### 6.4.4 Interests

Even though mangroves are an important source of natural resources and part of the local livelihood strategies, the beneficial role of mangroves is undervalued by most stakeholders. Recent economic analysis in the Mekong Delta (Vo, 2013) proved that traditional shrimp cultivation yielded 3,200 USD/ha/year and industrial shrimp farming 990 USD/ha/year, mangrove forests bringing net additional economic benefits of 2000 USD/ha/year. Investments for the industrial shrimp farming where high and not risk-proof (Vo, 2013). Disease outbreaks and unsuitable water quality can reduce the productivity in these

systems. In addition to the net benefits for aquaculture, additional benefits were estimated by Vo (2013) at 7,900 USD/ha/year for protection against storms and coastal erosion up to 1 km inland; at 5,700 USD/ha/year for timber provision; and 620 USD/ha/year for carbon sequestration. This is in line with calculations elsewhere, e.g. brackish wetlands in the Mississippi River Delta were estimated to provide between 4,000 and 5,000 USD/ha/year for storm protection and water flow regulation (Batker et al., 2010; Brander et al., 2012) and mangrove forests in Thailand almost 11,000 USD/ha/year for protection against storms (Russi et al., 2013).

Johnston et al. (2000a, 2000b) compare extensive (limited stocking) versus traditional (wild seed only) mangrove-shrimp farming in Ca Mau province, and remark that yields are low in both. Farms with improved management and culturing secondary fish products (e.g. fish and mud crabs) performed better. Same for farms that had fruit trees on the banks of the ponds. Hence, diversification into other fisheries products and cash crops improves the long-term viability of mixed shrimp-mangrove forestry farms in Ca Mau province (Johnston et al., 2000a).

Similar findings from the Mahakam Delta in Indonesia suggest that sustainable intensification, supported by development of social capital, rehabilitation of mangroves and environmental flows, is required to satisfy the multiple demands in this coastal area (Bunting et al., 2013). Bosma et al. (2012) found in Indonesia that shifting from shrimp farming only to a mangrove-based system, shrimp yields were higher, while additional ecosystem services and livelihood contributions could be gained from the mangroves. Tran et al. (2013) demonstrated that mangrove may have a positive impact on income from aquaculture farms: USD 824/ha for mangrove based aquaculture while those without mangrove made less than half (USD 352/ha). These research results imply that the currently practiced monoculture shrimp farming is less beneficial to both individual shrimp farmers and the wider society, when compared to more sustainable mixed mangrove-shrimp farming. Yet, the scientific evidence contradicts the farmers' perception that the conversion of more mangrove land to shrimp ponds will further increase income. As a result, shrimp farmers are difficult to convince about the net benefits of mangroves, in particular as contributing to raised productivity in shrimp farming, but also other societal benefits. Until they understand the impact on productivity, and for instance their advantage in reduced costs of (failing) coastal protection, the shrimp farmers may be difficult to engage in the protection and rehabilitation of mangroves.

### 6.4.5 Values

The sound functioning and sustainable management of mangrove ecosystems depends on a large number of sectors at various scales, each with different visions of which objectives are most important (valuable) to achieve. In addition, the impact of particular stakeholders' actions on mangroves is insufficiently recognised and understood.

The protection that mangrove forest offers - or more specifically the lack of protection without mangroves - to storm surges and sea floods, though recognised by farmers, is not considered as a risk in their business model and if they see non-economic values in mangroves this does generally not influence their choices. In former mangrove rehabilitation

projects, households were paid to protect mangroves. Yet, this practice is not found sustainable, since not all stakeholders can be included (Pham, 2011).

The impact of upstream water use, e.g. for irrigation and hydropower, on mangroves and even on the Mekong Delta is insufficiently understood, but identified as a risk, given the experience from similar upstream developments in other river basins. Likewise, the impact of saline water intrusion, due to sea level rise, or sea floods, has potentially negative impacts on shrimp productivity.

### 6.4.6 Framing

Some mangrove forests have received national legal protection in the Mekong Delta. The mangrove belt in Vietnam is divided in three main land use zones: 1) full protection zones (near the coast); 2) buffer zones; and 3) economic zones (including production forests). For the national government, an important reason to conserve mangroves is the important role these forests play in protecting the coast against erosion through storms and waves, thus reducing the impact of floods and tsunamis. Artificial coastal protection infrastructure would be much more expensive. For local communities, mangroves provide valuable livelihood resources, such as firewood and fish, while for shrimp farmers, the trees obstruct the expansion of their ponds. Vo et al. (2012) found that farmers are able to stretch the limits of the zones set by the authorities and exploit the mangrove forests. There is thus a diversity of frames in which mangroves fit, depending on the stakeholder and policy, ranging from coastal protection and essential resource provisions to obstacles for economic activities. Not all of these frames are effective.

### 6.4.7 Leadership

In the Mekong Delta, leadership for addressing biodiversity is shown at several scales. At the river basin scale, the MRC is one of the good practices on trans-boundary and inter-sector cooperation in the developing world.

Locally, a pilot project ran for 6 years in the Soc Trang province, is a leading example of how co-management of mangroves can work in practice. Co-management in the Soc Trang province has proven to be effective for mangrove management and income generation. The signing of a formal co-management agreement between local stakeholders and the local authorities (province, district and municipal across sectors) and the setup of a local user committee and farmer cooperatives are important steps in which leadership has been demonstrated. In turn, the agreement also generates responsibility and ownership among the parties to implement it. The project is led and funded by German Development Aid (GIZ) that plays the role of the catalyst in this process.

### 6.4.8 Knowledge

Mangroves provide multiple services to the community and have net economic benefits. Yet, insufficient understanding exists on the value of mangroves and the consequences of unsustainable practices. Current knowledge and information is largely sectorial and insufficiently shared with other sectors. Stakeholders are often not aware of the challenges and information needs of others. Likewise, the consequences of actions (or lack of actions) on other sectors or stakeholders is often not understood. Substantial scientific knowledge on mangrove management appears to be rarely used in the daily practice of mangrove

management, including authorities. Similar experiences have been observed in efforts to facilitate integrated wetland management (Cools et al., 2013).

Shrimp farmers are often not aware of alternative approaches, such as integrated mangrove-shrimp cultivation and its benefits and risks as compared to current farming practices. For instance, it is perceived that an integrated shrimp-mangrove system, due to the need for a larger area, offers less income than intensive shrimp farming (Vo, 2013). The benefits of mangroves to aquaculture farmers (see section 6.4.4 on interests) are insufficiently known.

### 6.4.9. Time

The pilot projects on co-management in the Soc Trang province are expanding, though the precise timeline is not known. The action plan for the Mekong Delta runs until 2015. No timing is known for the development of the vision on water resources management (quantity and quality) in the Delta and on the plans with respect to coastal management.

The payback period for traditional shrimp pond systems (using natural tidal inflow for recruitment of juvenile shrimp and crabs, without using seed or chemicals) in the Mahakam delta in Indonesia was more than 35 years, making these not economically viable (Bunting et al., 2013). Still, these farming systems were practiced, as the risks were perceived as being low. Extensive (using active stocking, pesticides and fertilizer) and integrated mangrove-shrimp (80% mangrove cover) systems performed better, with pay back periods between 1 and 4 years, though income from selling mangrove wood and cuttings would only start after 5 years (Bunting et al., 2013). Mangrove forests can be sustainably exploited at a 30 year rotation, thinned out at 15 and 20 years, when timber products could be sold (Gan, 1995).

### 6.4.10 Financial resources

Funding for governance of mangrove biodiversity in the Vietnamese coastal areas is mainly provided to develop co-management structures and build institutional capacity. In low income countries, investment cost are ideally kept low, using local materials such as bamboo breakwaters to control erosion. Development of dissemination material and strengthening of the knowledge base is labour intensive. Limited implementation of action plans and national policy is partly related to lack of funding. It is however unclear where funds could come from, e.g. the MRC, national government, NGO's, development aid, farmers, or the private shrimp sector?

Benefits that mangroves offer to society (see section 6.4.4 on interests) are undervalued by many users, authorities and private sector. A well-managed mangrove belt protects the coast from erosion and the impacts of strong winds and waves and provides people with natural products such as fish, shellfish, firewood, roofing material etc. Mangroves are also an important breeding ground for many types of fish, crabs and shrimp (MRC, 2010). However, a large share of these net benefits are related to public costs and benefits and may not immediately lead to increased incomes for shrimp farmers.

The benefits for coastal protection are acknowledged by local communities, but damage by storms is unpredictable and often not considered. Coastal protection works furthermore are mostly publicly paid and have no direct budgetary impact on farmers.

## 6.5 Effectiveness and legitimacy of governance

Mainstreaming of mangroves in coastal zones has shown to be effective in a pilot project on co-management in the Au Tho B village (Soc trang province) (Schmitt et al., 2013; Visseren-Hamakers et al., 2007). The co-management approach, shared with multiple stakeholders, as part of a broader frame of integrated coastal management has created legitimacy and resulted in multiple benefits, including the protecting of the mangrove forest belt and related ecosystem services, providing more income to local communities and resulting in better local governance of natural resources.

As part of the co-management approach, inter-sectoral steering committees at provincial and district level have been setup in order to build support from all sectors and levels (see section 4.2 on vertical interactions). At the local scale, farmers' concern and actions are to be coordinated in farmer co-operatives. At the district and provincial scale, coordination mechanism are set up. The Soc Trang example can be considered as good practice, yet on long term, after the projects' end, uncertainty may raise on the continuation of the coordination structures if they are not up-scaled and transformed into permanent bodies. The real test of effectiveness of the co-management approach and integrated shrimp farming is if it can be up-scaled to cover larger areas in these provinces and beyond.

At river basin scale, the efforts by the MRC are considered as good practice in trans-boundary IWRM. At larger scale however, the number of stakeholders are exponentially larger and so are the potential conflicts, urging for the need for effective multilateral cooperation as provided by the MRC. The mitigation of impacts from upstream water users on the downstream Mekong Delta is challenging and often considered to be out of reach for local communities.

## 6.6 Synthesis

### 6.6.1 Diagnostics: levers and barriers of change

The potential for mainstreaming mangrove biodiversity in coastal management is high in Vietnam, but challenging to implement. The analysis has highlighted barriers and levers in various governance dimensions for the mainstreaming of mangrove biodiversity in coastal zone management (Table 2).

Mangroves provide a wealth of ecosystem services to various stakeholders, ranging from coastal protection, more diverse aquaculture (lower risk and higher income) and breeding grounds for fish and shrimp species. However, mangroves are also impacted by actions from numerous sectors at local, regional and global scale, including the encroachment by shrimp farmers, reduced dry season flows (because of hydropower and irrigated agriculture), increasing pollution, reduced upstream sediment inputs, coastal erosion, flood and drought risk, saline intrusion and sea level rise.

Considering the many involved stakeholders and associated potential conflicts, effective coordination and cooperation mechanisms within the public sector, but also with the private sector, substantial institutional capacity at all scales and sectors and the active engagement

of local users are needed for mainstreaming of mangrove biodiversity (Smith et al., 2013). The enabling institutional environment in Vietnam is to a large degree present. The comparatively advanced institutional capacity of Vietnam sector authorities are signatory to several biodiversity agreements and have a specific policy regulating land use zoning in mangrove belts. For freshwater management, the cooperation and coordination mechanisms across sectors and scales are implemented under the Mekong River Commission. Coastal zone management is currently being implemented at pilot scale in the Soc Trang province, by means of a co-management approach. A main barrier is the potential lack of implementation and enforcement of existing policy and action plans.

On-going project-based pilot cases demonstrate concrete win-win options on integrated shrimp-farming and coastal management. Essential hereby is the involvement of stakeholders who have played a role in the degradation and destruction of mangroves, such as vulnerable groups and shrimp farmers. The set-up of farmer cooperatives and local mangrove user committees are effective means to coordinate the large number of respectively small-scale farmers and local resource users. The implementation of formal co-management between the public sector and the local user committee has proven to be an effective mechanism for cooperation and coordination.

Finally, current knowledge and information is largely sectorial and insufficiently shared with other sectors, resulting in misconceptions on the net benefits of mangroves and limited awareness of the consequences of actions (or lack of actions) on other sectors or stakeholders. The substantial bodies of scientific knowledge on mangrove management appears to be rarely used in daily practice of mangrove management, including authorities.

### 6.6.2 Options for strengthening mainstreaming

The mainstreaming of mangroves in coastal management requires a combination of governance, green infrastructure with ecosystem-based engineering measures and information exchange. Agro-environmental measures include the implementation of integrated shrimp-mangrove cultivation, as evidenced by cases in Vietnam (Vo, 2013; van Halsema, 2012; Johnston et al., 2000a, 2000b) and Indonesia (Bunting et al., 2013; Bosma et al., 2012; Wood and van Halsema, 2008; Wood et al., 2008). An integrated shrimp-mangrove farming system simultaneously reduces risk for farmers, while increasing food security, biodiversity and flood protection. Certification of shrimp farming practices could be further explored and implemented (GIZ, 2013b). Another engineering measure is the rehabilitation, replanting and sustainable exploitation of mangrove forests. Data sharing and information exchange on good practices can raise awareness on mutual interests, benefits and challenges and are important conditions to create trust with stakeholders.

Institutional measures include the development of more effective coordination and cooperation mechanisms. Important hereby is the effective and active involvement of local users of the mangroves. The pilot project in the Soc Trang province has demonstrated how co-management of mangroves can work in practice. The local authorities and resource users jointly negotiated rules on the use and protection of mangroves. Subsequently, these rules have been formalised and a mangrove user committee has been setup. The next step is to monitor the functioning of these arrangements and evaluate whether these can be scaled up.

**Table 2.** Barriers and levers for mainstreaming biodiversity in mangrove management in Vietnam.

| *Cross-cutting elements / Dimension* | | Potential for change | |
|---|---|---|---|
| | | **Barriers** | **Levers** |
| Institutional | **Horizontal and vertical interactions** | - Lack of political support from all sectors and all levels.<br>- Large number of small scale farmers may not be interested due to a perceived low returns.<br>- Mangroves are rarely managed at the landscape scale (coastal zones).<br>- Upstream development (e.g. hydropower and pollution) might affect quantity and quality of water flows to mangroves in the Delta.<br>- Unclear modalities (implementation, responsibilities, funding) of the basin action plan. | - Formal co-management agreement between all parties, including a user committee at commune level.<br>- Inter-sector steering committees at provincial and district level; inclusion of mangrove management in sectoral plans.<br>- Local scale: Negotiate user needs and rights of farmers into approach and setup of farmer co-operatives.<br>- Coastal zone: setup of co-management between authorities and resource users.<br>- River basin scale: Development of a vision on the water and natural resources management of the Mekong Delta. |
| | **Policies and norms** | - The Action Plan for the Mekong Delta covers biodiversity and water availability, but is not directly addressing mangroves.<br>- Weak policy on forest protection. | - Inclusion of mangroves in existing plans.<br>- More enforcement and institutional capacity building to implement and monitor existing policy<br>- Certification of shrimp farming practices. |
| Motivational | **Interests** | - Limited understanding of benefits from mangroves beyond shrimp cultivation.<br>- Limited institutional capacity and funding to upscale pilot projects. | - Awareness raising and demonstration of the mutual benefits to farmers, local communities and local authorities.<br>- Increased institutional capacity. |
| | **Values** | - Intensive and unsustainable aquaculture generates high income in the short term for individuals, but may lead to high risks for the community. | - Demonstration of benefits of mangrove protection to users in agriculture, rural development, water and coastal management. |
| | **Framing** | - Low awareness of the multiple benefits of mangroves for coastal protection and farming.<br>- Zoning of mangroves into full protection, buffer and economic areas leaves space for farmers to exploit mangrove forests and gain more income. | - Specific conservation framework for mangroves, e.g. as protected forests under Vietnamese law and as wetlands under the Ramsar Convention.<br>- Coastal protection is important reason to conserve and protect mangroves.<br>- Incentives for farmers to better protect mangrove forests (e.g. conditional loans). |
| | **Leadership** | - Management of coastal zones could depend on few individuals, e.g. farmers closest to the ocean, whereas commitment of all stakeholders is needed. | - Local leadership and the development of local mangrove user committees. |

**Table 2 (continued).**

| *Cross-cutting elements / Dimension* | | Potential for change | |
|---|---|---|---|
| | | **Barriers** | **Levers** |
| Means | **Knowledge** | - Existing knowledge and information is largely sectoral and insufficiently shared with other sectors.<br>- Scientific knowledge difficult to use in daily practice. | - Dissemination of good practices and awareness raising on the multiple benefits of mangroves.<br>- Pilot projects: solid evaluation, data sharing, exchange visits. |
| | **Time** | - Non-synchronous policy cycles in different sectors; seasonal cycles in shrimp farming and mangrove biodiversity but mangrove life cycle 30 years. | - Harmonised timing on the development and publishing of action plans.<br>- Alignment with the time horizon of intensive and sustainable shrimp farmers (payback periods 1-4 years, mangrove products available after 5 years). |
| | **Financial resources** | - Lack of implementation due to lack of funding. Unclear where funds would have to come from.<br>- Development of dissemination material and strengthening of the knowledge base is labour intensive. | - Action plan for integrated mangroves /coastal zones management developed and budgeted as part of overall institutional budgeting.<br>- Funding for governance is mainly related to develop co-management structures and build institutional capacity. |

For the coastal zone as a whole, including the mangrove belt, an action plan needs to be developed and budgeted as part of overall institutional budgeting, with the involvement of stakeholders from all scales and sectors. Mangroves should be explicitly included in updated sector plans, in agreement with the national coastal management plan. The Action Plan for the Mekong Delta (MRC, 2011b) covers freshwater biodiversity and water availability, but is not directly addressing the brackish water zone, and therefore not the mangroves, despite the impact that changing upstream flow regimes have on the coastal zones. More research is required into how the interests of aquaculture, coastal protection, mangrove management and upstream irrigated agriculture can be coordinated better. With such knowledge a better understanding can be developed on the impact of the changing upstream water use and pollution on the coastal zones and consequently adequate management actions proposed.

A classical problem in the integration of policy domains are the non-synchronous policy cycles in different sectors and limited vertical and horizontal cooperation. The Ramsar critical pathway approach is designed to integrate wetlands in river basin management and could also be considered to integrate mangroves in the policy cycle of water and coastal management (Ramsar Convention, 2008; Rebelo et al. 2013). Crucial to each action plan and policy are mechanisms for effective monitoring, evaluation and enforcement.

### 6.6.2 Insights gained for mainstreaming in water management

The framework for mainstreaming biodiversity has helped to analyse options for enhanced coordination between local farmers and higher level authorities in the coastal areas of Vietnam, demonstrating that realistic opportunities exist.

In Vietnam, mainstreaming mangrove biodiversity in coastal management and local aquaculture practices requires a combination of governance, engineering measures and information exchange. Considering various external (e.g. climate change, upstream development, population growth) and internal (e.g. existing farming practices and governance structures) factors, we identified a high potential for sustainable management of the coastal zone. This would enhance multiple ecosystem services to individual farmers and local communities, as well as reduce costs at regional level (e.g. for coastal protection). Demonstration projects have shown that this is possible but requires more knowledge on benefits, involvement of stakeholders at local level, and coordination between various sectors at all levels, up to regional (river basin) level. Multi-functional landscapes are typically confronted with various challenges and involve stakeholders from all levels and sectors.

The involvement of local stakeholders and local plus district level authorities is necessary to gain trust and create ownership. The co-management project in the Soc Trang province is a good example of a local structure that could be added to existing IWRM institutions. It has demonstrated the need to give responsibility and user rights to local users. In return, obligations on mangrove rehabilitation and sustainable use can be asked for.

We conclude that mainstreaming requires measures to be taken by different sectors and different scales. Care must be taken to address potential trade-offs, conflicts, or synergetic effects that measures could create. External impacts may need to be mitigated, where possible, and local adaptation measures could be developed.

Mainstreaming biodiversity in water management requires, because of the cross-sector nature of biodiversity and its impacts, better exchange of information between sectors. Often stakeholders and sectors are not aware of the impacts of their actions, or even of the information they need to decide on actions. Improved access to scientific information from other sectors will benefit public decision-making and thus result in better governance.

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## Acronyms

| | |
|---|---|
| CBD | Convention on Biological Diversity |
| GIZ | German Development Aid (Deutsche Gesellschaft für Internationale Zusammenarbeit) |
| GWP | Global Water Partnership |
| ICM | Integrated Coastal Management |
| ICZM | Integrated Coastal Zone Management |
| IWRM | Integrated Water Resources Management |
| MA | Millennium Ecosystem Assessment |
| MRC | Mekong River Commission |
| NBAP | National Biodiversity strategy and Action Plan |
| NIP | National Indicative Plan |

# Chapter 7. Comparative analysis of mainstreaming biodiversity in five cases of sector governance

Sylvia Karlsson-Vinkhuyzen and Marcel Kok

## 7.1 Comparing cases

In this chapter we draw together the insights gained from the five cases of potential mainstreaming of biodiversity in production sectors with a particular focus on converging and diverging factors that provide barriers and levers in the ten governance dimensions we used in the analysis. Table 1 below provides a comparison at a glance that will be further discussed in the following three sections. Then follows a section discussing the comparative analysis with regard to effectiveness and legitimacy of governance before the concluding overview of how our results relate to previous insights on what works and does not in mainstreaming.

## 7.2 Structures and institutions: (Inter-)governmental policies, norms and actions still set the stage

The five cases make it abundantly clear that governments and the policies and norms that they adopt and the actions they take still play a big role both for which options that are available for other actors in sectors to take biodiversity friendly action and how attractive these options are. It is particularly their role as norm developers – as those that develop the basic rules of the operating space of sectors that come to the fore. We discuss this for the global and national level of governance respectively.

### 7.2.1 Global hard and soft law

The density and character of international or global norms and policies in the different sectors differ. In those cases where the products in the sector are subject to international trade the rule system for trade provides the basic constraints for what governments and other actors can do in terms of biodiversity policy. One aspect of the trade regime is that they do not allow any discrimination of products that are linked to how they are produced. This makes it difficult for governments to adopt measures that could be seen as preferential treatment or trade barriers for products due to the biodiversity implications of how they were produced or harvested. This has left the space open for non-state actors to adopt voluntary norms, recognised through certification schemes with labels that support what is claimed to be more sustainable production and harvesting systems. A collective-self imposed rule barrier for government action has thus become a lever for leaders in the market to take action in favour of biodiversity and other sustainability criteria (see further discussion on this below).

Similarly private international rules may constrain the actions of parties to foreign direct investment contracts and thus the ability of the investors (often government linked financial actors) or the receiving governments to bring in biodiversity concerns in

**Table 1**. Summary of levers for mainstreaming identified in five cases of governance in production sectors.

| Potential for change — levers | | |
|---|---|---|
| Governance dimension category | Institutional | - Creating private-public synergies<br>- Organizing deliberations between stakeholders<br>- Creating linkages – cross-references – between environmental (biodiversity related) standards at different levels.<br>- Governmental support for non-state led certification schemes including in international (law) and national norm development (e.g. procurement)<br>- Finding the right level of ambition in mainstreaming measures for (measures having biodiversity impacts yet up-scalable to many actors)<br>- Establishing new accountability mechanisms between market and industry gives strong push for policy implementation across levels.<br>- Voluntary norms such as codes of conduct<br>- Institutional Formal local co-management agreements among resource users and other stakeholders supported by institutions higher governance levels that share a vision for the region |
| | Motivational | - Income opportunities from mainstreaming measures, also from specially created incentives (access to markets etc.)<br>- Market pressure creating a threat to producers or investors and shareholders to lose their 'license to produce' or reputation<br>- Framing label or Codes of Conduct as granting access to market and a win-win option that aligns values<br>- Forerunners showing that certification is possible and viable<br>- Leadership that can emerge from various actors, public-private, local-national-global, based on interests or deeper values |
| | Means | - Independent scientific research to increase knowledge about production-biodiversity linkages with and without certification<br>- Awareness raising and demonstration of benefits of biodiversity to stakeholders showing cross-sectoral benefits<br>- Solid evaluation, data sharing, exchange visits in pilot mainstreaming projects<br>- Knowledge available and shared between parties enables open and transparent labelling process creates learning opportunities<br>- Enforcement and institutional capacity building to implement and monitor existing policy<br>- Institutionalising longer time horizons in norm development, contracts etc. and aligning time horizons in planning among relevant stakeholders across governance levels<br>- Funding for governance of mainstreaming initiatives, building institutional capacity and implementing action plans<br>- Multistakeholder initiatives seeking funding from international donors for joint implementation<br>- Private sector funding resources is fundamental in production sectors where they are major investors and often first movers |

such contracts. Thus we can find barriers for more proactive governmental action at the national level for biodiversity in the form of legally binding (hard law) norms in both global public and private law.

At the same time our study highlights several examples where international hard laws (treaties) already support the integration of biodiversity concerns in production sectors and that can play increasing roles as levers for stronger integration. One example is the regional fisheries agreements that provide a necessary backdrop for the certification of specific fisheries (metiers). The MSC has as condition for accepting certification that there exists a functioning regulatory framework.[22] Another example is the United Nations Framework Convention on Climate Change (UNFCCC) that is on the way to develop rules for REDD+.

There is also an abundance of non-legally binding international norms (soft law) adopted either jointly by governments (such as the UNFF guiding principles on forests) or under the auspices of a UN organization (the FAO code for FDI, the FAO Code of Conduct on the Production and Use of Pesticides) that could, if adhered to, serve as levers for both state and non-state actors in particular aspects of sector governance. These examples also show that the voluntary norm route is very much open for joint action by governments and intergovernmental organizations.

In the context of biodiversity the CBD provides the overarching legal normative framework with the long term vision of conserving biological diversity and has been operationalised for the 2020 time horizon through the Aichi targets. A number of other Multilateral Environmental Agreements provide more detailed legal protection for particular species. The Aichi targets, while coming out of a treaty still as decisions of the CBD Conference of the Parties (COP) constitute the soft law approach to global governance – the kind of aspirational goals that are meant to galvanize action. Still, these targets are in many respects much more specific than the CBD text itself and this precision strengthens the ability to evaluate the progress in achieving them (or its absence) something that is usually confined to harder(er) law.[23]

The reality of production sectors are, however, largely aligned to other values than biodiversity (see below) and the reality of the Aichi targets is that they have been standing somewhat alone and insulated from some other global normative frameworks such as the Millennium Development Goals that more explicitly seek to align the social and economic prerogatives with those of the environment. However, in the draft Sustainable Development Goals that are set to be adopted by the end of 2015 the importance of biodiversity is much more recognised and some of the Aichi targets have been incorporated. Another relevant framework is that of Sustainable Production and Consumption (SCP) that was an objective laid out in the World Summit on Sustainable Development in 2002 and operationalised

[22] This is contained in Principle 3 "*The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable."*

[23] For a discussion on the role of precision in international norms see for example Abbott and Snidal (2000) and Franck (1990).

through a 10 year framework of programmes for the international community to run from 2012 to 2022 although this has attracted much less attention than the SDG process.[24]

### 7.2.2 National laws and policies

There are multiple links between national laws, policies and actions and the potential for mainstreaming within production sectors. The most important clusters of barriers come with weak institutions that are not able to enforce existing laws thus opening the space for e.g. illegal fishing and logging. But as constraining as lack of law enforcement can be the non-implementation of good sustainability policies, as the example from the multilevel governance situation of the Mekong case showed. It is not only national institutions that need the capacity to formulate and implement policies; also local institutions can have a big influence. The weak local institutions in the palm growing areas pose a significant barrier for any certification scheme and absence of effective fisheries management schemes prevent fisheries from the chance of obtaining certification.

On the more positive side government policies can be significant levers for sector based mainstreaming.

- Firstly, on a fundamental level the government can influence the basic rules for companies whose business model needs biodiversity in a direction that makes their models more viable. The setting up of co-management approaches in the mangrove areas of Vietnam is one example of this. Another one is of course the development of policies and laws that prevent out fishing and permanent forest degradation or land deals that do not consider biodiversity impacts.
- Secondly, there are certain tasks that only governments can perform that are important for mainstreaming on a landscape level in production sectors; land use planning and ensuring clear property rights as well as coordination and cooperation mechanisms between stakeholders. The FDI in land case illustrates what can happen when this lever is not used.
- Thirdly, governments can support the voluntary certification efforts for particular (sets) of products/crops through a number of policies. Procurement policies that favour certified products help to stimulate demand. Tougher legal criteria for production sectors will lower the threshold for them to apply for certification.

### 7.2.3 New actors and new linkages opens more doors

The governance context of production sectors, the fact that multiple types of actors from different levels have important roles to play in efforts to address biodiversity, creates the potential for many new linkages that could open doors for different strategies of mainstreaming. In a sense it provides complexity that has been captured in the concept of polycentric governance (Ostrom, 2005). In local and regional settings the collaboration between diverse stakeholders through cooperative management mechanisms enables integrated approaches for conserving biodiversity at a landscape level in a way that supports local livelihoods. It works in the mangroves zones of Vietnam and elsewhere, it could be an approach to use around land investments of common lands. Connecting actors that depend on the same resources is a powerful means of mainstreaming the conservation of that resource.

[24] http://sustainabledevelopment.un.org/index.php?menu=204

Vertical connection of consumers and producers through certification has become a common option for promoting the integration sustainability criteria in global value chains and through these ensuring more sustainable production systems. These linkages provide agency to both producers and consumers who do want to take proactive action, they can choose another course of action compared to the business as usual. Although implementation of certification schemes is still relatively limited in terms of volume and subject to significant regional bias in terms of coverage on the production side and demand on the consumption side, they are promising levers for biodiversity mainstreaming. The presence of sustainability criteria is by itself a significant lever, as creating them are costly, and lowers the threshold for improving their specificity and effectiveness as tools for biodiversity conservation. However, the creation of linkages between individual producers and a multitude of consumers who have to choose for a specific label is also costly and inefficient. Expanding the volume (and thus area of production) of certified products could be significantly speeded up by short circuiting the value change by retailers taking the decisions for consumers, transferring the label from a niche product to a license to produce.

## 7.3 Motivations

### 7.3.1 Values and interests that constrain and enable

In those cases when forest dwellers make a living from non-timber products of a diverse forest system, when logging companies and fishing fleet look at the harvest potential in a few years time, or when small holder farmers, shrimp farmers in the mangroves belt or fishermen in small and big waters depend on biodiversity there is a strong potential alignment between their long-term economic and livelihood interests and those of biodiversity. Often, however, what block the realisation of this potential alignment are motives of short term benefits. Such ‘short termism’ is a value that provides a systemic barrier towards broader sustainable production and consumption systems. This rather obvious barrier is present also on the consumer side where values in support of sustainability may be subsumed under finding the lowest prices.

On the other hand it is the widespread appreciation for biodiversity and environmental sustainability more broadly and among the leading actors (NGOs and businesses) that have enabled the drive for voluntary certification of products. It is such values that will continue to be an essential lever for new actors taking up the torch of proactively integrating biodiversity concerns in the way they produce and consume food, fibre, wood and energy. For producers the attraction towards certification can be further strengthened by the premium price, the improved image it gives or more fundamentally the license to produce that it may increasingly require at least for certain products in certain markets. Indeed, when actors on the demand side, individual consumers or retailers for them, become so consistent in requiring that production processes pay attention to biodiversity concerns and related sustainability criteria that they take away the market for business that do ignore these, then they may have considerable influence on the sector. Such consumer demand as lever is not so easy to ‘use’; it will require a number of different measures in education and awareness raising (see strategy section below).

The palm oil case shows that conflicting interests and frames among stakeholders can be a lever for biodiversity if it becomes part of a package deal, in this case certified palm oil. Clearly many of the stakeholders in the global roundtable did not have biodiversity as primary frame. Yet the dialogue process enabled diverse interests to be acceptable when taken together with a certification processes that give added value for all. However, diversity of values for what sustainable production is can become a barrier for mainstreaming in the case when competing certification schemes lead to a race to the bottom. The cases do not show clear evidence for this to happen yet but there is a risk both in the forestry and palm oil case.

The FDI in land case illustrates the potential for biodiversity to fit several frames; local commons remaining in local hands for diverse uses and intensified agriculture with increased production enabling saving land for biodiversity elsewhere. One challenge here is that practically no actor is speaking out for biodiversity per se. While the pursuit of other objectives within diverse frames could benefit biodiversity it likely to be possible to do even more with explicit attention to this issue.

### 7.3.2 Leaders with a passion and patience for biodiversity

Leadership is necessary for mainstreaming processes to get on the agenda, for action to be initiated and for consistent implementation but leaders need particular skills and need to take on particular tasks at different stages of the process. In the start-up phase it takes strong leaders with convening power and passion to bring together unlikely groups of stakeholders around what can become a common vision for joint action. The certification cases vividly illustrate the influence that actions of NGOs like WWF and companies like Unilever can have. The less visible leadership of the researchers that can show the economic value of integrated shrimp farming is no less important as is the examples set by collaborating in co-management structures set up in the mangroves.

When a mainstreaming process is in process, such as the case with the certification schemes, there is need for leaders that take on different tasks compared to the initial agenda setting phase. Firstly, there is need for those that support expansion of certified volume either working on lowering the barriers for producers to step in or on the demand side creating awareness and a market among retailers and consumers. Here major retailers have showed leadership, vowing for 100 % certified products in some cases, rapidly speeding up the demand. Secondly, there is need for leaders that operate more on the detailed aspects of ensuring that the biodiversity criteria in the certifications are strengthened. Such works requires patience and long-term commitment, and leaders need to be able to establish serious linkages with the research community.

## 7.4 Resources

### 7.4.1 Finding time and resources

The research carried out for this study did not get into sufficient depth to be able to analyse the resource issues properly. What is clear is that a major barrier for expanding certified areas across all sectors is the time, financial resources and technical knowledge (for small holders) it costs for producers to become certified whether in forestry, fisheries or palm oil.

Lack of resources is also a major barrier for widening the knowledge base needed for trust building and accountability (see below). In contrast stands the expectations of financial flows into REDD+ that could benefit biodiversity if wisely used as discussed in the forestry case. This would indeed be a significant lever for mainstreaming. Lack of funding is also a constraint in the case of co-management in the coastal zones of Vietnam where project based funding from a bilateral donor is a short-term limited solution and it is unclear where resources could come to implement the region wide plans related ti integrated water resource management and biodiversity.

### 7.4.2 Knowledge for building trust

In every certification case included in our study it is clear that there is a weak knowledge base for evaluating the effectiveness of certification for biodiversity. While it is possible to establish to a certain degree whether particular fish species subject to certification is reaching healthy population levels, or whether logging is reduced in certified forests, the wider implications for biodiversity in these ecosystems is not known. Furthermore, in the case of forestry the presence of certified forests primarily in regions where forest laws are relatively strong makes it unclear if certification brings any added value for biodiversity (see discussion on effectiveness below). This weak knowledge base could become a major barrier for a continued trust in the labels among consumers. The voluntary certification approach is built on a series of accountability relationships between producers and certifiers, certifiers and consumers etc.

In other situations valuable knowledge that could support mainstreaming is available but not in the hands of those who need it. The case of shrimp farming in the coastal areas of Vietnam illustrates how knowledge on win-win options for biodiversity and profitability may not be accessible for producers. Here research has shown that it is more profitable for shrimp farmers to integrate their farm with existing mangrove vegetation. Furthermore, lack of sharing and exchanging knowledge across sectors constrains mutually beneficial cooperation strategies at the landscape level for example in mangrove areas.

## 7.5 Effectiveness and legitimacy

Legitimacy, the perception that the authority of an entity such as an institution or norm is justified, can as was discussed in chapter 1 have multiple sources clustered into two categories; input and output legitimacy. Input legitimacy can include who can participate in decision-making, how transparent the process is, the systems of accountability, the reliance on scientific or types of relevant knowledge etc. Output legitimacy as a concept overlaps with effectiveness, the impact of governance on problems it seeks to address, but can also include particular aspects of such output such as equity.

Looking closer at the dimensions of *input legitimacy* that come to the fore in the five cases, it is clear that inclusiveness in participation, transparency and at least the possibility to hold actors to account is important for not only the normative legitimacy of these processes but linked to this but also the sociological (empirical) legitimacy for some the involved stakeholders and thus their potential effectiveness. The multi-stakeholder character of the certifying bodies (e.g. FSC and MSC) is a condition for the support from the relevant actors.

Indeed, the exclusion of governments in the RSPO (palm oil) can make the body illegitimate for a government. The involvement of many sectors and levels in the co-management approach in the Soc trang province of Vietnam ensures broad support but even here there are actors far upstream who are out of reach for these efforts to manage mangrove forest sustainably. The vertical linkages through intergovernmental institutions are not strong enough to provide local actors security from negative impact from actions further away. Lastly the complete in-transparency, often secrecy, of decisions over FDI in land will make it an extremely challenging arena for any type of mainstreaming effort. The lack of possibility for any stakeholders beyond the host government and the investor to know what is at hand provides what seems as an unsurmountable obstacle, unless at least one of the two actors making an agreement over land acquisition start considering criteria for biodiversity and other impacts.

The certification approach to mainstreaming is centred around the creation of new accountability relationships. Producers who were once accountable only to the governments in whose territory they operate become accountable to businesses downstream in the supply chain and consumers close and far away. It is costly for producers to join the new part of the market that certification involves but an impressive number of producers have done so, clearly considering these certification bodes as legitimate authority holders in the market place. Still, the vast majority of harvesters of wood and fish, and particularly in tropical latitudes and developing countries stand outside. The willingness and possibility for these to join will heavily influence the output legitimacy and thus effectiveness of certification. On the one hand certified areas have to be greatly expanded particularly in these regions where biodiversity is mostly threatened if it is to claim considerable effectiveness in positive impacts for biodiversity. On the other hand the exclusion of producers in developing countries, particularly small-holders, from the benefits of certification raises issues of equity. Ultimately, it is the legitimacy of measures for e.g. biodiversity conservation in the global value chains in the eyes of its consumers (individual and collective) that will create the demand for their products. Looking at the cases that use certification as a mainstreaming tool for biodiversity the rapid growth in certified area (forest and palm oil) and number of fisheries indicate that these are legitimate ways of producing food for many consumers, indeed for some retailers certification has become essential as a license to produce. They decline to sell non-certified products. In contrast there are many markets where certified products are marginal if present at all, indicating a lack of interest either by individual consumers and/or the major retailers that could make them accessible.

In those markets where certified products are available and in demand, it is unlikely that consumers know much about the institutional set up and development process of the certification criteria, nor do they know much about the output of certification. They may trust the organizations that stand behind the labels or take their authority for granted — referred to as cognitive legitimacy, see Suchman (1995) — but this is likely to be linked to expectations of *effectiveness* as part of *output legitimacy*.

Beyond the compliance procedures of the certification organizations evaluation of the contributions of certification to biodiversity conservation relies on scientific research and this is until now quite limited and what little there is, is not giving a consistent picture, as discussed for example in the forestry chapter. Therefore, the key actors closer to the

certification process, the international NGOs, the business organisations the governments (in some cases) that support it, cannot claim to have a solid scientific basis for supporting certification. But they do have clear indicators from experiences built up and from some scientific studies that it is moving production in a more sustainable and biodiversity friendly direction. The good intentions of certification and the principles and criteria they embody are clearly given the benefit of time to prove themselves effective.

In the case of mangrove management in coastal areas of Vietnam there are a number of plans and policies that support an integrative approach to coastal and water management, one where biodiversity is also considered but the status of their implementation is not known. Local experiments of co-management have proved very effective using inter-sectoral steering committees at provincial and district levels to build support across levels and sectors. The crucial question for effectiveness, however, is whether this co-management approach can be up-scaled in the region and what it would take to do so.

In the case of FDI in Africa where no efforts have been made to mainstream biodiversity it is only possible to speculate about effectiveness of potential future strategies of mainstreaming through, for example, adhering to existing or relevant standards for responsible investments or developing new ones. In essence this means relying on soft laws having influence on the contracting parties. Considering the lack of transparency in these agreements (see above) and the more complex accountability relationships as well as low 'consumer demand' for sustainability issues in many of the countries where investors originate, it seems unrealistic to expect such a route to be very effective (see further also chapter 8).

Beyond the aspired positive impact on biodiversity a normative analysis of output legitimacy can also include aspects of equity impacts. It seems clear in the certification cases that this route of mainstreaming run the risk of benefitting already resource strong actors unless substantial support is provided for smallholder producers to enter the certification process. The strong focus on human rights issues in the debate on FDI in African land makes it unlikely that any measures for including biodiversity concerns in proposals for voluntary norms would come at the expense of issues of equity.

## 7.6 Conclusions

We can draw conclusions from our analysis of mainstreaming in particular cases of governance in five production sectors along two lines:

- Firstly, what can be learned from the cases regarding the factors that enable mainstreaming in contexts of governance that adds to the mainstreaming literature that has focused on hierarchical government contexts on an analytical level.
- Secondly, what can be learned from the cases and relevant theory regarding identifying future strategies for strengthening mainstreaming in production sectors on a practical level.

Here we summarize briefly the answer to the first point, and in the following chapter we pursue the second.

Table 7.2 lists in the left column levers for mainstreaming that has been mentioned in the literature we reviewed, including scientific and grey literature. Bearing in mind it was not a systematic and comprehensive review it still provides a good basis for comparison with what we learned from our case studies as shown in the right column. The comparison makes clear that a governance context increases the number of possible levers for mainstreaming. Capturing these levers however requires recognising this governance context.

Levers are found in new actors and particularly in new constellations of actors that are able to enter dialogue and build synergies for example between public and private actors and their regulatory respective regulatory norms, between market (consumers) and producers, and between actors and norms at different levels of governance. The types of regulatory norms that can be employed increases, as does the accountability mechanisms that accompany them.

Diversity in actors may bring complexity, but may also increase the potential for motivated leaders to emerge and for a different type of horizontal leadership to matter. Diversity of interests and values can lower the common denominator, but also work as powerful starting points for identifying converging frames.

The role of knowledge emerges as a key resource but its type and role spans from independent research to practical experiences shared among stakeholders involved in mainstreaming efforts. The voluntary and non-legal nature of the way many mainstreaming efforts have been set up highlights the need for solid evaluation and considerable transparency that provides accountability as basis for trust relationships. The need to institutionalise longer time horizons is probably not unique to governance contexts but the diversity of actors makes this an important lever. Finally, the possible sources of funding to build mainstreaming efforts expands.

Many of the levers identified both in the existing mainstreaming literature and in our case study are identified as levers based on the assumption that they increase the influence and thus effectiveness of mainstreaming on the topic in focus. Our analysis shows, however, that there is much to be done yet to establish the actual problem-solving effectiveness of such measures. Patience and faith in the good intentions of actions is needed to allow the experimentation with new strategies and mechanisms for addressing, in our case, biodiversity in production sectors. Over time, however, there is need for more solid evidence of effectiveness or there is a risk that the measures devised in various governance processes will lose their legitimacy in the eyes of the public. The attention to sources for and degrees of legitimacy in traditional mainstreaming literature has been scant, perhaps because when governments are the key actors their legitimacy to act is taken for granted at least by the analysts. In contexts of governance authority cannot be taken for granted and has to be motivated, indeed justified, and therefore it is vital to pay considerable attention to legitimacy in these cases. Legitimacy is a dynamic concept, it can take time to build up, and once gained can easily be lost.

**Table 7.2**. What works in mainstreaming.

| | | Potential for change — levers | |
|---|---|---|---|
| | | **From the hierarchical mainstreaming literature** | **From the five case studies of mainstreaming under governance** |
| **Governance dimension category** | **Institutional** | - Coordination among actors and institutionalised coordination mechanisms<br>- Specially initiated mainstreaming activities<br>- Organizational integration<br>- Coherent norms and regulatory tools (including those giving financial incentives)<br>- National laws | - Creating private-public deliberation and synergies<br>- Support of public actors for non-state led mainstreaming efforts (laws, procurement etc.)<br>- Balancing ambition in mainstreaming measures with possibility of large scale uptake<br>- Accountability mechanisms between market and industry<br>- Voluntary norms such as codes of conduct<br>- Multi-level linkages among actors and norms |
| | **Motivational** | - Strong advocates<br>- Top-down leadership (political will)<br>- Normative agreement (united vision)<br>- Mutual supportiveness and respect for the issues to be integrated<br>- Understanding of changing interests | - Income opportunities from mainstreaming measures,<br>- Bottom-up market (consumer) pressure<br>- Converging frames<br>- Horizontal leadership by example<br>- Leadership that can emerge from various actors, public-private, local-national-global, based on interests or deeper values |
| | **Means** | - Organizational capacity<br>- Capacity for implementation<br>- Awareness and knowledge among stakeholders about the issue to be mainstreamed<br>- Funding | - Independent scientific research<br>- Awareness of cross-sectoral benefits of mainstreaming<br>- Solid evaluation, data sharing, creating transparency, accountability and ultimately trust<br>- Institutionalising longer time horizons and aligning time horizons among relevant stakeholders across governance levels<br>- Funding for governance of multi-stakeholder mainstreaming initiatives particularly from private sector |

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# Chapter 8. Identifying strategies for mainstreaming biodiversity in production sectors

Sylvia Karlsson-Vinkhuyzen and Marcel Kok

In this chapter we identify what can be learned from the cases of mainstreaming in governance contexts that have been analysed in this report as well as from relevant theory regarding identifying future strategies for strengthening mainstreaming in production sectors on a practical level. We proceed by discussing such strategies at two analytical levels. First we discuss some alternative directions that can be pursued. These involve the type of governance arrangements, including type and nature of norms, that are used for mainstreaming purposes. Second we discuss strategies available for different types of actors including goverments acting together in global arenas, international organizations such as the CBD Secretariat, governments at home and finally non-state actors. In the final conclusion we seek to summarize the potential these various strategies could give for mainstreaming biodiversity in society at large.

## 8.1 Choices of direction

In the current global institutional context governments have adopted a set of normative goals for addressing biodiversity loss in the form of the Aichi targets, yet it is not in their ability to achieve them on their own especially not in the case of production sectors that include multitude of producers and consumers (both large and small) whose behaviour cannot simply be governed by top-down government measures. Perhaps it is also not the sole responsibility of governments to conserve biodiversity. These two aspects motivates a broader look across society in the search for strategies for putting biodiversity on the agenda and for actors that can champion them. This was the motivation for our comparative analysis of the mainstreaming in production sectors The sample of cases in our report is limited. Still it is clear that many initiatives that are relevant for biodiversity conservation exist, ranging from product standards developed through multi-stakeholder certification bodies to local co-management arrangements across various sectors and levels of governance. In the rest of the chapter we try to identify what could be done to build on and strengthen existing strategies and identify additional ones.

### 8.1.1 Certification or beyond?

One central issue to consider is whether it is sufficient to rely certification of products as the main strategy to revert biodiversity loss (and broader sustainability criteria) in specific production sectors or whether other measures are needed beyond certification. The answer depends on a number of factors. One such factor is how big the gap is between the basic legal requirements set for particular production sectors in the major production countries and the kind of 'gold standard' that could be reached with the right incentives. Another factor relates to which product is concerned. For some products the certification strategy works well; there is a strong well known certifier and label, the product is sensitive to consumer demand and consumers are willing to pay a premium price etc. For other products

the sensitivity to consumer pressure may be much smaller, consider soya beans used for animal feed for example. If production is carried out by many small-holder farmers/fishermen their ability to join a certification program may be limited etc. Perhaps even more important is to consider the possibility to and implications of up-scaling of certification to much larger volumes. Will consumer demand in emerging markets be as strong as in those e.g. Western Europe, for which certification was developed? Will a significantly larger volume of certified products be viable both for businesses (who loses the edge of being among the few who are certified) and for the biodiversity that is affected by the sector (will certification be sufficient to drastically revert biodiversity loss)?

### 8.1.2 Better or more certification?

In the cases when certification is or may become a major strategy for mainstreaming biodiversity there are still some key questions to consider. These choices concern how to improve the contribution of certification to reverting biodiversity loss. Primarily these questions concern:

1) how to increase the volume of certified products (implying how to increase the area of land/water where certificated products are harvested); and
2) how to improve the contribution of certified production systems for biodiversity conservation

In view of the scarcity of good scientific studies of the impact of certification on biodiversity (see section on resource barriers), it is not possible to conclude which of these two strategies would be more effective in conserving biodiversity. The safest bet would therefore be to pursue both strategies with comparable priority. However, this may be challenging as there are possible trade-offs between them. With stricter criteria for certification producers would have to invest much more to become certified. This could make expansion of volume more difficult and slow. The sectors that have more than one certification system on offer face a similar dilemma, such as the FSC and PEFC in forestry or the global RSPO system and national standards such as the ISPO for Indonesian palm oil. The existence of parallel labels can, at its worst, lead to a race to the bottom in terms of the stringency of criteria for biodiversity. Finding the conditions under which it rather becomes a race to the top is here a priority and identifying how those conditions can be created.

### 8.1.3 Beyond certification

When the answer to the questions raised above indicates that certification is not a viable strategy on its own then a serious search for other options is necessary. One such option is to enable biodiversity concerns to take a more central role in overall strategies of companies that constitute a part of the global value chain of production sectors. This could be done through making biodiversity concern a core issue in Corporate Social Responsibility (CSR) strategies, including their reporting through both national and international efforts/processes. Such a form of mainstreaming is likely to require partnerships between corporate actors and e.g. scientists to find ways to introduce meaningful actions and indicators. This could also involve engaging with the Global Compact and other similar bodies to explore how to bring in biodiversity into their sustainability criteria and reporting. Biodiversity is a much more complex issue to incorporate than e.g. carbon emissions, and having a set of key principles as well as practical tools available for how companies can

consider biodiversity should make it easier for leaders with a passion for this issue to promote a change process.

This strategy implies a focus on norm diffusion among business actors rather than among consumers and governance processes. Global governance processes can still be an important starting point for such diffusion as illustrated by the way that Human Rights have been put on the agenda of business through e.g. the adoption by the Human Rights Council of the Guiding Principles on Business and Human Rights in 2011 (Ruggie, 2014).

### 8.1.4 Going soft or hard?

Another option that sectors have when non-state based certification is not appropriate or sufficient is to rely more on government based norms. But also here there is a choice to be made; whether to rely on global 'non-legal soft laws' or 'legal soft laws' and their adoption and implementation by national governments or whether to rely on national 'hard' laws (regional in case of the EU).

Hard law here implies that a norm is not only legally binding but also that it has a certain degree of specificity and is accompanied by a system of enforcement involving ultimately some court structures (Abbott and Snidal, 2000). The CBD is legally binding but is broad (and thus vague) in its objective and has no system of enforcement, it therefore falls in the category of 'legal soft law' (Chinkin, 2000). Formally it is law but in practice it has few characters of an enforceable law as we think about it in a domestic context. It is at country level that national governments can translate the rather imprecise obligations of the CBD into effective and enforceable laws. This necessitates, however, that countries have both the political will and the capacity to do so (see below).

Hard law is within the realm of national governments to adopt and they may need to reconsider the range of laws and regulations they have for the production sectors in the light of their implications for pressure on biodiversity. One example of action in this direction is legislation to eliminate trade of illegally harvested wood initiated in European Union (EU) and the United States (see chapter 2). Other examples can be strong legal frameworks for land use planning or for financial investments in production sectors nationally and abroad (as suggested in relation to FDI in Africa discussed in chapter 5. In essence this means that national governments seek to mainstream biodiversity throughout their legal and broader regulatory frameworks, most likely moving far beyond the legal instruments earlier adopted for the ratification and implementation of the CBD.

Soft law is a concept mostly used for (international) norms that are not legally binding. In addition the connotation soft implies less specific obligations and less or no institutional enforcement structures. It is always possible to stress the limitations of soft law. On the one hand hard law is expected to have more influence than soft law; one reason being that it has to be ratified and become part of national law and another being that the mere act of signing on to it indicates a stronger commitment (Boyle and Chinkin, 2007). Soft law, it is claimed, lacks the legitimacy, strong surveillance and enforcement offered by hard law (Kirton and Trebilcock, 2004) and it elicits less compliance (Brown Weiss, 2000; Shelton,

2000) and less condemnation when violated in comparison with hard law (Thürer, 2000).[25] Nonetheless, soft law can provide a significant normative compass for actors sensitive to such, and in many cases they have provided the first step towards the development of legal norms. Soft law can act as a powerful agenda setter, it reduces the sovereignty costs, enables compromise and is more flexible, faster to develop and implement (it requires no ratification), has higher ability to facilitate cooperation and deal with change (Karlsson-Vinkhuyzen, 2011). Global soft law has also frequently been the first step toward a legally binding treaty.

However, considering the rather soft nature (whether the norm is legal or not) of most international norms, at least those related to environment and biodiversity, there is perhaps more reason to look beyond the legal nature of norms and rather focus on the mechanisms through which they can exert influence. Acting in accordance with international norms requires that actors have both the motivation and the capacity to do so (Karlsson-Vinkhuyzen and Vihma 2009). Motivation can be strengthened through either changing the material incentives of states through soft sanctions (such as negative reputation from non-compliance) or systems of reward, and/or changing their identities or preferences through processes of dialogue and learning (Chayes and Chayes 1995, Karlsson-Vinkhuyzen and Vihma 2009).[26] The technical or political capacity of states to comply with international norms can be addressed through various forms of capacity building.

There is an abundance of global soft laws that are relevant for biodiversity; including the UNFF guiding principles on forests, the Rio Principles, the Sustainable Development Goals (to be adopted in 2015) etc. There is clearly considerable potential in using global soft law such as the Aichi targets in support of mainstreaming biodiversity into production sectors; soft law can galvanize action of many different types of actors also beyond states and put biodiversity on the agenda. Together these three clusters of global soft norms could provide a powerful core for the kind of norm diffusion that spurs states and non-state actors both into action, individually and in concert. This does not happen by itself; however, it takes (concerted) action by many actors to get the ball of norm diffusion rolling so to speak.[27] Finnemore and Sikkink (1998:892) describe how in the international community "agreement among a critical mass of actors on some emergent norm can create a tipping point after which agreement becomes widespread in many empirical cases". In this context the CBD Secretariat could play a central role in collaboration with other biodiversity related treaty bodies in reaching out to various production sectors.
Again, the example of norms on human rights in business is an illuminating example of how norm diffusion can start. As soft as the Human Rights Council's Guiding Principles on Business and Human guidelines may be, they have within a short time span been taken up by national and international standard-setting bodies and they have been used as a policy

[25] For an overview of the differences (pros and conds) with hard and soft law see Karlsson-Vinkhuyzen (2011).
[26] The relative importance of these two broader categories of mechanisms of influence is bound to depend on a number of factors including domestic political dynamics, type of issue etc. In scholarly literature the theoretical lens for understanding the behaviour of states influences which mechanisms are assigned higher importance (Hirsch, 2004).
[27] For a comprehensive text on international norms and how they can exert influence see Finnemore and Sikkink (1998) and Chayes and Chayes (1995) and Braithwaite and Drahos (2000).

template by companies and business associations as well as an advocacy tool by nongovernmental organization (Ruggie, 2014).

### 8.1.5 How to regulate the market, or not?

It is not always so that conserving biodiversity, or using it more sustainably, is an extra cost for producers in the agricultural, forest or fishery sectors that they would not benefit from. There are numerous cases where it makes (or should make) complete business sense for producers to reduce their pressure on biodiversity. The example of integrated shrimp farming in the mangroves of Vietnam and elsewhere illustrates this well. Research has shown that even in the short term it is more profitable for the aquaculturists to keep the mangroves rather than to cut them down. In such cases it is essential to identify what may be driving investments in non-profitable directions and how those pressures can be changed. It may be an issue of insufficient or wrong information, of aggressive marketing by particular business actors or organisations, or broader cultural belief that everything modern is expected to be better for business. The choice for governments and other stakeholders is then to consider if and how to support sounder and more biodiversity friendly business choices.

In other cases the profitability from biodiversity conservation may only be realised over longer time horizons. Obvious examples are here when particular species are harvested such as fish or trees. For the fishermen and timber companies that want to have access to the resources they depend on also in the long-term future there should be an interest in measures that support conservation. There can be many reasons why short-term gains may dominate their decision-making. Identifying these reasons and finding ways to regulate the market conditions in a way that makes the business choice for conservation more attractive is an option for the sector.

### 8.1.6 Do we wait for leaders or do we 'create' them?

For some types of products/crops there are promising or even successful trail blazers for biodiversity and broader sustainability issues; prominent NGOs like WWF or big multinational actors like Unilever or IKEA. For some crops the efforts to take such a lead through a certification process has been less successful such as in the case of the global roundtable on sustainable soy (Schouten, 2013). For other products or parts of sectors there is no one who speaks out for biodiversity. The case of FDI in African agriculture is one example. The dominant focus of the public debate and advocacy efforts from NGOs on this issue is around human rights and local livelihoods. The choice to be made in these cases is whether to wait for leaders to 'emerge' or whether there are ways to 'create' them. Is it possible to identify scouting efforts for potential leaders out there and design capacity building for them? Or is it possible to identify educational trajectories and curricula development that would nurture a new generation going into these sectors? The scholarly literature on leadership is not strong in terms of evaluating leadership development and training efforts but what is there indicates strong potential of such training (Aviolo et al, 2009). It is rather dominated on documenting and theorising around leadership strategies. Here there is a growing scholarship on possible criteria for exerting what some refer to as 'sustainability leadership', leadership that is both motivated and capable of leading processes of change towards e.g. sustainable consumption and production (Redekop 2010, Allen et al. 1998, Vinkhuyzen and Karlsson-Vinkhuyzen 2014).

## 8.2 Actor based strategies

The discussion above on the major choices for direction in efforts to mainstream biodiversity into production sector raised a number of questions and options to consider, without providing very clear answers on 'who should do what'. There are several reasons for this.

- Firstly, the scenarios developed by PBL (Kok and Alkemade., 2014) show that the Aichi targets, and the long-term objective of the CBD can be achieved in different ways; treading a diversity of pathways in parallel or with different emphasis in different regional contexts. This means that there is no one approach but rather many leaving the door open for various choices.
- Secondly, the nature of intergovernmental processes such as the CBD is such that parties have strong preferences for a menu of options of workable strategies in different (regional) contexts rather than very specific one size fit all recommendations.
- Thirdly, the nature of the governance context in production sectors — with a considerable diversity of actors more or less connected through (multilevel) networks, and with non-state actors often being in the driving seat for major developments — makes it indispensable that such choices are made through deliberative processes among the stakeholders.

With this background the following section provides a menu of optional actions for governments collectively at global level, for national governments and for non-state actors. The suggested actions cover the range of strategies that were just discussed. A majority of those strategies imply that there are at least some actors who are motivated to take action for the explicit motivation of mainstreaming biodiversity. But successful measures in production sectors for reducing pressure on biodiversity can also be adopted without any reference to biodiversity and if these serve the priorities of the sectors they have probably a better success rate. One example of such a strategy is the more effective use of agricultural land through sustainable intensification. We have, however, left out such strategies here. Importantly, as argued above, in most cases the choice of strategies should ideally not be either or but both.

### 8.2.1 Governments together

Governments collectively at the global level could:

*Change constraining global norms*. If governments do not want to rely on market based regulatory mechanisms (e.g. certification) they could consider changing constraining international norms. This could include moving to change WTO rules that prevent discrimination of 'like products' and the ability of countries to restrict imports from trading partners that do not meet minimum regulatory standards for biodiversity. Many countries would resist such changes considering them as disguised protectionism and many global firms have earlier opposed such proposals as it would raise their costs and interfere with their supply chains.[28] Clearly such a change of trade rules can only be accomplished if there emerges a broader consensus within countries (implying considerable integration of priorities among e.g. environmental and trade ministries) and between countries that the

[28] See Vogel (2009)

ability to consider the 'quality' dimensions (such as the impact on biodiversity) of the process of production wherever it occurs is an essential means towards achieving global goals including the Aichi targets.

*Develop new international norms.* Despite the great number of international intergovernmental norms, hard law and soft law, relevant for biodiversity conservation in production sectors that already exist there are gaps that can be filled and synergies that can be made with norms on related issues. One possible example is ensuring that REDD+ rules under the UNFCCC support biodiversity. There may also be important regulatory opportunities in less obvious sectors such as in investment and finance, for example relating to the Principles of Responsible Investment that was convened by the Secretary General of the United Nations.[29] Any progress along this route is likely to require a considerable degree of consultations in at least some domestic contexts first where ministries in charge of biodiversity need to find listening ears in their sister ministries and particularly in the ministry of foreign affairs that could play a crucial integrating role. Creative suggestions from think tanks and advocacy organisations could also facilitate such a development.

*Support private norms*. Governments could collectively engage with and support particularly the efforts to develop international private norms that include biodiversity criteria. This could include supporting the quality control of certification processes with respect to biodiversity through bodies such as ISEAL.[30] It could also include the support for integrating more explicitly biodiversity concerns in industry or cross-industry codes such as the UN Global Compact. Such support could be both moral and practical; moral support in terms of acknowledging through e.g. decisions by the Conference of the Parties of the CBD and other normative declarations the value of these initiatives and practical support in terms of ideas and resources channelled through relevant intergovernmental organizations (see next point).

### 8.2.2 The Secretariat of the Convention on Biological Diversity

The Secretariat of the CBD can play a leading role in *mainstreaming the 'soul and content' of the Aichi targets in global public and private governance.* Such a role can be performed through a variety of activities, some of which may be possible within current mandate and resources, others may require support from CBD parties through COP decisions and additional resources as well as 'homework' for parties to ensure their sister ministries who negotiate the mandate of other intergovernmental organizations also put biodiversity on the agenda. The CBD Secretariat could:

*Be more present and engaged in important intergovernmental norm development* arenas related to production sectors such as the SDG negotiations and the UNFCCC negotiations on REDD+, agriculture etc.; organise side-events, produce reports and policy briefs etc.

*Engage more in the implementation processes of existing normative frameworks* that relate to production sectors in collaboration with other intergovernmental organisations, such as the 10 year framework of programs on sustainable consumption and production led by

[29] See http://www.unpri.org/
[30] See http://www.isealalliance.org/about-us

UNEP, the United Nations Decade of Sustainable Energy for All led by UNIDO and the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security developed through FAO (see the FDI in Africa case).

*Use the coordination mechanisms of the UN and increase the collaboration with the Bretton Woods institutions* to sensitize other parts of system to the content of the Aichi targets and the role of production sectors in achieving these.

Invest considerably more in public awareness raising campaigns on the link between production and consumption choices and biodiversity and increase the support to parties to do the same.

Reach out to stakeholders in production and consumption and the actors in the value changes that connect them, particularly their international associations (World Business Council for Sustainable Development, the UN Global Compact, Consumers International); invite them to dialogues about how to strengthen the awareness, leadership and action for biodiversity among them and their constituents. Such dialogue meetings could be held back to back with COPs or other relevant events. Such dialogues needs to have a follow up process, finding proper formal or informal regular meeting and collaboration mechanisms where.

Reach out to the academic community through the appropriate channels, to jointly identify further research needs and other forms of support they can provide, such as the development of evaluation tools.

### 8.2.3 Governments at home

Governments at the national level could:

*Strengthen their laws for production sectors* within their territory and particularly their enforcement as a means to combat e.g. illegal logging and fishing and as a means to set a regulatory minimum standard for integration of biodiversity into production systems. The higher this regulatory level is, the lower the threshold for producers to go into sustainable certification schemes.

*Adopt or strengthen laws that prevent trade in illegally harvested products* (examples exist as discussed above in European Union and USA for timber) just as laws have been adopted to ban the trade in species threatened with extinction.

*Provide a strong institutional framework for land use planning* where biodiversity concerns are integrated. Land use planning is a role only governments can perform and through this ensure that a number of societal priorities across various sectors are considered. It is one of the important arenas where cross-sectoral linkages can be identified and made use of when synergistic effects are possible. An open transparent process where the needs and concerns of various stakeholders can be heard is likely to improve the legitimacy of the plans and lower the costs for their implementation.

*Support the business opportunities that thrive on biodiversity* for example through:

- Removing direct and indirect subsidies for unsustainable practices and production systems. This requires a broad look at the means through which governments influence production system choices beyond explicit monetary subsidies including the flow of resources to R&D, the content of educational trajectories in universities and colleges that train advisors for production sectors.
- Creating an enabling framework for sustainable practices by investing in relevant R&D. This requires longer term horizon and close collaboration between biodiversity experts in governments and beyond and experts on various production systems and the funding institutions for basic and applied research in a country.
- Ensuring information about biodiversity benefits reaches potential users. Here the institutional links and resources available for sharing and translating relevant research for uses needs to be put in place.
- Creating co-management schemes of multipurpose ecosystems. This can be seen as a parallel to the land use planning measure (see above) but one that is decentralised and focused on ongoing management of specific ecosystems. It may indeed require that a land use planning process has devised clear rules for land or water usages.

*Strengthen demand for certified products* through for example:

- Ambitious procurement policies that favour certified products. In the case of products where several certification systems exist, going for those with most stringent biodiversity criteria would obviously be most effective. As a big consumer governments can have even have leverage enough to engage with retailers to ensure they expect a continuous improvement in what the certification demands for e.g. biodiversity.
- Develop and implement educational strategies (formal and informal education, public information campaigns etc.) about the relationships between biodiversity and healthy and sustainable diets.
- Strengthen trust relationships around certification by investing into research on for example the adequacy of the certification principles and criteria for biodiversity conservation and the actual impact of certification on biodiversity in different production and ecosystems.

### 8.2.4 Non-state actors

Non-state actors include a range from smallholder farmers to big retailers, from individual consumers to large international advocacy NGOs and private or multi-stakeholder certifying bodies. For products going into export the relevant actors span the whole value chain across international borders. For locally consumed products local supermarkets and retailers have more important roles. The suggestions here for non-state actors are focusing on collective actors (firms, organizations) involved in global value chains rather than individual consumers. These non-state actors could:

*Make better use of the linkages* that certification provides between producer and consumer at different levels through, for example:

- Creating more dialogues between international standard bodies and local and national actors. This would facilitate the identification of possible local contexts that require modification of certification criteria or special attention in capacity building etc.

- Encouraging demand for certified products through educational strategies ensuring certification becomes a licence to produce. Such efforts would have most effect if done through the collaboration with formal educational bodies and other centres of learning. Still, the arenas in which non-state actors operate, the means they can employ and the audiences they can reach are often different from the formal educational systems. The world of social media, entertainment and other arenas where consumer culture is nurtured are more accessible for these actors.
- Investing more in the trust building around certification including research on performance. It is in the interest of certifying bodies and the companies benefitting from certification to ensure that its costs and benefits are evaluated and can stand the calls for accountability among consumers that are likely to increase over time.
- Strengthening the biodiversity criteria in voluntary production standards. Certifying bodies overall need to have a system for continuous improvement of their principles and criteria including those particularly relevant for biodiversity.
- Investing in expanding certification schemes to areas where they matter most (where biodiversity is high and sustainability norms are low). This action can be supported not only by certifying bodies and producing firms but it also needs the attention of civil society organisations whose support for capacity building and resources needed to enter certification is vital.

*Provide information, capacity building and resources* for business practices that both support biodiversity and are financially viable.
For private businesses in the production sectors such measures can include:

- Considering investing more in identifying the linkages between biodiversity and their production methods both on the short and long term. This can include engaging with the research community and NGOs who may have access to information about best practices from comparable regions.
- Engaging in learning networks sharing best practices with other producers and contributing to capacity building efforts.
- Investing preferentially in production systems that are profitable over longer time horizons which implies holding impacts on ecoystem services and biodiversity at a minimum. This is also a measure where banks and insurance companies and the financial sector at large can play an important role in what criteria they use for providing loans etc.

For civil society organizations that engage with small holder producers they can play important roles for example through:
- sharing information in training and capacity building in sustainable production practices
- improving market access via certification schemes etc.

Civil society organizations operating at the international level as well as business organizations can, inter alia:
- Engage with the academic community to improve the access to and applicability of available knowledge on sustainable production systems.

*Take leadership for biodiversity*. The 'gold standard' of biodiversity friendly production systems that is needed in order to make any significant progress towards the Aichi targets and the objective of the CBD requires visionary leadership from many players in the local and global value chains. Such leaders will need to:[31]

- Take creative yet well-organized initiatives;
- Endeavour, persevere, and overcome obstacles on the path towards goal achievements;
- Create a vision of a desired future based on shared values and principles and to articulate it clearly and simply so that it inspires others to pursue such a vision.

The fact that there is already a global vision for biodiversity in the Aichi targets and CBD objective provides non-state actors with a ready normative framework to engage with in their daily operations, their Corporate Social Responsibility strategies etc.

## 8.3 Conclusion: mainstreaming biodiversity across society?

In chapter 7 we concluded what can be learned from our comparative case study about the factors that enable mainstreaming in contexts of governance. In this chapter we sought to use this for identifying future strategies for strengthening mainstreaming in production sectors on a practical level. We outlined a number of questions regarding directions for what strategies to prioritise. The first set of these revolved around the use of labels and certification schemes for particular products from either forests, agriculture or fisheries. While this route of mainstreaming is emerging as a common one, our study by no means concludes that it is the only or even best strategy. There are several issues that need to be considered around this manner of linking producers and consumers linked both to their relatively unknown effectiveness and their legitimacy; where is the proper balance between stringency in criteria and market uptake, how can demand for certified products be created beyond the lead markets, how is it possible to avoid a race to the bottom among competing standards? And further, despite efforts of transparency and accountability, how good do certification programs perform on these dimensions? Furthermore, what are the impacts on equity from these kinds of non-state regulatory measures and if the impacts are unfavourable is there a role for governments to mitigate such impacts? Clearly our study raises more questions for future research and stakeholder dialogues than provides answers. Our study should not, however, in the least be taken as suggestion that certification is the only available strategy for mainstreaming an issue like biodiversity in production sectors. On the contrary, we highlight several other strategies for mainstreaming and these are indeed highly necessary as the reach and effectiveness of certification is as yet limited. The development of appropriate regulatory norms (rules, laws) by governments either at national or global level is one important route that can be pursued. Whether the choice falls on hard or soft law what is important is that these norms influence the behaviour of actors in the production sectors. This may require proper sanctioning systems or sufficient public pressure to comply. Other strategies involve supporting the market actors such as producers to realise that they can benefit from conservation of biodiversity through generating and

[31] For a more detailed analysis of what is required of leaders for sustainable production and consumption see Vinkhuyzen and Karlsson-Vinkhuyzen (2014)

sharing appropriate knowledge. Finally, it may also be possible use as a strategy the scouting for and training of potential highly motivated leaders among those highly diverse actors in sectors.

The second part of this chapter gave suggestions for concrete actions that different types of actors could take at different levels; governments together as an international community, intergovernmental actors particularly the CBD secretariat, governments at home, and finally diverse types of non-state actors. These suggestions cannot all directly be derived from the result of our comparative analysis of five cases of mainstreaming in production sectors, we have also built upon more general insights from the theory and practice of governance. Nonetheless, many of the suggested strategies do directly emerge from observations of the case studies which indicates the value of our analytical framework that we hope to pursue further.

There is little risk that we get too much action for biodiversity conservation, history until now shows very much the contrary. It is very clear that measures by only one category of actors, either only governments developing a regulatory minimum, or private actors taking voluntary initiatives through e.g. certification and consumer choices, will never be sufficient for achieving the Aichi targets

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