IUCN COMMISSION ON ENVIRONMENTAL, ECONOMIC AND SOCIAL POLICY

Policy Matters

ISSUE 21 – SEPTEMBER 2016

CERTIFICATION AND BIODIVERSITY – HOW VOLUNTARY CERTIFICATION STANDARDS IMPACT BIODIVERSITY AND HUMAN LIVELIHOODS

IUCN COMMISSION ON ENVIRONMENTAL, ECONOMIC AND SOCIAL POLICY

Policy Matters

ISSUE 21 – SEPTEMBER 2016

CERTIFICATION AND BIODIVERSITY – HOW VOLUNTARY CERTIFICATION STANDARDS IMPACT BIODIVERSITY AND HUMAN LIVELIHOODS

Lead Editors:
Pavel Castka and Danna Leaman

This publication should be cited as: Pavel Castka, Danna Leaman, Diana Shand, Doris Cellarius, Tim Healy, Aroha Te Pareake Mead, Marina Rosales Benites de Franco, Anastasiya Timoshyna. 2016. Certification and Biodiversity – How Voluntary Certification Standards impact biodiversity and human livelihoods. *Policy Matters*, Issue 21. Gland, Switzerland: CEESP and IUCN.

Printed in Taiwan by Choice Development Inc
4F, 319 Bade Rd., Section 4, Taipei, Taiwan R.O.C.

ISBN: 978-2-8317-1796-8
DOI: http://dx.doi.org/10.2305/IUCN.CH.2014.PolicyMatters-21.en

Table of Contents

POLICY MATTERS is a peer reviewed journal published electronically and in print by IUCN's Commission on Environmental, Economic and Social Policy (CEESP). For more information, including accessing back copies of past *Policy Matters* editions see: http://www.iucn.org/commissions/commission-environmental-economic-and-social-policy/news-and-policy-matters

POLICY MATTERS is published to encourage in-depth research and analysis into issues within the wide spectrum of issues included in the Commission's mandate. The mandate is agreed to by IUCN Member organisations every four years. The CEESP mandate for 2013–2016 includes the following areas: 1) Development and promotion of a conservation ethic that supports diverse knowledge systems and values, delivers rights-based and equitable conservation with improved governance of natural resources and tangible livelihoods benefits, and links biological diversity with the cultural dimensions of nature conservation with a focus on the rights of indigenous peoples and local communities. 2) Increased use of rights-based approaches to natural resource management and governance that promotes social and cultural equity, indigenous peoples' self-determination, community governance, sustainable livelihoods and human security. 3) Nature-based solutions to global challenges—such as climate change, conversion of forests and farmland to monocrops, including biofuels projects, food insecurity, poverty, inequitable economic and social development—that are underpinned by economic policies that reinforce sustainability, social equity and environmental integrity. 4) Enhanced capacity of civil society, governments and the private sector to ensure corporate social and environmental accountability and reduce the negative impact of industries on climate, biocultural diversity and food security.

Each edition of *Policy Matters* addresses a specific theme and appoints an editorial team and peer reviewers based on their expertise in the subject matter. The CEESP Chair, Aroha Te Pareake Mead, and CEESP Steering Committee have overall responsibility for each edition.

Editorial Team Members for this 21st Edition were:

Lead Editors

Dr Pavel Castka, NZ: Associate Professor College of Business and Law (Operations Management) University of Canterbury. Member of CEESP Theme on Social and Environmental Accountability of the Private Sector (TSEAPRISE)

Dr Danna Leaman, Canada: Member of IUCN Species Survival Commission (SSC) Plant Conservation Sub-Committee, Co-Chair of SSC Medicinal Plants Specialist Group and member of SCC–CEESP joint Sustainable Use and Livelihoods Specialist Group (SULi)

Editorial team leader

Diana Shand, NZ: IUCN-CEESP Steering Committee Member and Chair of TSEAPRISE. IUCN Regional Councillor 2004–2012 and Council Vice-President, and Chair of Private Sector Task Force 2008–2012

With

Doris Cellarius, USA: Sierra Club representative to the Roundtable on Sustainable Biomaterials and Chair of its Environmental Chamber. Member of CEESP–TSEAPRISE and Chair of its Cross-Theme Biofuels Task Force

Tim Healy, Madagascar: the Director of Aquaterre, Member of CEESP–TSEAPRISE and of the Cross-Theme Biofuels Task Force

Anastasiya Timoshyna, UK: a Programme Leader - Medicinal Plants for TRAFFIC, the wildlife trade monitoring network, Member of SSC, Co-Chair of its Medicinal Plant Specialist Group, and member of SULi

Aroha Te Pareake Mead, NZ: Chair CEESP 2008-2016, IUCN Councillor 2000–2016

Dr Marina Rosales Benites de Franco, Perú: Professor Federico Villarreal National University, Lima. Member of CEESP Theme on Environment, Macroeconomics, Trade and Investment (TEMTI) and SULi, IUCN World Commission on Protected Areas (WCPA) and IUCN Commission on Ecosystem Management (CEM)

Acknowledgements

This 21st Issue of *Policy Matters* addresses questions that have arisen from time to time when considering the effectiveness of certification in supply chains. Certification is an important tool in promoting and monitoring sustainability and used by the Private Sector in achieving and demonstrating its commitment in such matters. Certification can be a mechanism for holding business to account in meeting sustainability standards – but actually, how effective is it in achieving protection for biodiversity and dependent human livelihoods?

This very question was discussed by the IUCN Council's Private Sector Task Force in the years I was involved as Chair and we were working to develop a new Private Sector Strategy for the Union. The matter is very relevant to the CEESP Theme on Social and Environmental Accountability of the Private Sector - and for other Commissions as well. Ultimately we are all pursuing the IUCN Mission "to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable." So the question has been long asked – how effective is certification in protecting biodiversity and people dependent on nature?

The IUCN WCC 2012 Resolution 88 expressed Members' concerns with the environmental and social impacts of industrial biofuel production. This led Doris Cellarius, Chair of the CEESP Cross-Theme Biofuels Task Force, to work with the IUCN Business and Biodiversity Programme and produce a report for the Sydney World Parks Conference, A Global Assessment of the Environmental and Social Impacts Caused by the Production and Use of Biofuels. It found that producing biofuels has caused harmful, often unanticipated impacts on people and the environment. A major finding was that there is little information available about the impacts of biofuels production on biodiversity. This is attributed to the lack of criteria for monitoring of these impacts in voluntary certification systems, a problem that was recommended be addressed.

Further discussions with Dr Pavel Castka, whose global research on voluntary standards and certification enabled this question to be teased out further, initiated this publication. I am very grateful to Pavel and Dr Danna Leaman for agreeing to lead the editorial team and for all the work such leadership entailed. Pavel has been actively involved with international standardisation within committees at the International Organization for Standardization. His research focuses at voluntary standards and certifications – their diffusion, impact and governance. Danna, a research associate with the Canadian Museum of Nature and a consultant on conservation and sustainable use of biological diversity, is a founding member of the board of trustees of the FairWild Foundation and an author of the FairWild Standard for sustainable wild collection of natural product ingredients.

So we started to build the team. Doris Cellarius has long encouraged such a project and her support and work never

flagged. Anastasiya Timoshyna deals with certification in FairWild Standard application for harvesting/trade in wild-collected plants and implementation of best sustainability practices in source/consumer countries and brought a wealth of experience. Tim Healy brought in his expertise in mining and its social and environmental impacts in Africa. Dr Marina Rosales Benites de Franco, an author for IPBES deliverables, brought knowledge from responsibilities in regional assessments of biodiversity and ecosystems services for the Americas. Aroha Te Pareake Mead, Maori from Aotearoa New Zealand, has been active in indigenous sustainability and biocultural heritage issues for over 30 years. She has contributed, advised and and kept an overview on our work. IUCN Regional Councillor and Vice-President Dr John Robinson was available to advise as needed.

We have had great support from IUCN's Business and Biodiversity Programme (BBP) based in Gland, especially from BBP Deputy Director Giulia Carbone. We acknowledge the work of BBP staff Deviah Aiama and Nadine McCormick, and that of the authors of the original biofuels report, Laszlo Mathe and Dr Fiona Bothwick.

We are very grateful to all those that responded to the Call for Abstracts and trust your research will continue.

In the production of this Issue 21 the members of the Editorial Team have acted as peer reviewers, as have Prof Charles Corbett, Prof Morgan Miles, Giulia Carbone, and Assoc Prof Michaela Balzarova. I thank you all for your constructive assessments and advice.

We thank Quentin Wilson for graphic design and layout.

And the final and major thanks go to each of the chapter authors for their work and their photos and graphics.

Diana Shand

Chair, Theme on Social and Environmental Accountability of the Private Sector (TSEAPRISE), IUCN – Commission for Environmental, Economic and Social Policy (CEESP)

Preface

Certification and Biodiversity – How Voluntary Certification Standards impact biodiversity and human livelihoods

Inroduction

This issue of *Policy Matters* provides insights for policy makers, NGOs, certification organizations, the private sector, and the general public about the impacts of voluntary certification standards (VCS) on biodiversity and human livelihoods. In line with IUCN's vision of "a just world that values and conserves nature" contributions specifically address the role of voluntary certification in conservation and sustainable use of biological diversity as it is defined in the United Nations Convention on Biological Diversity[1]. The overall aim of this issue is to describe and evaluate key elements of VCS that protect and enhance biodiversity and human livelihoods.

The term "Voluntary Certification Standards" includes their principles, criteria, and indicators as well as implementation mechanisms such as assurance systems and chain of custody. Adoption of the VCS principles and criteria can include incorporation into a company's own standards or integration with national regulatory systems, particularly where third-party certification is difficult.

Although VCS may have strong standards, implementation, and verification mechanisms, we do not know enough about their adoption, application, and impacts, particularly regarding protection of biodiversity and associated human livelihoods. To contribute to ensuring corporate social and environmental accountability we need greater insight into the methods and challenges of evaluating these impacts.

Our aim was to address several main themes and key questions (see Table 1, *following page*).

We received more than 40 abstracts in response to the call for papers, addressing most of the themes outlined in Table 1. Based on a peer review of abstracts by the editorial team, we invited submissions of 19 papers. Following a double-blind peer review process (by the editorial team and external reviewers), we have selected 10 papers for publication in this volume of *Policy Matters*.

Overview of the papers

In Chapter One, Milder, Newsom and Lambin apply the *Theory of Change* to monitor and evaluate biodiversity and natural resource conservation outcomes. The paper provides a detailed account of the SAN/Rainforest Alliance measurement system and the reader learns about the approach of SAN/Rainforest Alliance. The authors argue that systematic effort to monitor and adaptively manage certification schemes is now possible based on recent progress in the availability of environmental data and because of the sophistication of evaluation methods that are based on counterfactuals. This paper is an essential read for anyone interested in the specifics of monitoring and measurement of VCSs.

1 Convention on Biological Diversity, *Article 2. Use of Terms.* For the purposes of this Convention: "*Biological diversity*" means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems. "*Biological resources*" includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity."

Table 1 Main themes and key questions:

Measuring and documenting impacts of voluntary certification standards (VCS) on biodiversity and human livelihoods

Protecting biodiversity and improving human livelihoods are goals of some VCS, but there has been no comprehensive overview of how VCS measure and document their impacts on these goals. What are the enabling and limiting conditions for VCS to have an impact on biodiversity and communities at the genetic, population, species, habitat, and broader landscape and seascape levels? How are these impacts measured, documented, and communicated?

Creating synergies between VCS and regulatory frameworks

VCS are a form of voluntary regulation of industry practice (a "soft law") and are impacted by national legislation and other regulatory frameworks. What is the interrelation between various forms of regulation in addressing conservation and sustainable use of biodiversity, and supporting human livelihoods?

Consistency of VCS across the globe

Most VCS operate across the globe. Obtaining a certification may be easier in some countries than others. Likewise, different auditors /certification bodies might be easier going in issuing a certificate than others. Can requirements of VCS with respect to conservation and sustainable use of biodiversity be enforced consistently across the globe? How does consistency affect protection of biodiversity and and ecosystem services and improve human livelihoods?

Competition between VCS schemes

In many industries, VCSs compete head on for market share: (for instance, Pan European Forest Council (PEFC) and Forest Stewardship Council (FSC)). Do the impacts of VCS on protection of biodiversity and human livelihoods improve or diminish as a result of the competition?

Understanding publicly available sources on VCS

Some publicly available databases (such as the International Trade Centre's Standards Map) provide a comprehensive source of information about VCS. What can business and the general public learn about the relevance of VCS to protection of biodiversity and human livelihoods from these databases? What are their strengths and shortcomings?

Effective governance of VCS

What VCS governance structures support applications to biodiversity and human livelihood protection? How do governance mechanisms, such as accreditation, auditor training, and grievance systems, contribute to effective and trustworthy VCS schemes? Are other, external experts (with skills with respect to biodiversity impacts) engaged in monitoring the certification processes, the certificate holder/ producers management activities?

Addressing all aspects of a company's areas of influence

How effectively can VCS address a company's area of influence beyond its direct operational footprint? For example, can VCS address **indirect project impacts** on biodiversity or on ecosystem services upon which affected communities' livelihoods are dependent? Can VCS address **impacts from associated facilities** -- facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable? Can VCS address **cumulative impacts** that result from the incremental impact, on areas or resources used or directly impacted by the project, from other existing, planned or reasonably defined developments at the time the risks and impacts?

In a meta-review of literature covering 29 VCS standards (Chapter Two), Joanne Khew Yu Ting, Kudo Shogo, and Marcin Pavel Jarzebski investigate the efficacy of biodiversity conservation in these schemes, which include Payment for Ecosystem Services (PES), eco-labeling for marine and agricultural commodities, and environmental corporate social responsibility. The chapter evaluates biodiversity conservation outcomes reported for the various schemes at species and habitat levels, and recommends improvements to enhance biodiversity conservation impacts.

In Chapter Three, Denis Ruysschaert describes the development of sustainable palm oil certification and evaluates the influence of the Roundtable on Sustainable Palm Oil (RSPO) on curbing deforestation and other aspects of biodiversity conservation in Indonesia and Malaysia, as well as the impacts of sustainable palm oil certification on transnational governance by various stakeholders and on social equity through benefits to local producers. The author recommends changes needed for more meaningful impact on local livelihoods and biodiversity conservation.

David D'Hollander and Norma Tregurtha (Chapter Four) discuss the emergence of 'supply side' interactions between governments and VCS to scale up the production of sustainably produced commodities. This article provides three examples of such emerging interactions: the Brazilian coffee sector in the state of Minas Gerais, cotton production based on a concessionary model in Mozambique, and sustainable palm oil production in Indonesia and Malaysia. The paper also discusses the potential and challenges of such new interactions and co-regulatory initiatives.

In Chapter Five, Sini Savilaakso, Paolo Cerutti, J.G. Montoya Zumaeta, and Ruslandi compare forest governance regimes in Indonesia, Cameroon, and Peru, and how these have evolved to address biodiversity conservation and human livelihoods dependent on forests. Focusing on the role of Forest Stewardship Council certification in these countries, the paper evaluates whether these case studies of VCS policy and government regulation demonstrate complementarity, substitution, or antagonism between these private and public instruments.

Laurenne Schiller, Taylor Mason, Rhona Govender, Kathleen Short, and Megan Bailey (Chapter Six) also consider synergies between VCS and government regulatory systems, in the fisheries and aquatic resource sectors in Canada. Comparing several voluntary private market-based governance approaches for sustainable fisheries and aquaculture, this paper considers how trade-offs between private governance (VCS approaches) and strong public resource management policy affect larger marine biodiversity objectives.

Expanding on the topic of regulatory synergies, Bryony Morgan and Anastasiya Timoshyna (Chapter Seven) discuss the importance of wild plant, fungi, and lichen collection to biodiversity conservation and livelihoods in many countries and cultural systems. They describe the application and implementation of the FairWild Standard (FWS) as a voluntary certification scheme (VCS) and also provide examples of the integration of the FWS in national and international resource management and regulations and policy.

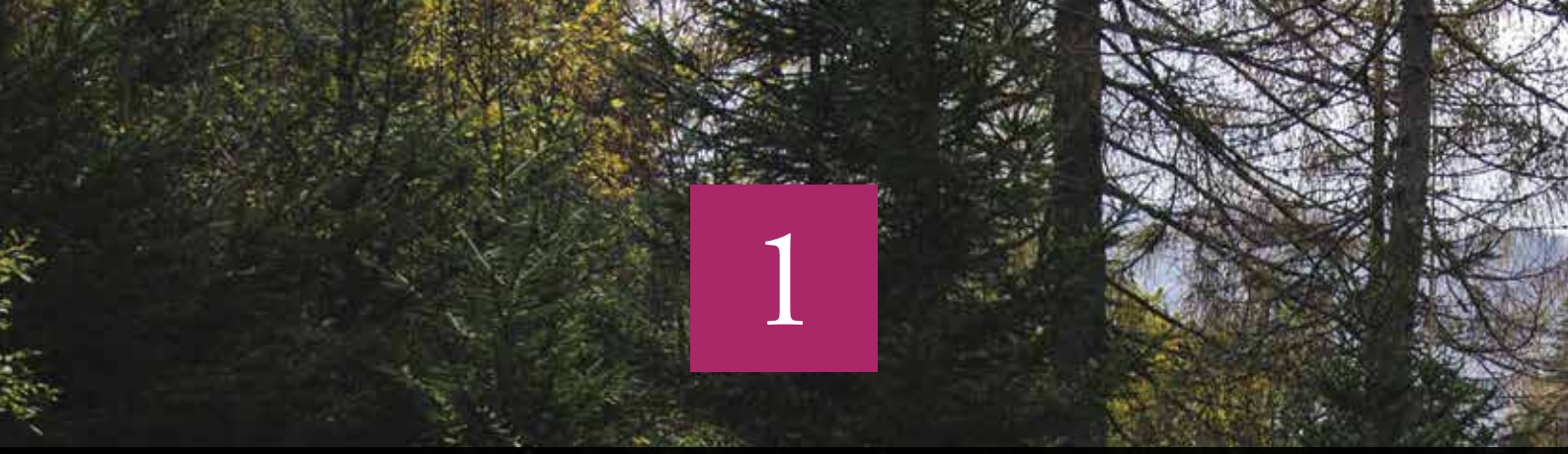
Marion Karmann (Chapter Eight) addresses the challenge of assuring consistency of VSCs across the globe. Building on the case of FSC certification, the paper scrutinizes stakeholder involvement in development of FSC national indicators and the impact of different regional and national conditions and regulations on this process. The paper also formulates recommendations for other multi-stakeholder voluntary certification schemes.

Krystyna Swiderska, Aroha Mead, Graham

Dutfield and Alejandro Argumedo (Chapter Nine) focus on the need for an alternative labeling system that can benefit indigenous communities while protecting biological and cultural diversity. This paper reviews experiences with the Potato Park's informal trademark, the use of Geographical Indications (GIs) and the Maori Organics label. The paper not only provides an insight into creation of indigenous 'labels', it also discusses the design of indigenous labels in general.

In Chapter Ten, Marcus Colchester reviews the development of VCS scheme responses to the evolution of internationally accepted rights of indigenous peoples and the effectiveness of two major VCS schemes (FSC and RSPO) in upholding these rights, particularly related to land, consent, participation, accountability, and redress for violations of these rights. This paper examines the interplay between VCS governance and national legal frameworks, and the potential for improving their effectiveness in upholding indigenous peoples' rights.

Taken together, these 10 chapters provide both broad global and more focused local perspectives on the applications and impacts of VCS on biodiversity conservation and the human livelihoods that depend on the sustainable use of biodiversity resources. Although the papers address many of the main themes and key issues proposed (see Table 1), we believe that further research in these areas is necessary. We hope that this issue of *Policy Matters* provides a useful platform for such future research.



1

Measuring impacts of certification on biodiversity at multiple scales
Experience from the SAN/Rainforest Alliance system and priorities for the future

Jeffrey C. Milder, Deanna Newsom, Eric Lambin, Ximena Rueda

1 Measuring impacts of certification on biodiversity at multiple scales: experience from the SAN/Rainforest Alliance system and priorities for the future

Jeffrey C. Milder[1,2], *Deanna Newsom*[1], *Eric Lambin*[3,4], *Ximena Rueda*[5]

Abstract

Voluntary certification standards (VCS) in agriculture and forestry typically include the protection of biodiversity among their objectives or requirements. This outcome is advanced through a range of mechanisms, from prohibitions on destroying certain types of natural ecosystems to requirements to conserve native species co-occurring in production systems to controls on negative externalities that can harm biodiversity, such as polluted runoff. Conservation results may be achieved at a range of scales—from smallholder farms to large landscapes—and as either direct or indirect consequences of implementing VCS. These myriad considerations point to the need for nuanced evaluation frameworks to understand effects on biodiversity across large certification portfolios while also evaluating the causality of VCS interventions on changes in biodiversity attributes. Here, we synthesize experience and perspectives from the VCS community to present a generalized assessment framework for understanding effects of VCS on biodiversity. We then use the example of the Sustainable Agriculture Network (SAN)/Rainforest Alliance certification system to illustrate the application of this framework to an agricultural standard covering about 3.5 million hectares and 1.2 million producers across 42 countries. The framework integrates evidence from multiple data sources, including basic attributes of certified operations, data on the adoption of biodiversity-friendly practices as revealed by annual audits, and research studies assessing biodiversity outcomes at farm and landscape level. Based on experience from evaluating biodiversity effects of the SAN/Rainforest Alliance system from 2011-2014, we reflect critically on challenges, opportunities, and future priorities for evaluating and improving the biodiversity conservation benefits of VCS more broadly.

Keywords: biodiversity, certification, evaluation, impact assessment, sustainable agriculture

1 Evaluation & Research Program, Rainforest Alliance, New York, NY, USA
2 Department of Natural Resources, Cornell University, Ithaca, NY, USA
3 School of Earth Sciences and Woods Institute for the Environment, Stanford University, Stanford, CA, USA
4 Earth and Life Institute, Universite Catholique de Louvain, Louvain-la-Neuve, Belgium
5 School of Management, Universidad de los Andes, Bogotá, Colombia

Introduction

Most of the major voluntary certification standards (VCS) in agriculture and forestry include the protection of biodiversity among their objectives or requirements (International Trade Centre, 2016). For instance, a review of 12 agricultural VCS indicated that all 12 included requirements for habitat protection; 10 prohibited clearance of certain land-cover types; 9 specified criteria for priority habitat areas; 8 addressed impacts to threatened species; and 7 included measures to address invasive species (UNEP-WCMC, 2011). Most standards also address natural resource management issues that can directly or indirectly affect biodiversity, such as water pollution, soil erosion, agrochemical use, waste management, and greenhouse gas emissions.

The recent rapid uptake of VCS in key sectors linked to biodiversity loss, such as various internationally traded tropical agricultural commodities (Potts et al., 2014), suggests that VCS could play an important role in mitigating leading global biodiversity threats. But there has historically been a dearth of evidence on the actual impacts of VCS adoption on biodiversity conservation and other social and environmental outcomes (Blackman et al., 2011). However, over the past few years, this situation has begun to change as VCS systems have upgraded their monitoring and evaluation (M&E) capabilities, as the VCS community has collaborated to define and implement best practices in M&E and impact assessment (e.g., ISEAL Alliance, 2014), and as researchers and others have focused on increasing both the quantity and rigor of studies evaluating the outcomes and impacts of VCS (Steering Committee, 2012).

In this paper, we review recent developments in the evaluation of biodiversity impacts of VCS, analyze the suitability of current approaches, and recommend further actions and investments to fill evidence gaps such that decision-makers can effectively understand and further improve biodiversity impacts of VCS. We begin by presenting a generic framework for evaluating biodiversity impacts of VCS. Next we illustrate how this framework has been applied in the case of the Sustainable Agriculture Network (SAN)/Rainforest Alliance certification scheme. Reflecting on this example, we highlight challenges, opportunities, and priorities for the VCS community and researchers to strengthen the base of decision-relevant evidence on biodiversity impacts of VCS.

A generalized framework for evaluating biodiversity impacts of VCS

Under the Convention for Biological Diversity (CBD), biodiversity is construed broadly to include the diversity of living organisms on Earth as well as the terrestrial and aquatic ecosystems of which they are part (United Nations, 1992). In addition, through its strategic plan and Aichi Biodiversity Targets, the CBD recognizes a range of actions necessary to conserve biodiversity, including not only the protection of species and habitats but also a reduction in threats such as pollution and invasive species (CBD, 2010). Consistent with this multi-faceted approach, biodiversity conservation impacts of VCS may be delivered and evaluated in three main ways (Milder et al., 2015):

1. **Conserving existing natural ecosystems and their associated biodiversity:** many VCS prohibit the destruction or conversion of certain natural ecosystems (e.g., natural forests or High Conservation Value areas) and some require certified operations to manage or restore on-site ecosystems to protect or enhance their biodiversity value. Some standards help conserve

species by prohibiting hunting, wildlife capture, or collection of endangered plants.

2. **Improving the conservation value of production systems and landscapes:** many VCS encourage or require conservation-friendly management of production systems, through measures such as maintaining or enhancing tree canopy cover, protecting or restoring other native vegetation, and conserving riparian zones. These actions can contribute to enhancing conservation value in the "matrix" of working lands that are increasingly recognized as critical for species survival (Perfecto et al., 2009).
3. **Reducing off-site environmental impacts:** nearly all VCS address agronomic and natural resource management issues such as soil erosion, water conservation, water quality, nutrient management, and pesticide use. Such requirements can mitigate threats to aquatic biodiversity from eutrophication, sedimentation, or hydrologic alteration, and threats to all biodiversity from toxic chemicals and (less directly) climate change.

Each of these "impact pathways" may be evaluated at three different levels, ranging from the most direct to the least so: i) adoption of specific best management practices (BMPs) or VCS requirements associated with the impact area; ii) documentation of proximate outcomes at the level of individual certified entities (e.g., farms, forest management units, farmer or forest owner groups, or mills); or iii) documentation of broader outcomes at the level of landscapes, watershed, or regions (Milder et al., 2015).

Taken together, the three impact pathways and three results levels define a three-by-three "evaluation matrix" that can be used to characterize evaluation or research efforts assessing biodiversity impacts of VCS.

Case example: the SAN/Rainforest Alliance certification system

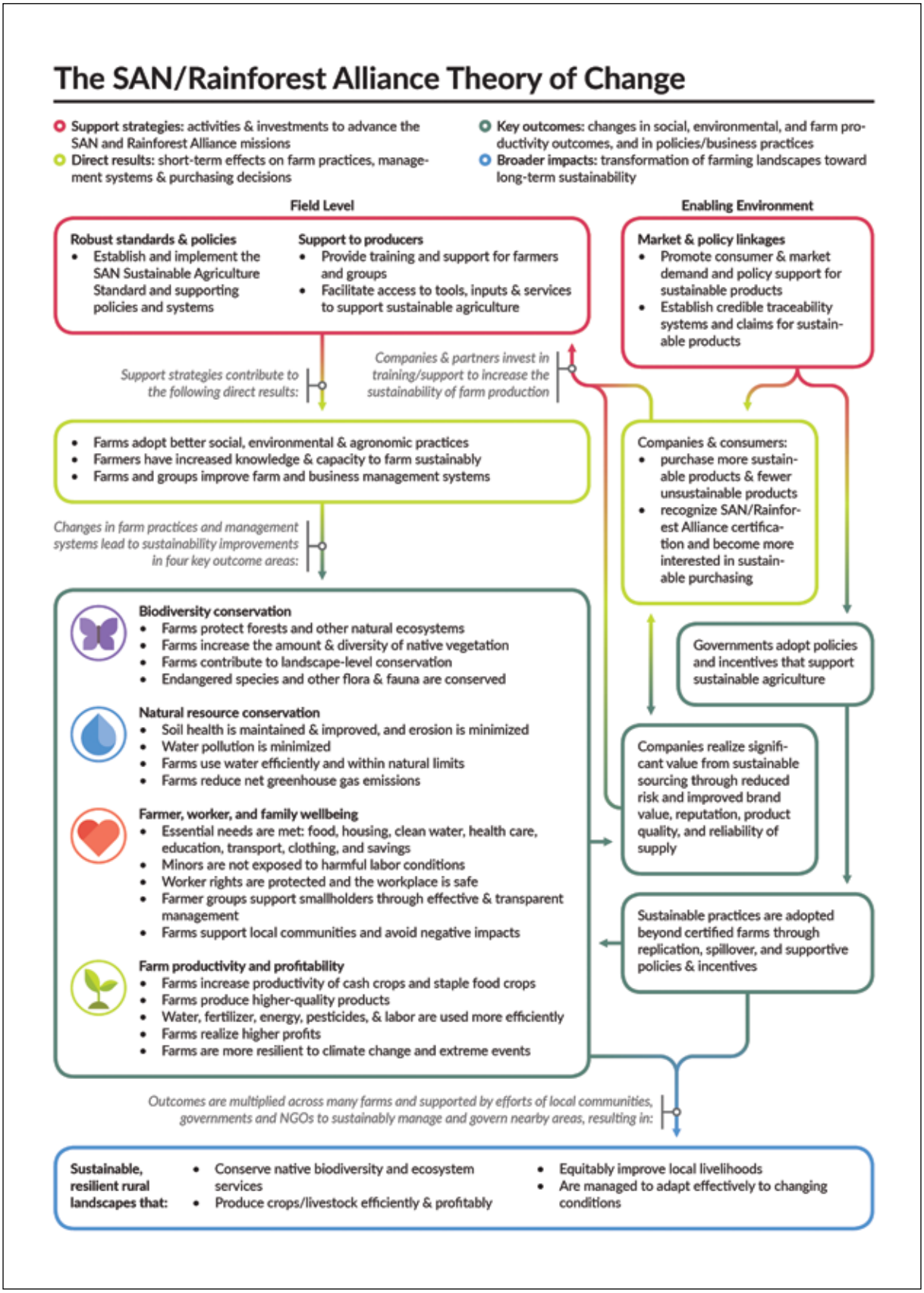
To illustrate the application of this generalized evaluation framework in practice, in this section we present a case example of monitoring and impact assessment for the SAN/Rainforest Alliance certification system. SAN/Rainforest Alliance is a global certification scheme that is currently applied on about 3.5 million hectares across 42 mostly tropical and sub-tropical countries. The scheme certifies more than 100 different crops, with coffee, cocoa, tea, and bananas comprising the largest land areas and numbers of producers.

Conservation hypotheses: the Theory of Change

A "theory of change" is a logical framework that defines the means by which an organization or project aims to achieve specific objectives and outcomes through targeted sets of activities or investments. Conservation scientists and practitioners increasingly recognize the value of using a theory of change or results chains to define the intended consequences and hypothesized impact pathways of any given conservation intervention (Margoluis et al. 2013). The ISEAL Alliance also identifies the development of a theory of change as an important step for certification schemes to clarify intended outcomes and establish an M&E framework (ISEAL Alliance, 2014).

The SAN/Rainforest Alliance Theory of Change (Figure 1) defines a four-step results chain in which support strategies (e.g., standard setting, standard implementation, and field support) lead to results at three different levels, mirroring the three results levels identified in the generic framework presented above. These levels include direct results (changes in

Figure 1. The SAN/Rainforest Alliance Theory of Change.



farm management practices, knowledge and capacity), key outcomes (farm-level changes in social, environmental, and farm performance), and broader impacts (transformation of farming landscapes toward long-term sustainability). At the outcome level, the Theory of Change defines four thematic outcome areas: i) biodiversity conservation; ii) natural resource conservation; iii) farmer, worker and family wellbeing; and iv) farm productivity and profitability.

Indicators and means of measure

The M&E framework for the SAN/Rainforest Alliance certification system derives from the Theory of Change, and includes one or more specific indicators related to each of the outcomes (Milder & Newsom, 2015; see Table 1). Practice adoption indicators (Table 1, middle column) are useful for evaluating hypotheses about whether support strategies (e.g., training and certification) lead to changes in the implementation rates of biodiversity-related BMPs. In some cases, when practice adoption is itself equivalent to—or prima facie evidence of—conservation outcomes, data from practice adoption indicators may be used to infer outcome-level results. For instance, the requirement of the SAN standard to conserve all natural ecosystems can be considered both a practice and an outcome. In a less direct way, the adoption of management practices such as increased agroforestry tree cover and protection of riparian buffers may serve as a plausible proxy for biodiversity conservation outcomes where there is strong and consistent evidence that these practices deliver conservation benefits compared to alternative practices (Bhagwat et al., 2008; De Beenhouwer et al., 2013; Newsom et al., 2012; Tscharntke et al., 2015).

Moving further along the results chain, outcome indicators (Table 1, right column) are used to test whether certification (via the implementation of biodiversity-related BMPs) leads to farm- or landscape-level outcomes in landscape composition and structure, sustained populations of native plant or animal species, improvements in water quality downstream of certified farms, or other parameters.

Within the M&E system, these indicators are generally evaluated in two different ways. First, some practice adoption data, along with basic information about each certificate, are collected across the entire certificate portfolio through the auditing mechanism. This approach is useful for documenting characteristics of certified entities and rates of adoption for various BMPs; however, it is limited by the scope of the certification audit and cannot furnish data on many outcome-level results. A second approach to evaluating indicators involves focused research to collect in-depth evidence on farm- and landscape-level outcomes from a subset of producers or landscapes. Studies may collect data on practice adoption, farm-level outcomes, landscape-level outcomes, or all three. Farm-level studies often compare certified production units to non-certified or pre-certified ones, or apply a difference-in-differences approach to track changes on both certified and non-certified operations. While focused research is better able than routine portfolio-wide monitoring to attribute observed results to certification interventions, it is resource intensive and therefore realistically can generate direct evidence on only a small portion of the certification portfolio.

Evaluation results

To date, the M&E system has furnished evaluation results related to all three of the biodiversity impact pathways described in the generalized framework. Here, we summarize this body of evidence and the range of evaluation approaches used to generate it.

Of the three biodiversity impact pathways identified in the framework, evidence on the conservation value of production systems and landscapes is the most abundant. Studies of all four of the largest SAN-certified crops—coffee,

Table 1. SAN/Rainforest Alliance monitoring and evaluation system indicators related to biodiversity conservation and natural resource conservation outcomes specified in the Theory of Change.

Theory of Change results theme	SAN/Rainforest Alliance M&E system indicators	
	Intended to be assessed for all certificates through auditing and traceability processes	Intended to be assessed for a sample of certified operations, or as part of impact studies
Biodiversity: Farms protect forests and other natural ecosystems	Land area under conservation management, by location and management objective	Rate of ecosystem destruction or restoration compared to surrounding areas
	Conformance with key SAN criteria, by crop and location	Water quality and habitat quality characteristics in aquatic natural ecosystems
Biodiversity: Farms increase the amount and diversity of native vegetation	Conformance with key SAN criteria, by crop and location	Quantity and diversity of on-farm vegetation
Biodiversity: Farms contribute to landscape-level conservation	Conformance with key SAN criteria, by crop and location	Changes in landscape composition and structure following certification
Biodiversity: Endangered species are protected and all native flora and fauna are conserved	Conformance with key SAN criteria, by crop and location	Presence, abundance, or survivorship of species in key taxa around certified farms
Natural resources: Soil health is maintained and improved, and erosion is minimized	Conformance with key SAN criteria, by crop and location	Adoption of specific practices to foster soil conservation and health
		Fertilizer application rates relative to crop requirements
		Sediment load in receiving water bodies on or near certified farms
Natural resources: Water pollution is minimized	Conformance with key SAN criteria, by crop and location	Chemical and biological properties of receiving water bodies on or near certified farms
Natural resources: Farms use water efficiently and within natural limits	Conformance with key SAN criteria, by crop and location	Quantity of irrigation water used per unit crop produced (irrigated crops only)
Natural resources: Farms reduce net greenhouse gas emissions	Conformance with key SAN criteria, by crop and location	Estimates of net GHG emissions based on existing calculator tools

tea, cocoa and bananas—found that certified farms performed better than their non-certified neighbors with regard to the creation and maintenance of riparian buffer zones and the retention and planting of shade trees. Compared to non-certified farms, SAN-certified farms had more tree species per hectare (Rueda & Lambin, 2013) and a higher rate of tree cover increase (Rueda et al., 2015), although one study found no difference in canopy cover or the number of emergent trees (Komar, 2012). Time series analysis showed increased BMP adoption for many conservation-related topics but not all. Coffee, tea, and cocoa farms (but not banana farms) increased uptake of BMPs related to creation and maintenance of riparian buffers (criterion 2.5) and creation of buffers between areas of chemical use and natural ecosystems (criterion 2.6) (Milder & Newsom, 2015). Nearly all coffee farms were in compliance (or came into compliance) with shade cover and tree species diversity parameters for agroforestry

shade canopies, but few cocoa farms complied with these parameters. All three studies that have examined the contribution to conservation value at a landscape level found positive effects of SAN/Rainforest Alliance certification (Rueda et al., 2015; Hardt et al., 2015; Takahashi & Todo 2013). For instance, Rueda and colleagues (2015) found that dense forest cover had increased in landscapes with substantial areas of certified agriculture, improving forest connectivity.

Several studies have examined the role of certification in reducing off-site environmental impacts. Eight studies found that SAN-certified farms implemented BMPs in the following areas at higher rates than nearby non-certified farms: wastewater treatment, downstream water quality monitoring, agrochemical reduction and safe storage, and the use of soil analytics to guide fertilizer and agrochemical application. Two studies documented certificate-level outcomes related to off-site environmental impacts: one found that SAN-certified coffee farms had better wastewater treatment and less erosion around water sources than non-certified farms (Haggar et al., 2012) while another documented improved water quality as indicated by the Stream Visual Assessment Protocol and levels of pollution-intolerant aquatic species (Hughell & Newsom, 2013). Time series analysis based on audit data revealed improvements in the uptake of BMPs related to off-site environmental impacts, including practices addressing wastewater treatment, water quality monitoring of discharge, water quality monitoring of downstream water bodies, and the rotation and reduction of agrochemical use.

The impact pathway with the least amount of independent research is the conservation of existing natural ecosystems and their associated biodiversity. However, with regard to this pathway, the SAN standard includes strict requirements to protect existing natural ecosystems. These requirements are reflected in audit data by the full adoption of SAN criterion 2.1 (which requires the protection and restoration of natural ecosystems) and criterion 2.2 (which prohibits the destruction of natural ecosystems).

In terms of the quantity of evidence at each level of the results chain, the largest amount of evidence relates to direct results (i.e., implementation of BMPs): a total of nine studies have compared rates of adoption of biodiversity-related BMPs on SAN-certified vs. non-certified farms, while time-series trajectories of practice adoption have been evaluated for 219 certificates across 13 countries. Seven studies evaluated farm-level outcomes (focused mainly on coffee farms) while three studies examined landscape-level biodiversity outcomes (focused exclusively on landscapes with certified coffee farms).

Evaluation gap analysis

Using the structure of the generalized evaluation framework, we conducted a gap analysis to characterize the level of evidence on effects of SAN/Rainforest Alliance certification on different biodiversity-related results and to identify gaps and priorities for future work (Table 2). Overall, there is relatively strong evidence that certified farms implement best management practices at higher rates than non-certified farms, and that rates of adoption increase over time on certified farms (see Milder & Newsom, 2015, for a review of the literature on BMP adoption rates for certified and non-certified coffee, cocoa, tea and banana farms). Given that this evidence already exists – but that studies on BMP adoption can offer at best proxy information on biodiversity outcomes – we consider further research on BMP adoption to be a lower priority for future research.

In contrast, field research that compares farm-level outcomes on certified and non-certified farms is a higher priority. Due to the relatively high costs of field research, long time periods sometimes necessary to observe effects, and other methodological issues (described in the following section), there remains insufficient evidence on farm-level outcomes for all biodiversity-related themes. Research priorities include investigating

Table 2. Gap analysis characterizing the level of evidence on effects of SAN/Rainforest Alliance certification on different biodiversity-related results and identifying priorities and suggested topics for future evaluation and research work. "C/NC" signifies a comparison of certified versus non-certified scenarios. The stated priority levels are based on the authors' assessment of the quality of the existing base as well as the expected utility of additional research results. Under the impact pathway "conserving existing natural ecosystems," BMP adoption and certificate-level outcomes are merged because best practices required by certification (e.g., conserve natural ecosystems) are equivalent to certificate-level outcomes (e.g., existing natural ecosystems are protected from destruction or degradation).

Impact pathway	Evaluation level		
	Adoption of BMPs	Documentation of farm-level outcomes	Documentation of landscape-level outcomes
Conserving existing natural ecosystems	Existing level of evidence: **medium** Priority for future work: **medium** Suggested topics: C/NC comparisons of the size, configuration, health, and management regime of on-farm natural ecosystem set-asides		Existing level of evidence: **low** Priority for future work: **high** Suggested topics: Spatially explicit analysis of contribution of on-farm natural ecosystems to composition and structure of habitats at landscape level Spatial explicit analysis of changes to landscape composition and structure in landscapes with C/NC
Improving the conservation value of production systems & landscapes	Existing level of evidence: **high** Priority for future work: **low** Suggested topics: C/NC comparison of BMP adoption for crops and regions with less evidence	Existing level of evidence: **low** Priority for future work: **high** Suggested topics: C/NC comparisons of on-farm native vegetation (including canopy cover), riparian zones, water quality C/NC comparisons or time-series analysis of populations of key species on and around farms	Existing level of evidence: **low** Priority for future work: **high** Suggested topics: C/NC comparisons of off-farm impacts including based on potential spillover effect C/NC comparisons of aggregate effects of many clustered certified areas on populations of key species
Reducing off-site environmental impacts	Existing level of evidence: **high** Priority for future work: **low** Suggested topics: C/NC comparison of BMP adoption for crops and regions with less evidence	Existing level of evidence: **low** Priority for future work: **high** Suggested topics: C/NC comparisons related to soil erosion, water quality, and pesticide effects	Existing level of evidence: **low** Priority for future work: **high** Suggested topics: research to quantifies or model aggregate effects of certification-related BMPs on water quality, water flow, or pesticide effects

on-farm and downstream water quality and aquatic biodiversity, soil health, on-farm native vegetation (including shade canopy cover), and on-farm faunal populations. Spatially explicit assessments of landscape-level outcomes, where feasible, are also a high priority. Examples include evaluating the effects of certification on landscape composition and structure (e.g., functional connectively of natural ecosystems) and modeling effects of certification-related BMPs on watershed

health (e.g., water quality or water flow at larger scales, where there are concentrations of certified farms).

Challenges, opportunities, and recommendations for improving impact evaluation

Reflecting on experience from the SAN/Rainforest Alliance case example as well as other trends in M&E for VCS and broader developments in data availability and analysis, in this section we identify salient challenges, opportunities, and priorities for improving the evaluation of biodiversity effects of VCS more broadly.

Spatial location of certified units

Recent years have witnessed a revolution in the availability of geographical and environmental data. A global, historical Landsat archive is now on-line through the Google Earth Engine; new Earth observation satellites are being launched, recording data at ever greater spatial, temporal and spectral resolutions; new web-based service platforms facilitate access to these data at low cost; crowdsourcing of local data enhances the validation of global scale maps; and global-scale value-added products such as forest cover change, above-ground biomass, forest fires, and deforestation in places tied to commodity supply chains are freely accessible on-line, notably through the Global Forest Watch web site. For some of these data, time series covering a couple of decades are available, thus allowing measurement of land cover dynamics since the adoption of certification. The high spatial resolution of some of the remote sensing data facilitates evaluation research that links socio-economic data with land cover data at the level of individual decision-making units (i.e., farms).

The impact pathway with the least amount of independent research is the conservation of existing natural ecosystems and their associated biodiversity.

To exploit these rich data to evaluate farm- and landscape-level outcomes of VCS will require precise location information for each farm unit to identify samples of certified and non-certified farms for comparison. Ideally, these data should include exact farm boundaries and an identification of each cultivated plot, especially when certification does not concern the entire production of a farm. While almost all certification programs recognize the utility of spatial data on certified operations, each program is on its own path to acquire that information. For example, the Rainforest Alliance currently publishes an online map with point data for SAN/Rainforest Alliance certificates (http://www.rainforest-alliance.org/work/impact/map) while the Roundtable on Sustainable Palm Oil, with its focus on larger plantations, requires public disclosure of concession boundary data. Other schemes release no spatial data publicly, but have contributed information toward compiling a global atlas of certified lands (http://www.conservation.cam.ac.uk/collaboration/eco-certification-tropical-crops).

Selection bias and rigorous counterfactual

It is well-known that the incremental benefits of VCS relative to a pre-certification baseline may be limited by selection effects—i.e., the phenomenon that producers already conforming to the requirements of certification standards may have stronger incentives to participate in such programs as the cost of compliance is lower for them than for laggards. Rigorous assessment of the effects of certification is complicated by this potential selection bias (Crosse et al., 2011). Research designs with a rigorous counterfactual can help avoid bias in estimates of the impacts of certification (Blackman & Rivera, 2011). Methods

such as propensity score matching may be used when the researcher is not able to conduct randomized designs by selecting *a priori* which farms will be certified or not certified.

Attribution challenges

Assessment of the effects of VCS is also complicated by confounding factors, such as technological progress and market changes that may improve or diminish producers' performance over time for reasons unrelated to certification (Crosse et al., 2011). Moreover, not all differences between farmers in the treatment and control groups are observed. For these reasons, the most rigorous impact evaluation method is based on a matched difference-in-differences design (Heilmayr & Lambin, 2016; Van Rijsbergen et al., 2016; Ruben & Fort, 2012; Ibanez & Blackman, 2016). After matching a sample of treatment and control units – for instance through the use of propensity score matching – the average effect of the VCS on BMP adoption rates or ecosystem change parameters is measured for certified farms. Longitudinal data are used to control for unobserved, time-invariant characteristics of the farming units. Panel methods are then used to calculate the difference between treatment and control groups in time differences in performances, therefore controlling for confounding factors that affect both groups. This approach creates quasi-experimental results (Ferraro & Miranda, 2014). It requires time series of observations for both certified and non-certified farms and, in particular, baseline data to represent the pre-certification situation. Baseline data have rarely been measured as program evaluation is often an after-thought in resource-scarce VCS programs. The method is heavily dependent on untested assumptions and thus reporting on credibility checking of those assumptions has been recommended (Lampach & Morawetz, 2016).

Cumulative and interactive effects, and additionality

VCS are never implemented in an institutional void: rather, they interact with other public

and private policies and incentives that also influence decision-making by producers. These multiple policies often work in synergy but sometimes work at cross-purposes. For instance, governments create enabling conditions for private governance to be more effective and scale-up; the state provides extension services that support (or may undermine) implementation of BMPs required by certification standards; governments set up the rule of law and define land rights; and governments remove (or institute) bottlenecks in supply chains and influence consumer awareness and expectations for businesses (Lambin et al., 2014). It is also common for farmers to obtain multiple certifications to hedge their risk and sell at the highest price available at any given time. Often, evaluation programs ignore these interactions between governance regimes and assess the effectiveness of a particular VCS as if it were implemented in isolation. In reality, success stories may be attributed to multiple, independent programs reinforcing each other in complex policy mixes, e.g., following a "carrot-and-stick" configuration. Accounting for the policy ecosystem in which VCS are implemented is therefore essential, although challenging.

These policy interactions raise the question of additionality – that is, whether VCS are producing additional impact on ecosystem conservation beyond a "business-as-usual" scenario.

These policy interactions raise the question of additionality – that is, whether VCS are producing additional impact on ecosystem conservation beyond a "business-as-usual" scenario. This is not necessarily the same as asking whether VCS improve conservation outcomes: in contexts where the prevailing trajectory is one of declining ecosystem health (as it frequently is in tropical production landscapes), interventions to maintain existing conservation status may be construed as bringing additional benefit compared to business-as-usual. Measuring additionality becomes more complex when considering the underlying landscape matrix. As certified farms are part of a landscape mix of conservation areas, forest remnants and other land uses, the effects of VCS on biodiversity enhancement depend greatly on the spatial configuration of the landscape matrix and the proximity of the farms to core reserves and other landscape features.

Conclusions

As VCS schemes have upgraded their M&E systems and the scientific community has increased the quantity and rigor of research on impacts of VCS, the once-accurate refrain that environmental effects of VCS are largely unknown no longer holds true. Certainly, the evidence base is far from complete: as with most other conservation interventions, effects of VCS are difficult to generalize across diverse settings and crops, as the evidence base that does even come close to sampling fully from these disparate contexts suggests. Nevertheless, as illustrated by the case of the SAN/Rainforest Alliance certification scheme, mutually corroborating evidence related to some sets of biodiversity-related results have begun to emerge when portfolio-wide evidence from internal M&E systems is combined with more detailed research studies, including those with credible counterfactuals. Such evidence provides a foundation upon which future evaluation and research efforts can build in a targeted way to fill key gaps such as those defined in this paper.

More broadly, the time is ripe for a large-scale, systematic effort to monitor and adaptively

manage VCS to create a feedback loop toward continuous improvement and increased effectiveness of these private instruments for environmental governance. Such a system is now possible based on recent progress in the availability of environmental data and in the sophistication of evaluation methods based on counterfactuals. In its broad outline, such a global system would overlay property boundaries of all certified operations on high spatial resolution environmental databases such as Global Forest Watch. It would track over time environmental indicators such as forest-cover change, biomass, ecosystem-level biodiversity, and landscape connectivity. Panel analyses would compare trends in these indicators from a baseline – ideally, the year of adoption of VCS for every unit – to a random matched sample of farms that do not participate to the VCS. The very large number of observations would allow analyzing impacts of VCS in diverse policy contexts, therefore facilitating an analysis of interactions between multiple private and public policies. In a similar way that "big data" methods have revolutionized other fields, the large volumes of geo-referenced data on the adoption of VCS and its component BMPs at the level of production units has the potential to greatly improve the deployment, understanding, and policy support for sustainable production systems. A more systematic, large-scale evaluation would increase the effectiveness of VCS through better targeting of places and actors that are lagging in environmental performance, fine tuning of standards to local priority issues, rapid detection of areas with low compliance or additionality, and design of optimal policy mixes.

References

Bhagwat, S.A., Willis, K.J., Birks, H.J.B. & Whittaker, R.J. (2008). Agroforestry: a refuge for tropical biodiversity? *Trends in Ecology & Evolution, 23*, 261-267.

Blackman, A. & Rivera, J. (2011). Producer-level benefits of sustainability certification. *Conservation Biology 25*, 1176-1185.

CBD [Convention on Biological Diversity]. (2010). COP 10 Decision X/2: Strategic Plan for Biodiversity 2011-2020. Retrieved from https://www.cbd.int/decision/cop/?id=12268

Crosse, W., Newsom, D. & Kennedy, E. (2011). Recommendations for improving certification impacts. Appendix I. Toward sustainability: the roles and limitations of certification. Washington, DC: RESOLVE, Inc.

De Beenhouwer, M., Aerts, R. & Honnaya, O. (2013). A global meta-analysis of the biodiversity and ecosystem service benefits of coffee and cacao agroforestry. *Agriculture, Ecosystems & Environment, 175*, 1-7.

Ferraro, P.J. & Miranda J.J. (2014). The performance of non-experimental designs in the evaluation of environmental programs: A design-replication study using a large-scale randomized experiment as a benchmark. *Journal of Economic Behavior & Organization, 107*(Part A), 344–365.

Haggar, J., Cuadra, L., Alvarado, U., & Soto, G. (2012). Environmental and economic costs and benefits from sustainable certification of coffee in Nicaragua. *Food Chain, 2*: 24–41.

Hardt, E., Borgomeo, E., dos Santos, R. F., Pinto, L. F., Metzger, J. P., & Sparovek, G. (2015). Does certification improve biodiversity conservation in Brazilian coffee farms? *Forest Ecology and Management, 357,* 181–194.

Heilmayr R. & Lambin E.F. (2016). Effectiveness of collaborative versus confrontational market governance of deforestation: the case of Chile. *Proceedings of the National Academy of Sciences*, doi/10.1073/pnas.1600394113.

Hughell D. & Newsom D. (2013). Impacts of Rainforest Alliance certification on coffee farms in Colombia. New York: Rainforest Alliance.

Ibanez, M., & Blackman, A. (2016). Is eco-certification a win–win for developing country agriculture? Organic coffee certification in Colombia. *World Development, 82*, 14-17.

International Trade Centre. (2016). Standards Map. Retrieved from http://www.intracen.org/standardsMap

ISEAL Alliance. 2014. Assessing the impacts of social and environmental standards systems: ISEAL code of good practice, Version 2.0. London, U.K.: ISEAL Alliance.

Komar O. (2012). Are Rainforest Alliance Certified coffee plantations bird-friendly? Final technical report for UNDP/RA/GEF Biodiversity Conservation in

Coffee Project. Retrieved from http://www.rainforest-alliance.org/publications/komar-bird-study
Komives, K., Milder, J.C., Arbuthnot, M., Kennedy, E.T., & Stephenson, P.J. (2016). Progress and innovations in monitoring and improving the impacts of sustainability standards on biodiversity and livelihoods. *Policy Matters*, 21.
Lambin E.F., Meyfroidt P., Rueda X., Blackman A., Börner J. Cerruti P.O., Dietsch T., Jungmann L., Karsenty A., Lamarque P., Lister J., Walker N.F., & Wunder S. (2014). Effectiveness and synergies of policy instruments for land use governance in tropical regions. *Global Environmental Change, 28*, 129-140.
Lampach, N., & Morawetz, U. B. (2016). Credibility of propensity score matching estimates. An example from Fair Trade certification of coffee producers. *Applied Economics*, 1-11. doi: 10.1080/00036846.2016.1153795
Margoluis, R., Stem, C., Swaminathan, V., Brown, M., Johnson, A., & Placci, G. (2013). Results Chains: A Tool for Conservation Action Design, Management, and Evaluation. *Ecology and Society, 18*(3), Article 22. http://www.ecologyandsociety.org/vol18/iss3/art22/.
Milder, J. C., Arbuthnot, M., Blackman, A., Brooks, S. E., Giovannucci, D., Gross, L., Kennedy, E. T., Komives, K., Lambin, E. F., Lee, A., Meyer, D., Newton, P., Phalan, B., Schroth, G., Semroc, B., Van Rikxoort, H., & Zrust, M. (2015). An agenda for assessing and improving conservation impacts of sustainability standards in tropical agriculture. *Conservation Biology,* 29(2), 309–320. doi. org/10.1111/cobi.12411
Milder, J. C. & Newsom, D. (2015). 2015 SAN/ Rainforest Alliance impacts report: evaluating the effects of the SAN/Rainforest Alliance certification system on farms, people, and the environment. New York: Rainforest Alliance and México D.F., México: Sustainable Agriculture Network.
Newsom, D., Kennedy, E., Miller, J., Bahn, V., & Adhikari, S. (2012). Testing a BMP-based approach for assessing gaps in certification impacts research. Appendix H. Toward sustainability: the roles and limitations of certification. Washington, DC: RESOLVE, Inc.
Perfecto, I., Vandermeer, J., & Wright, A. (2009). *Nature's matrix: Linking agriculture, conservation and food sovereignty*. London, U.K.: Earthscan.
Potts, J., Lynch, M., Wilkings, A., Huppe, G., Cunningham, M. & Voora, V. (2014). The state of sustainability initiatives review 2014. Winnipeg, Canada: International Institute for Sustainable Development and London, U.K.: International Institute for Environment and Development.
Ruben, R., & Fort, R. (2012). The impact of fair trade certification for coffee farmers in Peru. *World Development*, 40(3), 570-582.
Rueda, X., & Lambin, E.F. (2013). Responding to globalization: impacts of certification on colombian small-scale coffee growers. *Ecology and Society, 18*(3): 21.
Rueda, X., Thomas, N. E., & Lambin, E. F. (2015). Eco-certification and coffee cultivation enhance tree cover and forest connectivity in the Colombian coffee landscapes. *Regional Environmental Change, 15*(1), 25-33. doi.org/10.1007/s10113-014-0607-y
Steering Committee of the State-of-Knowledge Assessment of Standards and Certification. (2012). Toward sustainability: the roles and limitations of certification. Washington, DC: RESOLVE, Inc.
Takahashi , R. & Todo, Y. (2013). The impact of a shade coffee certification program on forest conservation: A case study from a wild coffee forest in Ethiopia. *Journal of Environmental Management, 130*, 48-54.
Tscharntke, T., Milder, J. C., Clough, Y., Declerck, F., Waldron, A., Rice, R., & Ghazoul, J. (2015). Conserving biodiversity through certification of tropical agroforestry crops at local and landscape scales. *Conservation Letters, 8*(1), 14–23. doi. org/10.1111/conl.12110
van Rijsbergen, B., Elbers, W., Ruben, R., & Njuguna, S. N. (2016). The ambivalent impact of coffee certification on farmers' welfare: A matched panel approach for cooperatives in Central Kenya. *World Development, 77*, 277-292.
UNEP-WCMC. (2011). Review of the biodiversity requirements of standards and certification schemes. CBD Technical Series No. 63. Montreal, Canada: Secretariat of the Convention on Biological Diversity.
United Nations. (1992). Convention on Biological Diversity. Retrieved from https://www.cbd.int/ convention/text

2

The Efficacy of Voluntary Certification Standards for Biodiversity Conservation

Joanne Khew Yu Ting, Kudo Shogo, Marcin Pavel Jarzebski

2 The Efficacy of Voluntary Certification Standards for Biodiversity Conservation

Joanne Khew Yu Ting[1], *Kudo Shogo*[2], *Marcin Pavel Jarzebski*[3]

Abstract

While rural livelihood improvements under voluntary certification schemes (VCS) have been widely quantified, biodiversity conservation goals are often broadly evaluated as percentage land-use change adverted in VCS-covered ecosystems. In this meta-review, we investigated the efficacy of biodiversity conservation in existing voluntary certification schemes and their associated voluntary certification standards. We focus on review publications that empirically quantified the success of biodiversity conservation and/or offer recommendations for improvement.

In this paper, the 29 VCS evaluated were classified into VCS for 1) Payment for Ecosystem Services (PES) schemes, 2) eco-labeling for marine and agricultural commodities and 3) environmental corporate social responsibility (ECSR) schemes. Case studies in developing countries constituted about 48 percent of all reviewed papers and tropical rainforest was the dominant ecosystem of focus. Quantification of biodiversity conservation outcomes was undertaken almost equally at both the habitat and species level. The former was carried out largely through preventing deforestation under schemes like the UN's Reducing Emissions from Deforestation and Forest Degradation (REDD/REDD+) program. Species-level conservation was implemented through eco-labeling (e.g. Marine Stewardship Council), planting of productive native plants and paying local populations to conserve target species (e.g. Rainforest Alliance's certified farms).

Despite considerable potential for biodiversity conservation, 83 percent of the reviewed papers evaluated current VCS outcomes as negative or ambivalent. Although information on obtaining VCS certification was readily available, improvement is critical to enhance VCS in compromising between conservation and economic demands through 1) managing stakeholder expectations; 2) targeting locally relevant habitats and species through adequate post-certification quantitative monitoring; and 3) ensuring flexibility for climate-change adaptation.

Keywords: Payment for Environmental Services, Eco-labeling, Environmental Corporate Social Responsibility, Meta-review, Biodiversity

1 Graduate Program in Sustainability Science, Graduate School of Frontier Sciences, The University of Tokyo. Rm 334, Building of Environmental Studies, 5-1-5 Kashiwanoha, Kashiwa City, Chiba 277-8563 Japan, joannekhew@sustainability.k.u-tokyo.ac.jp/

2 Graduate Program in Sustainability Science, Graduate School of Frontier Sciences, The University of Tokyo

3 Graduate Program in Sustainability Science, Graduate School of Frontier Sciences, The University of Tokyo

1. Introduction

Biodiversity conservation is a long-established practice that has evolved alongside the field of natural resource management. From the outset, in light of evidence showing that anthropogenic-driven habitat-loss has been the main driver of species extinctions (Pimm et al., 1995; Sodhi et al., 2004), a leading method in biodiversity conservation has been through the law-enforced creation of nature reserves (Miller & Hobbs, 2002; Van Dyke, 2008). However, recent literature has questioned the extent to which reserves have been effective at achieving conservation goals (McKinney, 2002; Miller & Hobbs, 2002). Studies by Grumbine (1990), McNeeley et al. (1994) and Newmark (1995) have found that the current total land area dedicated to nature reserves may be too small to be effective in halting species extinctions. Furthermore, the total area of built environments alone, excluding the land modified in light of anthropogenic impacts (i.e. the indirect effects of urbanization), exceed the total area allocated for nature conservation in countries such as the United States (McKinney, 2002). Considering a continuing trend of urbanization (United Nations, 2005), this situation may become quickly evident in throughout the world (Dearborn & Kark 2010; McKinney, 2002).

Consequently, the focus of biodiversity conservation planning has gradually broadened to include non-reserve areas like community forests (Jongman, 1995, Saunders et al. 1991), and economic mechanisms coupled to sustainable natural resource management strategies (i.e. extractive resource use). Since the 1950s, multi-sectorial voluntary certification schemes (VCS) have been recognized as a positive force for improving rural livelihoods while simultaneously meeting terrestrial and marine biodiversity conservation goals. VCS that target biodiversity conservation can be broadly divided into three categories, based on their funding mechanisms:

1. Payments for conserving natural resources through international or national market-based financial networks (e.g. The United Nations' Reducing Emissions from Deforestation and Forest Degradation (REDD)) (Dinerstein et al., 2012),
2. Consumer-driven purchase of eco-labeled natural resources (Holvoet & Muys, 2004; Kaiser & Edward-Jones, 2005),
3. Philanthropic support of, or collaboration in, biodiversity conservation schemes between conservation bodies and corporations under environmental corporate social responsibility (ECSR) schemes (Elkan et al., 2006; Zerbe, 2010).

VCS involve the enacting of sustainable resource extraction measures within landscapes where human-nature interaction is inevitable. As such, there is need for due consideration of how to balance biodiversity conservation goals with ecosystem service provision and the maintenance of existing (usually rural) livelihoods (Spence, 1999). Conservation on lands outside national nature reserves also carries with it an additional concern of providing monetary incentives to ensure cooperation, especially when the habitats in question are situated on private land (Merenlender et al., 2004). This is also due to the nature of biodiversity as a common-pool resource (at either the habitat and/or species level) being in potential conflict with conservation actions which are usually taken at the level which does not necessarily encompass all responsible users (Grodzińska-Jurczak & Cent 2011; Grodzińska-Jurczak et al. 2012). Perhaps due to the well-known conflict between harmonizing biodiversity conservation goals and ensuring stakeholder satisfaction, many of the studies on the effects of VCS have been

primarily focused on discussing economic returns or social sustainability improvements through utilizing case-study methodologies (e.g. Bray et al., 2002; Brooks et al., 2009; Palmer & Filoso, 2009). Despite being initiated with biodiversity conservation as one of its main pillars, conservation goals are often evaluated broadly under the aim of preventing land-use change within VCS-covered ecosystems. In particular, the lack of focus on the effects on biodiversity conservation in both the implementation and monitoring processes within VCS is prevalent among Payment for Ecosystem Service (PES) research where most studies are approached from a project development angle (Adhikari & Boag, 2013; Milder et al., 2014).

[A] VCS is considered to have achieved biodiversity conservation goals if it ensures clear process implementation through the existence of clear biodiversity conservation guidelines and monitoring schemes, as well as allowances which enable it to be sustained over time…

In light of a need to understand the impact that VCS has had on biodiversity conservation since its outset, this paper aims to investigate the efficacy of these schemes on biodiversity conservation within the three main categories of VCS through a meta-review. This is especially in reference to concrete improvements in terms of species protection and/ or targeting habitat loss with the specific goal of species protection within the certification process of a given VCS and in terms of future sustainability. For example, a VCS is considered to have achieved biodiversity conservation goals if it ensures clear process implementation through the existence of clear biodiversity conservation guidelines and monitoring schemes, as well as allowances which enable it to be sustained over time (e.g. good market penetration and adaptation to future climate/ land use change scenarios).

In this paper, we focus on peer-reviewed review publications that empirically quantified the success of biodiversity conservation at the habitat and/ or species level in both marine and terrestrial habitats in different ecosystems throughout the globe. Results of this study contribute to the elucidation of best practices in designing and implementing effective voluntary certification schemes for biodiversity conservation which are correlated with sound institutional and social integration.

2. Methodology

This paper presents results of a meta-review of existing peer-reviewed review-papers on VCS which have investigated biodiversity conservation outcomes. In addition, review studies which have summarized or suggested recommendations for improving current VCS schemes in relation to achieving biodiversity conservation goals were also included for analysis. The relevant VCS corpus was developed using two search strategies. Firstly, a database of literature was compiled from the following keyword searches using the Web of Science database (Thompson Reuters, 2015):

1. "voluntary certification" AND "biodiversity" AND "review"
2. "voluntary certification" OR "voluntary certification" AND "biodiversity" AND "review"

Utilizing the Web of Science database for the purpose of review studies has become an established academic practice in light of the said database containing a high representation of peer-reviewed journals in natural and social

sciences (Burholt & Dobbs, 2012; Kajikawa et al., 2007). The first search returned 25 results while the second returned 62 results, which were inclusive of the former 25 review studies.

Secondly, to supplement this initial VCS corpus, we undertook a further literature search using the same two search-strings within nine journals which are known for their focus on publishing empirical biodiversity conservation impacts: Biological Conservation, Conservation Biology, Cities and the Environment, Ecological Applications, Ecological Engineering, Ecology and Society, Landscape and Urban Planning, Urban Ecosystems and the Urban Naturalist Journal. In total, the result of this search returned 85 peer-reviewed papers, of which an additional 21 papers were added to the initial literature collection. Although a sizable number of papers was collected from the two searches, in light of the selection criteria (described in detail in section 2.1), the final corpus was composed of 25 articles as of October 2015.

2.1 Criteria for Inclusion

Results which turned up in search terms 1) and 2) within the Web of Science and individual journal searches allowed the inclusion of both scientific reviews and articles which had a scope between that of a case study and a review paper. These articles are usually semi-review studies on a subcategory of VCS within the classification of PES, Eco-labeling or ECSR, but which draw information from multi-national case studies at the global or regional level (e.g. Abensperg-Traun, 2009).

Studies included for analysis were those which met three criteria. Firstly, papers which were considered had to describe biodiversity conservation outcomes in a qualitative or quantitative manner. In this case, conservation outcomes had to be quantified or mentioned distinctly in a given review, instead of functioning as an underlying factor which is assumed to be correlated with VCS-related benefits such as improvements in economic/ social sustainability (Adhikari & Boag, 2013). Secondly, selected papers had to have a focus on biodiversity conservation at a landscape/ habitat and/ or species level. Hence, studies focusing on the eco-labeling of green buildings, pollution management and economic refinement of existing market mechanisms were excluded from this review. Thirdly, we have also included review studies which specifically focus on improving current VCS schemes in relation to achieving biodiversity conservation goals.

2.2 Data categorization

The authors evaluated the contents of the final 25 selected peer-reviewed review-articles in a triple blind categorization process. The authors individually analyzed the selected papers and came up with individual conclusions on the following categories: 1) the type of VCS discussed, 2) a positive-negative-neutral qualification of biodiversity conservation outcomes, 3) ecosystems of focus and if conservation is conducted/ targeted at a species or habitat scale, 4) the pros and cons of the VCS scheme discussed, especially in relation to the existence of clear implementation guidelines (i.e. clear biodiversity conservation guidelines), as well as allowances which enable it to be sustained over time (e.g. adaptation to future climate/ land use change scenarios), and 5) direct and indirect recommendations for improving existing VCS for biodiversity conservation. Any differences in the conclusions reached by each individual author were brought to joint-discussion until a consensus was reached. Due to the differences in data collection methodology within the papers in the final corpus, results of this meta-review include only descriptive statistical analyses.

3. Results and Discussion

Out of the 25 review studies included in this meta-review analysis, a total of 17 studies reviewed the success of biodiversity conservation in existing VCS and the remaining 9 studies focused on recommendations

to improve monitoring or uptake of VCS biodiversity conservation measures. Since studies considered were review papers, all of them were dated post-2000 and mostly covered studies pertaining to certifications under the PES schemes (15 papers, Table 1). This was followed by ten papers reviewing eco-labeled natural resources and two papers covering corporate-driven ECSR schemes (Table 1).

Table 1: Distribution of coverage of the three categories of VCS within existing review-papers.

Journal name	Type of VCS		
	PES	Eco-labeling	ECSR
Biological conservation	4	0	0
Ecological applications	1	0	0
Conservation biology	5	6	2
Ecology and society	4	4	0
Frontiers in ecology and the environment	1	0	0
Total	15	10	2

The total number of papers represented in Table 1 amounted to 27 as a study by Gelcich & Donlan (2015) focused on describing recommendations for the three categories of VCS and was hence double-counted in each VCS category. The representation of each of the three VCS categories revealed 14 reviews targeting PES schemes, followed by 11 which focused on eco-labeling issues and 2 which detailed environmental CSR movements. In terms of the number of distinct VCS schemes, 29 different VCS schemes, under either PES, eco-labeling or ECSR movements were evaluated under 16 review studies and 9 studies focusing on recommendations to improve current VCS schemes. More than half of the studies targeted improvements to PES schemes within tropical forest ecosystems. Forests were the most widely represented ecosystem (40%), followed by agricultural ecosystems (16%) and schemes with a global focus on marine, forest and watershed systems or purely marine ecosystems (12% each). Studies which were focused on VCS in combined forest and agriculture systems, forest and watershed systems and agroforestry practices made up the remaining 16% of the corpus. In terms of the geographical distribution of the targeted VCS, most studies were focused in developing countries (32%). Out of the 44% of reviews which targeted VCS on a global scale, 37% had a strong focus on ecosystems within a developing country (in particular, tropical forest and watershed ecosystems) (Abensperg-Traun, 2009, Dinerstein et al., 2012).

The quantification of the efficacy of the various certification schemes for biodiversity conservation was undertaken almost equally at both the habitat and species level with 12 studies focusing on the former, 4 studies on the latter and 9 studies focusing on both levels. Due to the nature of PES schemes, which considers the conservation of ecosystems for the services it provides to humans, many of the biodiversity conservation initiatives were carried out at the habitat level. Conservation at a species level was implemented more through eco-labeling and ECSR schemes. Table 2 (*pages 31 and 32*) provides a summary of the biodiversity conservation evaluation and their corresponding ecozones and VCS schemes.

Table 2: Summary of VCS schemes covered by review papers, and their associated evaluation scores for biodiversity conservation.

VCS Category	Schemes	Geographic extent	Climate zone	Ecosystem	Biodiversity Conservation Evaluation and Scale*	Article type	Reference
PES	Convention on Biological Diversity (CBD)	Global (Focus: Developing countries in the tropical belt)	Tropical	Forest, Watershed	(-) Species (Large vertebrates, Vascular plants)	Review	Abensperg-Traun, 2009
	Payment for Ecosystem Services (General)	Southern Bahia, Brazil	Tropical	Forest	(N/A) Habitat	Recommendation	Chomitz et al., 2006
	Reducing emissions from deforestation and forest degradation (REDD+)	Global (Focus: Developing countries in the tropical belt)	Tropical	Forest	(+) Habitat, Species (Large vertebrates)	Recommendation	Dinerstein et al., 2012
	Voluntary Carbon Market Schemes (e.g. REDD)	Panama	Tropical	Forest	(N/A) Habitat, Species	Recommendation	Paquette et al., 2009
	Reducing emissions from deforestation and forest degradation (REDD+)	Developing countries in the tropical belt	Tropical	Forest	(N/A) Habitat	Recommendation	Phelps et al., 2012
	Payment for Ecosystem Services (General, including REDD)	Costa Rica	Tropical	Forest	(-) Habitat	Recommendation	Sánchez-Azofeifa et al., 2007
	Reducing emissions from deforestation and forest degradation (REDD)	Sumatra, Indonesia	Tropical	Agroforest	(N/A) Habitat	Recommendation	Villamor & van Noordwijk, 2011
	Payment for Ecosystem Services (General, including REDD)	Global	Tropical - Boreal	Forest	(N/A) Habitat	Recommendation	Githiru et al., 2015
	Payment for Ecosystem Services (General, including REDD)	Global	Tropical - Boreal	Marine, Forest, Watershed	(-) Habitat	Review	Prager et al., In press
	Marin Agriculture Land Trusts, The Nature Conservancy Land Trusts	United States	Temperate	Forest, Agricultural	(-) Habitat	Review	Merenlender et al., 2004
	Payment for Ecosystem Services (General, including REDD)	United States	Temperate	Forest, Watershed	(N/A) Habitat, Species (Fish)	Review	Robertson et al., 2014
	Forest Improvement Act (FIA)	Nova Scotia, Canada	Temperate - Boreal	Forest	(-) Habitat	Review	Bissix and Rees, 2001
	Forest Stewardship Council (FSC Finland), Forest Stewardship Council-Programme for the Endorsement of Forest Certification (FSC-PEFC Russia), Programme for the Endorsement of Forest Certification (PEFC Sweden)	N Sweden, NW Russia, N Finland	Boreal	Forest	(+ / -) Habitat	Review	Keskitalo et al., 2009

Table 2: (*Continued from previous page*) Summary of VCS schemes covered by review papers, and their associated evaluation scores for biodiversity conservation.

	Canadian Boreal Forest Agreement (CBFA)	Canada	Boreal	Forest	(-) Habitat, Species (Large vertebrates)	Review	Murray et al., 2015
Eco-labeling	Forest Stewardship Council (FSC), International Tropical Timber Organization (ITTO), Lembaga Ekolabel Indonesia (LEI), Malaysian Timber Certification Council (MTCC)	Southeast Asia	Tropical	Forest	(+/ -) Habitat, Species (General tropical forest species)	Review	Dennis et al., 2008
	Wild coffee project 1999	Uganda	Tropical	Agricultural (Coffee)	(+ / -) Species (Wild coffee)	Review	Lilieholm & Weatherly, 2010
	Sustainable Agriculture Standards (General)	Developing countries in the tropical belt	Tropical	Agricultural	(+ / -) Habitat	Review	Milder et al., 2014
	Rainforest Alliance/ Sustainable Agriculture Network (RA/SAN)	Colombia	Tropical	Agricultural (Coffee)	(+) Habitat, Species (Vascular plants)	Recommendation	Rueda & Lambin, 2013
	Roundtable on Sustainable Biofuels (RSB), Round Table on Responsible Soy (RTRS), Roundtable on Sustainable Palm Oil (RSPO), Forest Stewardship Council (FSC), Rainforest Alliance/ Sustainable Agriculture Network (RA/SAN)	European Union	Tropical - Temperate	Agricultural (Biofuel)	(+ / -) Habitat, Species (General native/ exotic species)	Review	Hennenberg et al., 2009
	Certificate for Sustainable Tourism (CST), Dolphin Safe (DS), Marine Stewardship Council (MSC), Forest Stewardship Council (FSC), Fair Trade (FT), Rainforest Alliance/ Sustainable Agriculture Network (RA/SAN), Sustainable Forest Initiative (SFI), Sustainable Slopes Program (SSP)	Global	Tropical - Temperate	Marine, Forest, Watershed	(-) Habitat, Species (Fish, Vascular plants)	Review	Blackman & Rivera, 2011
	Forest Stewardship Council (FSC), Canadian Standards Association - Sustainable Forest Management (CSA - SFM), Sustainable Forestry Initiative (SFI)	United States, Canada	Temperate - Boreal	Forest	(+/-) Habitat	Review	Clark & Kozar, 2011
	Marine Stewardship Council (MSC), Territorial User Rights Fishery (TURF)	Baja California and Fogo Island		Marine	(+) Species (Fish, crustaceans)	Review	Foley & McCay, 2014
	Marine Stewardship Council (MSC)	Global		Marine	(+ / -) Species (Fish, crustaceans, mollusks)	Review	Kaiser & Edwards-Jones, 2006
ECSR	ECSR (General)	Global		Marine, Forest, Watershed	(+/-) Habitat, Species (Large vertebrates)	Review	Robinson, 2012
PES, Eco-labeling, ECSR	Territorial User Rights Fishery (TURF)	Global (Focus: Chile)		Marine	(N/A) Species (Fish, crustaceans)	Recommendation	Gelcich & Donlan, 2015

* The (+) symbol indicates VCS which were evaluated positively for achieving biodiversity conservation goals. (+ / -) symbols indicate an ambivalent evaluation, in which some biodiversity conservation goals are achieved or where biodiversity conservation goals are achieved but with little future sustainability prospects. (-) symbols indicate studies whereby biodiversity conservation goals were not met and a (N/A) symbol refers to studies which focus purely on recommending improvements for biodiversity conservation within VCS schemes.

3.1 "Setting the tone and enforcing it": Biodiversity conservation through managing stakeholder expectations

In total, 18 reviews were evaluated as positive, ambivalent or negative with regards to the capability of VCS schemes in meeting biodiversity conservation targets (Table 2). VCS schemes which were evaluated as "ambivalent" where those in which some (but not all) biodiversity conservation goals were achieved or where biodiversity conservation was achieved but the targeted scheme had little prospect for future sustainability, either due to limited coverage or economic/ social viability issues.

Despite considerable potential of VCS for biodiversity conservation, the majority of current VCS were evaluated to have a negative or mixed effect on biodiversity conservation (83% of the 18 rated-reviews). Results were ambivalent, at best, even for VCS categories which were discussed independently in more than two separate publications. Accordingly, there was no single VCS category or scheme which had a clear positive evaluation. Eco-labeling VCS schemes (i.e. sustainable agriculture and forestry standards) made up the bulk of programs that were evaluated as ambivalent and PES schemes were the category of VCS that were most often, negatively evaluated for biodiversity conservation (Table 3, pages 34–37).

Most eco-labeling schemes which had an ambivalent rating experienced problems in setting a sound ecological baseline with clear and stepwise guidelines for achieving biodiversity conservation outcomes. These schemes also often lack robust monitoring schemes, though they are characterized by sound "middle management flow" (i.e. adoption and implementation) guidelines.

The popularity of eco-labeled products among consumers could have reinforced a positive cycle of business adoption because eco-labeled products benefit from market-differentiation (Levin, 2012). A company which eco-labels their products may thus not necessarily have the intention to develop conservation-friendly business practices. The review by Milder et al. (2014) exposes a possible loophole in the general eco-labeling certification process: assessments place emphasis on producers to state avoidance of negative environmental processes. There should therefore be consideration of a monitoring scheme which places more emphasis on highlighting additive impacts towards biodiversity conservation, instead of focusing on what producers did not do.

Clark and Kozar (2011) evaluated eco-labeling practices in forests certified by the Forest Stewardship Council (FSC), Canadian Standards Association - Sustainable Forest Management (CSA-FSM) and Sustainable Forestry Initiative (SFI) in the United States and Canada and found that, while general adherence to ecological principals was rated positively, clearing of natural forests was allowed until 2002. CSA-FSM projects also had a poor record of aquatic conservation (Tan, 2003) and a detailed reading into project processes found that lands that were marked as preserved were those already protected under governmental law (Tan, 2003, European Conference of Postal and Telecommunications Administrations [CEPT], 2008). Furthermore, projects under SFI were found to allow the use of exotic species and allowed natural forests to be felled for the creation of timber plantations (Cashore et al., 2004).

Table 3: Evaluation of successes and deficiencies in the process of achieving biodiversity conservation goals within VCS schemes that were evaluated as ambivalent (+ / -) or negative (-).

VCS Category and Evaluation (in brackets)	Schemes	Problems (Processes)					Problems (Future sustainability)				Reference
		Unified stakeholder motivation	Clear conservation guidelines	Non-complicated adoption processes	Non-complicated implementation processes	Robust monitoring/ Adherence to guidelines	Coverage	Integration with social goals	Integration with climate change scenarios	Market penetration	
PES (+ / -)	FSC Finland, FSC-PEFC Russia, PEFC Sweden	✓	✓	✓	✓	✓	✓	Finland, Sweden: Communities felt that conservation goals were more important than economic gains			Keskitalo et al., 2009
Eco labeling (+ / -)	FSC, ITTO, LEI, MTCC	✓	Too many joint partnerships and messy guidelines, causing slow uptake			✓	Slow uptake limits coverage	✓			Dennis et al., 2008
Eco labeling (+ / -)	Sustainable Agriculture Standards (General)	✓	No common indicators/ data collection guidelines	✓	✓	Existing reporting tainted by greenwashing					Milder et al., 2014
Eco labeling (+ / -)	RSB, RTRS, RSPO, FSC, RA/ SAN	✓	Limited to mitigating direct/ indirect land-use change impacts: No guidelines on biodiversity-friendly agriculture practices	✓	✓	Few schemes were able to clearly assess biodiversity conservation at the species-level	Insufficient percentage land coverage				Hennenberg et al., 2009

Table 3: (*Continued*) Evaluation of successes and deficiencies in the process of achieving biodiversity conservation goals within VCS schemes that were evaluated as ambivalent (+ / -) or negative (-).

Eco labeling (+ / -)	FSC, CSA - SFM, SFI	✓	Definition of conservation is dubious: Exotic species allowed and felling of natural forests was carried out in some SFI cases	✓	✓	Forest regeneration, soil conservation, was deemed poor. CSA-FSM poorly preserved aquatic habitats. SFI allowed felling of natural forests for plantation establishment					Clark & Kozar, 2011
Eco labeling (+ / -)	MSC	✓	✓	Limits adoption by sustainable small-scale fisheries if upstream processes are unsustainable	✓	✓	Insufficient coverage due to legislation inflexibility (requires certification of whole fishery process)	✓		✓	Kaiser & Edwards-Jones, 2006
Eco labeling (+ / -)	Wild coffee project 1999	✓	✓	✓	✓	✓				Market penetration deemed poor due to competition	Lilieholm & Weatherly, 2010
ECSR (+ / -)	ECSR (General)	Debate on conservation NGOs being "bribed" by companies	✓	✓	✓	✓	Not enough corporations adopting ECSR practices			Market penetration deemed low due to limited coverage	Robinson, 2012

Table 3: (*Continued*) Evaluation of successes and deficiencies in the process of achieving biodiversity conservation goals within VCS schemes that were evaluated as ambivalent (+ / -) or negative (-).

PES (-)	CBD	Lack of consideration about local demand of biodiversity goods	✓	✓	✓	✓	✓	Rigid conservation goals without consideration of local demand opens up black markets for species trade			Abensperg-Traun, 2009
PES (-)	Payment for Ecosystem Services (General)	Majority of participants include low-profit land which would not be targeted for development	No prior screening of future land-use conversion treats on submitted land parcels	✓	✓	✓					Sánchez-Azofeifa et al., 2007
PES (-)	Payment for Ecosystem Services (General)	✓	✓	✓	✓	Lack of adherence to ecological principles					Prager et al., In press
PES (-)	Marin Agriculture Land Trusts, The Nature Conservancy Land Trusts	Potential conflict between conservation goals and private landowner profit	Motivation conflict may prevent establishment of sound ecological guidelines	✓	✓		Little information available on demand and supply of targeted land	Potential conservation-economic benefit conflict		✓	Merenlender et al., 2004
PES (-)	FIA	Conflict between conservation goals and timber/ pulp industry profits	Vague definition of "mature forest"	Application, implementation and monitoring schemes were not easy to apply due to fundamental mismatch in stakeholder motives				Conflict between conservation goals and timber/ pulp industry profits		✓	Bissix & Rees, 2001
PES (-)	CBFA	✓	Allows industrial activities other than logging	✓	✓	✓	Land tenure does not include most boreal ecozones	Requires closer coordination with public conservation schemes.	Not adapted to climate change, which would threaten targeted species		Murray et al., 2015

Table 3: (*Continued*) Evaluation of successes and deficiencies in the process of achieving biodiversity conservation goals within VCS schemes that were evaluated as ambivalent (+ / -) or negative (-).

Eco labe-ling (-)	CST, DS, MSC, FSC, FT, RA/SAN, SFI, SSP	✓	✓	✓	✓	Lack of adher-ence to ecologi-cal prin-ciples					Blackman & Rivera, 2011

Note: Cells that are shaded in grey (i.e. cells that were left blank) were not evaluated by the reference papers.

PES projects which were evaluated as having a negative outcome on influencing biodiversity conservation goals had a more fundamental flaw which preceded their implementation– a lack of clarification regarding stakeholder motivation. Misalignment in stakeholder demand could potentially affect the effectiveness of upstream processes such as the joint agreement on biological conservation goals (Bissix & Rees, 2001), monitoring efforts and future social agreements (Bissix & Rees, 2001; Merenlender et al., 2004).

One example is the history of enactment of the Forest Improvement Act (FIA) in boreal forests within Nova Scotia, Canada (1965 – present) which prevents harvesting of mature forests. However, a lack of understanding of the economic power held by logging and pulp companies in the region caused long delays among stakeholders in defining what constituted a "mature forest" (Bissix & Rees, 2001). Consequently, the purposes and procedures of the resultant FIA were clouded by suspicion that processes were skewed in the favor of production companies, and that the purpose of FIA establishment was mainly a front for greenwashing to appease environmentalists (Bissix & Rees, 2001). A similar situation was also described in an evaluation of PES schemes targeting habitat-level tropical forest conservation in Costa Rica (Sánchez-Azofeifa et al., 2007). Insufficient screening of projects which are eventually accepted into PES schemes allowed the scheme to generate carbon credits for forests on low-profit land which would not have been viable for development from the outset. As a result, the rate of deforestation did not decrease even after the scheme was adopted in 1997 (Sánchez-Azofeifa et al., 2007) and it remains to be seen if landholders agreed to adopt PES for environmental conservation, or the generation of profit on otherwise low-valued land.

Furthermore, in terms of ensuring the continued sustainability of VCS schemes, VCS schemes which were evaluated as negative or ambivalent had little future continuity due to potential stakeholder conflict. This often stems from the scheme being unable to align stakeholder motives from the outset. In the FIA example reviewed by Bissix & Rees (2001) on Canadian and United States forests, a mismatch between economic and conservation priorities resulted in the scheme being unsuccessful in prioritizing conservation over for-profit resource-extraction. Furthermore, Abensperg-Traun (2009) outlined the failure to integrate the prohibition of trade of threatened species with local livelihoods has in fact, caused conservation to backfire by opening up illegal black-markets. Also, few VCS schemes had measures to deal with future climate change scenarios and could thus be in danger of being short-lived. However, the authors would first further address implementation and monitoring based issues in the next section (2.2), while leaving the discussion of ensuring future climate change flexibility to section 3.3 of this paper.

In total, in the abovementioned examples, VCS which failed to meet biodiversity conservation goals had problems stemming mainly from a mismatch in stakeholder demand, especially in relation to meeting producer-driven profits. This has resulted in the inability to establish

concrete biodiversity conservation guidelines and the erosion of robust monitoring standards. Campbell & Kittredge (1996:25) state that expecting a state of non-cooperation should be the norm due to the impossible task of matching attitudes and ensuring complete voluntary participation. This may also be due to a mismatch in scales, whereby standards are set at a different geographic or organizational level from the level of actual implementation (Raakjaer-Nielsen et al., 2002). However, the outlook for conservation in VCS may not be entirely bleak in light of examples which facilitate cooperation through 1) economic means of ensuring stakeholder pay-offs for biodiversity conservation and 2) standards which are not vague about how biodiversity conservation should be carried out at a local-level.

3.2 Incentivizing biodiversity conservation within VCS: Ensuring economic balances and setting local-level guidelines via adequate monitoring of biodiversity goals

VCS which were evaluated as meeting biodiversity conservation goals consisted of three out of a total of 25 evaluated cases. A positive case arose from the PES REDD+ scheme within tropical forests within developing countries (Dinerstein et al., 2012) while the remaining two cases focused on eco-labeling schemes on Colombian coffee (Rueda & Lambin, 2013) and on Marine Stewardship Council (MSC) certified Baja Californian lobster (*Panulirus interruptus*) and Fogo island shrimp (*Pandalus borealis*) (Foley & McCay, 2014). What these schemes had in common was an agreement between conservation and economic goals, and clear biodiversity conservation targets which are easily monitored. This usually coincided with targeting biodiversity conservation at a species level.

Though habitat-level conservation is not a negative point in itself, specifying target species could aid in streamlining monitoring processes and logistics involved in sound implementation at a local level (Blackman & Rivera, 2011). Especially in relation to charismatic large vertebrates, several studies have documented conservation success when local communities are willing to pay for the conservation of species such as the tiger (*Panthera tigris*) or the Asian elephant (*Elephas maximus*) (Dinerstein et al., 2007; Bandara & Tisdell, 2005). The amount paid has been deemed sufficient to not only cover conservation costs, but also provide increased harvest from timber plantations which coincide with tiger habitat and are under the PES scheme (Dinerstein et al., 2007). This fortunate overlap occurred when payment for tiger conservation served as an additional motivator to protect the tiger habitat (which happened to be the REDD+ covered forest) from illegal logging.

Similarly in the case of Rainforest Alliance (RA)/ Sustainable Agriculture Network (SAN) certified Colombian coffee, clear guidelines on biodiversity-friendly practices at the species level resulted in certified farms having a higher native biodiversity than uncertified farms (Rueda & Lambin, 2013). Certified farmers were advised on matters such as increased tree planting diversity, restoration of watershed habitats and integrated pest management strategies (collecting over-ripe fruits from their plantations) to control exotic pests (berry borer (*Hypothenemus hampei*) and leaf rust (*Hemileia vastratix*)) (McMichael, 2007; Rueda & Lambin, 2013). Even within eco-labeling schemes targeting marine organisms, species-level focus on the conservation of the Baja California lobster (*Panulirus interruptus*) and Fogo island shrimp (*Pandalus borealis*) under the MSC scheme enabled sustainable catch techniques (e.g. limiting catch sizes) to ensure the continual survival of the species (Foley & McCay, 2014). Though the Baja California lobster and the Fogo island shrimp are not listed as threatened species, and it is uncertain if conservation-targeted species are included in RA/SAN example, these practices go a long way in increasing the potential for biodiversity

conservation by ensuring continued viable populations and increasing habitat resilience for native species. As such the abovementioned examples describe positive impacts of focused, species-level protection within VCS. However, this recommendation could have been more easily applied to species which have fixed home ranges, making them easier to monitor (Mai & Hovel 2007).

Also central to biodiversity success in VCS schemes is the need for stakeholders' economic demands to be met and sound governance to ensure that payments for biodiversity conservation are properly administered (Blackman & Rivera, 2011). For example, placing a premium on top of existing PES payments for biodiversity conservation in Kasigau (Kenya), was found to be successful due to sound governance and stakeholder transparency (Dinerstein et al., 2012). Annually, a portion of money obtained from the biodiversity premiums and PES payments are divided among community landowners and local projects which improve the livelihood of community members (Dinerstein et al., 2012). Furthermore, the project ensures that monitoring is conducted by trained biologists among the local community, ensuring a high level of project-ownership and transparency in reporting (Dinerstein et al., 2012). Placing price premiums on conserving biodiversity was also a main factor in ensuring that Colombian coffee farmers adopted RA/SAN certification (Rueda & Lambin, 2013). Besides enabling farmers to implement measures which improved biodiversity conservation, the certification provided monetary assistance to upgrade existing equipment, and manage damage by exotic pests on their plantations (Rueda & Lambin, 2013). This in turn resulted in higher harvests and improved market access, thereby improving local livelihoods (Rueda & Lambin, 2013).

Besides conservation successes in PES and eco-labeling schemes, ECSR schemes reviewed also met biodiversity conservation goals. In this review, ECSR schemes were given an overall ambivalent rating due to their low coverage. Fewer than 0.4% of companies are involved in the UN sponsored Global Compact (the global leading CSR initiative) (Utting, 2008)[1]. However, where ECSR takes place, biodiversity conservation goals are more or less met in a system whereby both the certifier and businesses receive economic returns over species-specific conservation. One example is the cooperation between Conservation International and Total Foundation where the latter funds coral reef research in a philanthropic move and receives a positive brand image in return. Another positive example

[C]entral to biodiversity success in VCS schemes is the need for stakeholders' economic demands to be met and sound governance to ensure that payments for biodiversity conservation are properly administered.

1 Prominence of PES and eco-labeling schemes has been increasing rapidly especially within the last 10 years. There are currently more than 300 PES programs worldwide (Blackman & Woodward, 2010) and the average annual PES market share has been estimated to be about USD 6.5 billion in the United Kingdom, United States, China, Costa Rica and Mexico (Young, 2010). Out of this, biodiversity offsets make up about USD 3.4 billion of the annual global market share (Forest Trends, 2008). From a few eco-labeled products in the 1990s to over 400 different eco-labels today, eco-labeled commodities such as coffee, cocoa, palm oil and tea take up well over 10% of the total global market share (with eco-labeled coffee commanding about 40% of the coffee market) (Potts et al., 2014). It may seem optimistic at the first glance that average annual spending on CSR initiatives by Fortune 500 companies in the United States and the United Kingdom alone totaled to USD 15 trillion (Smith, 2014). However, the proportion of the corporate sector that has adopted ECSR movements is comparatively small. Out of 780,000 transnational corporations and their affiliates, only 3,600 companies are involved in the UN sponsored Global Compact (the global leading CSR initiative) (Utting, 2008).

can be taken from the case where the Wildlife Conservation Society WCS and Congolaise Industrielle des Bois (CIB) forestry company worked together to identify forests patches in Northern Congo which were biodiversity hotspots. Logging which took place under CIB's operations avoided these areas, and adopted sustainability practices as advised by WCS in return for a sustainability certification on their wood products (Elkan et al., 2006; Peterson, 2003). These examples not only serve to emphasize that win-win economic situations can be established by corporations and conservation NGOs but also shows that ECSR can be closely tied to PES and Eco-labeling measures.

VCS which were seen as successful in meeting economic and biodiversity conservation goals were those which had an attractive conservation premium mechanism, complemented with good governance measures and focus on locally relevant species. In the following section, drawn from recommendation reviews included in this meta-review, this paper outlines recommendations which promote the above-mentioned mechanism.

3.3 The way forward: Ensuring long-term sustainability of Voluntary Certification Standards for biodiversity conservation

Gaps in the current VCS system can be narrowed down to lack of knowledge of contextualizing biodiversity conservation, inadequate monitoring, and inertia involved in moving projects under a multi-stakeholder scheme due to motivation mismatching. Successful practices were those which tied biodiversity conservation to payments which benefited stakeholders and which had targeted locally relevant biodiversity.

Robertson et al. (2014) proposes a "credit stacking" mechanism for biodiversity on top of existing ecosystem services provided by a given landscape. Due to the growing regulation of markets, non-governmental organizations involved in approving VCS may find that credit stacking can attract a higher coverage of ecosystems due to the promise of economic returns. The economic potential of the regulatory market is further highlighted by Chomitz et al. (2006), who proposed that increased payments for conserving tropical forests in Brazil under schemes such as REDD would be correlated with an increase in protected forest area. This is due both to increased stakeholder uptake and positive returns from extractive use of natural resources within the ecosystem feeding back into higher willingness-to-pay for conservation (Chomitz et al., 2006). Bottom-up payments, as well as philanthropic donations from corporations have been seen as a viable option to fund biodiversity offsetting schemes and have even been proposed as a mechanism to ensure continued financial relevance for protection of government nature reserves (Githiru et al., 2015).

The link between the maintenance of biological diversity and increased carbon payments under PES schemes has also been established by Phelps et al. (2012) and Paquette et al. (2009). The former argues that an increase in funding to support the creation of sound ecological monitoring would position REDD+ as a win-win solution for rural development and tropical biodiversity (Phelps et al., 2012). Research by Paquette et al. (2009) shows that enrichment planting in the forests of Panama using native timber species improved biodiversity while it also enabled forests to store as much carbon (113 MgC/ ha) as teak plantations and primary forests.

Another recommendation to ensure that biodiversity conservation generates sound economic returns for stakeholders and regulators has been suggested in the context of promoting sustainable fisheries. In the case of non-migratory marine resources located within Territorial User Rights Fisheries (TURF), Gelcich & Donlan (2015) found that a market model which created a fishing-exclusion zone within existing TURFs encouraged

inter-sectorial cooperation and created balances in payments between ensuring stock sustainability and payments for conservation. This no-take zone would increase the biomass and diversity of non-migratory fish, crustaceans and mollusks within the TURF (Gelcich et al., 2012), resulting in higher economic returns of up to 50% of the existing catch-price (Davis et al., 2015). Furthermore, in a win-win situation for ensuring the future continuity of such a scheme, fishermen who were presented with this prospective scheme stated willingness to utilize a portion of the revenue generated to fund fisher-enforced surveillance of the no-take zones within TURFs (Gelcich & Donlan, 2015).

In light of the situation described above, there might be positive reinforcement between 1) maintaining a biodiverse terrestrial or marine ecosystem, 2) increased payouts to stakeholders due to sustainable natural resources extraction/ biodiversity/ ecosystem-service offsets and 3) continued willingness of stakeholders to ensure sound monitoring of biodiversity goals. A similar case study was found in a recommendation paper by Villamor & van Noordwijk (2011) where they had local stakeholders simulate responses to adopting a PES scheme on their agroforest (Sumatra, Indonesia) through a realistic role-playing game. Results revealed that landholders and farmers held a strong belief in biodiversity conservation and were willing to adopt a PES scheme for maintaining agroforests instead of allowing conversion to a less biodiverse oil palm plantation (Villamor & van Noordwijk, 2011). Stakeholders also recognized that ensuring biodiversity in their agroforest is correlated with good crop harvests in light of pest management and soil/ water sustainability issues, which would then feed back to the community in terms of economic benefit from PES payments and resource sales (Villamor & van Noordwijk, 2011).

However, ensuring the long-term sustainability of VCS for biodiversity conservation is not just a question of aligning stakeholder motives and ensuring specific locally relevant biodiversity targets. Although not explicitly mentioned in any of the recommendation papers which contribute to this meta-review, a forward-looking perspective, especially in the light of climate change scenarios is needed (Table 3). One way to approach this scenario is through trying to slow the impacts of climate change by preventing further biodiversity and habitat loss. Another approach is to include biodiversity that is better adapted to changing climate conditions in ecosystems which are already significantly modified by humans (e.g. agriculture landscapes and agroforests). Inclusion of these species (sometimes exotic) may provide microclimatic stabilization in the face of climatic stresses (Sæbø et al., 2003). For example, tree cultivars in human-natural systems such as *Platanus* x *acerifolia* and *Acer* x *freemanii* have been hybridized to be more hardy to heat and pollution in semi-natural landscapes in the United States (McKinney, 2002). In turn, these species could function as shade trees, to regulate microclimate temperatures and provide shelter to help native species to thrive.

4. Conclusion

This study shows the results of a meta-review of the efficacy of VCS schemes with regard to biodiversity conservation goals described in 19 reviews and 6 review-recommendation papers.

Information on application and VCS certification processes was readily available to stakeholders in terms of PES, eco-labeling and CSR schemes. However, limitations exist in the existence of problems stemming from a mismatch in stakeholder demand, especially in relation to meeting producer-driven profits. This has resulted in the inability to establish concrete biodiversity conservation guidelines and the erosion of robust monitoring standards. VCS schemes which were deemed successful however, had addressed these problems with the inclusion of an attractive conservation premium mechanism, complemented with good governance measures and focus on locally relevant species

Improvement in the following areas is critical to enhance VCS: 1) Meeting the economic demands of regulators and stakeholders through conserving locally relevant habitats and species, 2) securing adequate post-certification monitoring, 3) encouraging stakeholders to quantitatively monitor biodiversity changes in their project site over time and 4) ensuring that existing VCS schemes have enough flexibility for adaptation to climate change. This paper shows that there is potential for the existence of a positive feedback from 1) to 3) as a biodiverse ecosystem can support resource sustainability for increased payouts to stakeholders and this would ensure the continued willingness of stakeholders to ensure sound monitoring of biodiversity goals.

5. References

Abensperg-Traun, M. (2009). CITES, sustainable use of wild species and incentive-driven conservation in developing countries, with an emphasis on southern Africa. *Biological Conservation 142*: 948-963.

Adhikari, B., & Boag, G. (2013). Designing payments for ecosystem services schemes: some considerations. *Current Opinion in Environmental Sustainability 5*: 72-77.

Bandara, R., & Tisdell, C. (2005). Changing abundance of elephants and willingness to pay for their conservation. *Journal of Environmental Management 76*:47–59.

Bissix, G, & Rees, J.A. (2001). Can strategic ecosystem management succeed in multiagency environments? *Ecological Applications 11* (2): 570-583.

Blackman, A., & Rivera, J. (2011). Producer-level benefits of sustainability certification. *Conservation Biology 25* (6): 1176-1185.

Blackman, A., & Woodward, R. (2010). *User Financing in a National Payments for Environmental Services Program: Costa Rican Hydropower*, Resources for the Future, Washington DC.

Bray, D., Sanchez J., & Murphy, E. (2002). Social dimensions of organic coffee production in Mexico: lessons for eco-labeling initiatives. *Society and Natural Resources15*: 429-446.

Brooks, T.M., Wright, S.J., & Sheil, D. (2009). Evaluating the success of conservation actions in safeguarding tropical forest biodiversity. *Conservation Biology 23* (6): 1448-1457.

Burholt, V., & Dobbs, C. (2012). Research on rural ageing: Where have we got to and where are we going in Europe? *Journal of Rural Studies, 28* (4), 432–446.

Campbell, S. M., & Kittredge, D.B. (1996). Ecosystem based management on multiple NIPF ownerships. *Journal of Forestry 94*(2):24–27.

Cashore, B., Auld, G., & Newsom, D. (2004). *Governing through markets: forest certification and the emergence of non-state authority*. Yale University Press, New Haven, Connecticut, USA.

Chomitz, K.M., da Fronseca, G.A.B., Alger, K., Stoms, D.M., Honzák, M., Landau, E.C., Thomas, T.S., Thomas, W.W., & Davis, F. (2006). Viable reserve networks arise from individual landholder responses to conservation incentives. *Ecology and Society 11* (2): Article 40.

Clark, M. R., &J. S. Kozar. (2011). Comparing sustainable forest management certifications standards: a meta-analysis. *Ecology and Society 16* (1): Article 3.

Davis, K., Kragt, M., Gelcich, S., Schilizzi, S., & Pannell, D. (2015). Accounting for enforcement costs in the spatial allocation of marine zones. *Conservation Biology*, *29*(1), 226-237.

Dearborn, D.C., & Kark, S. (2010). Motivations for conserving urban biodiversity. *Conservation Biology 24* (2): 432-440.

Dennis, R. A., E. Meijaard, R. Nasi, & L. Gustafsson. (2008). Biodiversity conservation in Southeast Asian timber concessions: a critical evaluation of policy mechanisms and guidelines. *Ecology and Society 13*(1): Article 25.

Dinerstein, E., Loucks, C., Wikramanayake, E., Ginsberg, J., Sanderson, E., Seidensticker, J., Forrest, J., Bryja, G., Heydlauff, A., Klenzendorf, S., Leimgruber, P., Mills, J., O'Brien, T.G., Shrestha, M., Simons, R., & Songer, M. (2007). The fate of wild tigers. *BioScience 57*: 508–514.

Dinerstein, E., Varma, K., Wikramanayake, E., Powell, G., Lumpkin, S., Naidoo, R., Korchinsky, M., Valle, C.D., Lohani, S., Seidensticker, J., Koldersma, D., Lovejoy, T., & Kushlin, A. (2012). Enhancing conservation, ecosystem services and local livelihoods through a wildlife premium mechanism. *Conservation Biology 27* (1): 14-23.

Elkan, P.W., Elkan, S.W., Moukassa, A., Malonga, R., Ngangoue, M., & Smith., J.L.D. (2006). Managing threats from bushmeat hunting in a timber concession in the Republic of Congo. Pages 393–416 in W. F. Laurance and C. A. Peres, eds. *Emerging threats to tropical forests*. University of Chicago Press, Chicago.

European Conference of Postal and Telecommunications Administrations (CEPT). (2008). *Review of forest certification schemes: results.* CEPT, Copenhagen, Denmark.

Foley, P., & McCay, B. (2014). Certifying the commons: eco-certification, privatization, and collective action. *Ecology and Society 19* (2): Article 28.

Forest Trends, the Ecosystem Marketplace. (2008). Payments for Ecosystem Services: Market Profiles. Forest Trends, the Ecosystem Marketplace. Retrieved from: http://www.dcnanature.org/wp-content/uploads/fundraising/Payments-Ecosystem-Services-PROFOR.pdf

Gelcich, S., Fernández, M., Godoy, N., Canepa, A., Prado, L., & Castilla, J. C. (2012). Territorial user rights for fisheries as ancillary instruments for marine coastal conservation in Chile. *Conservation Biology*, *26*(6), 1005-1015.

Gelcich, S., & Donlan, C.J. (2015). Incentivizing biodiversity conservation in artisanal fishing communities through territorial user rights and business model innovation. *Conservation Biology 29* (4): 1076-1085.

Githiru, M., King, M.W., Bauche, P., Simon, C., Boles, J., Rindt, C., & Victurine, R. (2015). Should biodiversity offsets help finance underfunded protected areas? *Biological Conservation 191*: 819-826.

Grodzińska-Jurczak, M., & Cent, J. (2011). Expansion of Nature Conservation Areas: Problems with Natura 2000 Implementation in Poland? *Environmental Management 47*: 11-27

Grodzińska-Jurczak, M., Strzelecka, M., Kamal, S., & Gutowska, J. (2012). *Effectiveness of Nature Conservation – a case of Natura 2000 sites in Poland. W: Protected Area Management*. Red. Barbara Sladonja. InTech, Rijeka, 183-202, ISBN 980-953-307-448-6.

Grumbine, R. E. (1990). Viable populations, reserve design, and federal lands management: a critique. *Conservation Biology 4*: 127–134.

Hennenberg, K.J., Dragisic, C., Haye, S., Hewson, J., Semroc, B., Savy, C., Wiegmann, K., Fehrenbach, H., & Fritsche, U.R. (2009). The power of bioenergy-related standards to protect biodiversity. *Conservation Biology 42* (2): 412-423.

Holvoet, B., & Muys. B. (2004). Sustainable forest management worldwide: a comparative assessment of standards. *International Forestry Review 6*:99–122.

Kaiser, M.J., & Edward-Jones, G. (2005). The role of ecolabeling in fisheries management and conservation. *Conservation Biology 20* (2): 392-398.

Kajikawa, Y., Ohno, J., Takeda, Y., Matsushima, K., & Komiyama, H. (2007). Creating an academic landscape of sustainability science: an analysis of the citation network. *Sustainability Science 2* (2), 221–231.

Keskitalo, E. C. H., Sandström, C., Tysiachniouk, M., & Johansson, J. (2009). Local consequences of applying international norms: differences in the application of forest certification in northern Sweden, northern Finland, and northwest Russia. *Ecology and Society 14* (2): Article 1.

Levin, J. (2012). *Profitability and sustainability in palm oil production: analysis of incremental financial costs and benefits of RSPO compliance*. WWF, Washington, D.C.

Lilieholm, R.J., & Weatherly, P. (2010). Kibale forest wild coffee: Challenges to market-based conservation in Africa. *Conservation Biology 24* (4): 924-930.

Jongman, R.H.G. 1995. Nature conservation planning in Europe: developing ecological networks. *Landscape and Urban Planning 32*: 169–183.

Mai, T. T., & Hovel, K.A. (2007). Influence of local-scale and landscape-scale habitat characteristics on California spiny lobster (*Panulirus interruptus*) abundance and survival. *Marine and Freshwater Research 58*:419-428.

McKinney, M.L. (2002). Urbanization, biodiversity and conservation. *BioScience 52*: 883-890.

McMichael, P. (2007). Globalization and the agrarian world. Pages 216-239 *in* G. Ritzer, editor. *The Blackwell companion to globalization.* Blackwell, Malden, Massachusetts, USA.

McNeely, J.A., Harrison, J., & Ingwall, P.D. (eds.). (1994). *Protecting nature: regional reviews of protected areas*. World Conservation Union, Gland, Switzerland.

Merenlender, A.M., Huntsinger, L., Guthey, G., & Fairfax, S.K. (2004). Land trusts and conservation easements: Who is conserving what for whom? *Conservation Biology 18* (1): 65-75.

Milder, J.C., Arbuthnot, M., Blackman, A., Brooks, S.E., Giovannucci, D., Gross, L., Kennedy, E.T., Komives,

K., Lambin, E.F., Lee, A., Meyer, D., Newton, P., Phalan, B., Schroth, G., Semroc, B., Rikxoort, V., & Zrust, M. (2014). An agenda for assessing and improving conservation impacts of sustainability standards in tropical agriculture. *Conservation biology 29* (2): 309-320.

Miller, J., & Hobbs, R. (2002). Conservation where people live and work. *Conservation Biology 16* (2): 330-337.

Murray, D.L., Majchrzak, Y.N., Peers, M.J.L., Wehtje, M., Ferreira, C., Pickles, R.S.A., Row, J.R., & Thornton, D.H. (2015). Potential pitfalls of private initiatives in conservation planning: A case study from Canada's boreal forest. *Biological Conservation 192*: 174-180.

Newmark, W. D. (1995). Extinction of mammal populations in western North American national parks. *Conservation Biology 9*: 512–526.

Palmer, M., & Filoso, S. (2009). Restoration of ecosystem services for environmental markets. *Science325*: 575–576

Paquette, A., Hawryshyn, J., Vyta Senikas, A., & Potvin, C. (2009). Enrichment planting in secondary forests: a promising clean development mechanism to increase terrestrial carbon sinks. *Ecology and Society 14* (1): 31.

Peterson, D. (2003). *Eating apes*. University of California Press, Berkeley.

Phelps, J., Friess, D.A., & Webb, E.L. (2012). Win-win REDD+ approaches belie carbon-biodiversity trade-offs. *Biological Conservation 154*: 53-60.

Pimm, S. L., Russell, G. J., Gittleman, J. L., & Brooks T. M. (1995). The future of biodiversity. *Science 269*: 347–350

Potts, J., Lynch, M., Wilkings, A., Huppé, G., Cunningham, M., &Voora, V. (2014). *The State of Sustainability Initiatives Review 2014: Standards and the Green Economy*. International Institute for Sustainable Development (IISD) and the International Institute for Environment and Development (IIED)

Prager, C.M., Varga, A., Olmstead, P., Ingram, J.C., Cattau, M., Freund, C., Wynn-Grant, R., & Naeem, S. (In press). An assessment of adherence to basic ecological principles by payments for ecosystem service projects. *Conservation Biology*: doi (10.1111/cobi.12648).

Raakjaer-Nielsen, J.P.D., Kuperan Viswanathan, K., & Mafuzuddin, A. (2002). Fisheries co-management – an institutional innovation. Perspectives and challenges ahead. Paper no. 216. IIFET Conference, August 19-22. Wellington, New Zealand.

Robertson, M., BenDor, T.K., Lave, R., Riggsbee, A., Ruhl, J.B., & Doyle, M. (2014). Stacking ecosystem services. *Frontiers in Ecology and the Environment 12* (3). 186-193.

Robinson, J.G. (2012). Common and conflicting interests in the engagements between conservation organizations and corporations. *Conservation Biology* 26 (6): 967-977.

Rueda, X., & Lambin. E. F. (2013). Responding to globalization: impacts of certification on Colombian small-scale coffee growers. *Ecology and Society 18* (3): Article 21.

Sæbø, A., Benedikz, T., & Randrup, T.B. (2003). Selection of trees for urban forestry in the Nordic countries. *Urban Forestry and Urban Greening 2*: 101–114.

Sánchez-Azofeifa, G., Pfaff, A., Robalino, J.A., & Boomhower, J.P. (2007). Costa Rica's payment for environmental services program: Intention, implementation and impact. *Conservation Biology 21* (5): 1165-1173.

Saunders, D.A., Hobbs, R.J., & Margules, C.R. (1991). Biological con- sequences of ecosystem fragmentation: a review. *Conservation Biology 5*: 18–32

Smith, A. (2014). Fortune 500 companies spend more than $15bn on corporate responsibility. Financial Times, October 13. Retrieved from: www.ft.com/cms/s/0/95239a6e-4fe0-11e4-a0a4-00144feab7de.html

Spence, M. (1999). *Dispossessing the wilderness: Indian removal and the making of the national parks*. New York: Oxford University Press.

Sodhi, N., Koh, L.P., Brook, B.W., & Ng, P.K.L. (2004). Southeast Asian biodiversity: An impending disaster. *Trends in Ecology and Evolution* 19 (12): 654-660.

Tan, A. (2003). *Forest certification: green stamp of approval or rubber stamp of destruction?* Greenpeace, Toronto, Ontario, Canada.

Thompson Reuters (2015). *Web of Science*. New York. Retrieved from http://login.webofknowledge.com/

United Nations. (2005). World urbanization prospects: The 2005 revision. Department of Economic and Social Affairs Population Division. Retrieved from: http://www.un.org/esa/population/publications/WUP2005/2005wup.htm.

Utting, P. (2008). The struggle for corporate accountability. *Development and Change 39*: 959–975.

Van Dyke, F. (2008). *Conservation biology foundations, concepts, applications*. Springer Netherlands: 1-27.

Villamor, G.B., & van Noordwijk, M. (2011). Social role-play games vs individual perceptions of conservation and PES agreements for maintaining rubber agroforests in Jambi (Sumatra), Indonesia. *Ecology and Society 16* (3): Article 27

Young, R. (2010). Paying for Biodiversity Enhancing the cost-effectiveness of payments for ecosystem services. New OECD Publication, October. Retrieved from: http://www.oecd.org/env/resources/46131323.pdf

Zerbe, D. (2010). Lessons from the Nature Conservancy – BP controversy. Chronicle of Philanthropy. Retrieved from: http://philanthropy.com/blogs/watchdog/lessons-from-the-nature-conservancy-bp-controversy/ 24345.

3

The Impact of Global Palm Oil Certification on Transnational Governance, Human Livelihoods and Biodiversity Conservation

Denis Ruysschaert

3 The Impact of Global Palm Oil Certification on Transnational Governance, Human Livelihoods and Biodiversity Conservation

Denis Ruysschaert [1]

Abstract

The Roundtable on Sustainable Palm oil (RSPO) is a voluntary stakeholder initiative on the palm oil supply chain. It is a response from agro-business firms and international environmental NGOs to the dramatic conditions of production in South East Asia. The RSPO certified « sustainable » 21% of global palm oil production in 2015. This article assesses the impact of the RSPO certification on transnational governance, social equity and biodiversity conservation.

As the premium is far below certification costs, only the largest producers – 73 firms controlling more than 2,6 million hectares – have been certified to get access to Western markets. Certification has reified as « sustainable » the industrial agro-business model on several thousands of hectares and has integrated this oil into the agro-industry.

RSPO has empowered local communities to accept or reject plantations on their territory. However, when the plantations were established, certification did not necessarily provide more benefits to locals than conventional plantations. In addition, excluded from the certification, local firms have not benefitted from it.

Regarding biodiversity conservation, certification has promoted a segregated landscape with large-scale plantations and conservation areas. At the global level, this could make sense as large oil palm plantations are very productive. However, this fails to recognize that the main biodiversity conservation gains are by supporting the smallholders and that this promotes the consumerist society at the root causes of biodiversity decline. At the field level, impact on conservation is very small as producers use strategies to limit the areas they have to protect and as oil palm plantations are ecological barriers.

To mitigate those problems, international environmental NGOs developed remote sensing tools and engaged with the largest producers. After more than 10 years of existence, it is yet to be proven that this top-down approach can curb deforestation. Actors should go beyond RSPO certification, tackle local factors of decision-making, collaborate with state governments and inform consumers.

Keywords: Biodiversity, livelihood, palm oil, private governance, Indonesia, RSPO

1 Dr sociology – agriculture, biodiversity and climate. Associate Researcher CERTOP, University Toulouse Jean Jaurès, denis.ruysschaert@gmail.com

Introduction

At the turn of the 20th century, non-governmental organizations (NGOs) started to work with agri-business firms, especially so-called "downstream firms" (this terms includes retailers, processors, consumer goods manufacturers and banks), to establish global certifications for agricultural commodities produced in the tropics, through the establishment of roundtables. This move gave life to the roundtables on palm oil in 2004 (the *Roundtable on Sustainable Palm Oil – RSPO*), on soya in 2004 (*Roundtable on Responsible Soy - RTRS*), on sugar cane in 2006 (*Better Sugar Cane Initiative*) and on agro-fuels in 2008 (*Roundtable on Sustainable Biomaterial*). The original idea was to work with all the private stakeholders of an agricultural supply chain to establish a standard that includes social and environmental criteria. This novel mode of action is part of an overall historical process to establish an international framework to conserve biodiversity in tropical countries (Adams, 2004; Ruysschaert, 2013).

This article focuses on the Roundtable on Sustainable Palm Oil (RSPO). The palm oil market has grown exponentially because of demand from agro-business and, more recently, from agro-fuels. Palm oil accounts now for 40% (or 70,000 tons, including palm oil from the pulp and palm oil kernel from the seed) of the global vegetable oil market (Figure 1) (USDA, 2016).

With this rising demand, Malaysia and Indonesia, the two main producers with 86% of world production (Figure 2), have embarked on ambitious oil palm plantation expansions. Palm oil is at the centre of Indonesian short-term (2010-2014) and long-term (2000-2015) development plans (2004, BAPPENAS). Oil palm plantations now cover between 15 and 20 million hectares in Malaysia and Indonesia, with an additional 15 to 27 million hectares earmarked for expansion (BPS, 2014; DGEC, 2014; Colchester & Chao, 2011). Peat land forest areas in both countries are particularly

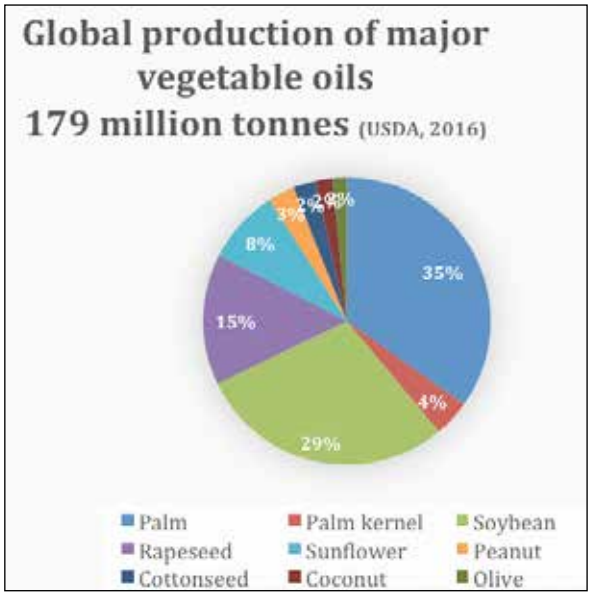


Figure 1: Global production of major vegetable oils (USDA, 2016)

threatened. In 2010, plantations covered 3.1 million hectares of peat land, with a projection to reach 6 to 9 million hectares by 2020 (Miettinen et al., 2012).

Established as monocultures, oil palm plantations raised social and environmental concerns. They are often established on community lands, which creates direct conflict with local people. For example, most of the more than 3500 land disputes in Indonesia alone between 1997 and 2009 were due to oil palm plantations (Jiwan, 2013). Unique lowland forest habitats are destroyed with their cohorts of species, many classified as Critically Endangered on the IUCN Red List of Threatened Species, including orangutans, tigers and elephants (Conservation International, 2011; IUCN, 2015).

In this context, the RSPO idea emerged in 2002 pushed by the international environmental non-governmental organisation (NGO) WWF and agro-business firms based in The Netherlands and The United Kingdom, which had kept close relationships with their former colonies, respectively Indonesia and Malaysia (RSPO, 2002). Established as a roundtable in 2003 and formalized as an international

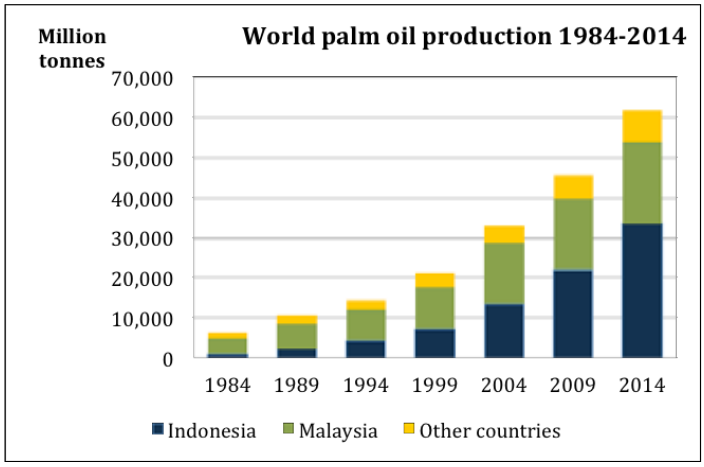


Figure 2: Historical evolution of world palm production 1984–2014 (USDA, 2016)

association in 2004, RSPO is made up of private members classified into seven categories along the supply chain: 1. palm oil growers, 2. palm oil processors, 3. consumer goods manufacturers, 4. environmental NGOs, 5. social NGOs, 6. banks/investors and 7. retailers.

In 2008, the RSPO introduced Certified Sustainable Palm Oil (CSPO) to the market, labelling the final product with a distinctive CSPO trademark (Figure 3). RSPO's objective is to promote the growth and use of sustainable palm oil (RSPO, 2004). In its vision, "RSPO *will transform markets to make sustainable palm oil the norm*" (RSPO, 2016a). This analysis will examine whether RSPO is fulfilling its vision using a three-step approach: first, it describes the overall palm oil sector in the main producing countries; second, it explains how the RSPO functions within this sector; and third, it assesses the impact of RSPO on three fundamental aspects of sustainability -- transnational governance, social equity and biodiversity conservation.

Figure 3: Label RSPO

This analysis is of key interest as RSPO has established itself as the largest sustainable agricultural certification scheme in the world. As of February 2016, it had 1305 ordinary members[1] (Figure 4) and was certifying 21% of global palm oil production (RSPO, 2016b).

Structure of the palm oil sector in main producing countries

At the beginning of the 20th century, the British and Dutch began their hegemony over the territory of the present Malaysian and Indonesian states. With the European industrial revolution, demand for agricultural products exploded, and western firms established large-scale plantations in Northern Sumatra and Malaysian peninsula (Barral, 2012). Yet, most of the forest remained managed in a decentralized manner by the different sultans according to local customary law (Wrangham, 2002). After the Second World War and the independence of Indonesia and Malaysia, both countries decided to take over the forest to establish strong states. In Indonesia for example, the State took over around 140 million of hectares of forest land. Establishment of this "Forest State" went hand-in-hand with an administrative regionalization, expanding central power at the local level. Portions of the forest state have then been then allocated to entrepreneurs for the country's development. After economic meltdown in Malaysia in the 1980s and in Indonesia in 1997, both countries accelerated this redistribution to entrepreneurs in the palm oil sector to create an export economy.

1 These are the full members who can vote at the General Assembly.

Development of the palm oil sector primarily benefits the investors close to the three levels of public administration, namely the State, the provinces and the districts. First and foremost, the largest leases of several hectares each are allocated to entrepreneurs close to central power (Gunawan, 2004; McCarthy, 2000). The largest producers in the world are now Malaysian or Indonesian: each of the largest 23 producers manages at least 100,000 hectares and, together, they control more than 7.8 million hectares (ZSL, 2016). Second, the governors (at provincial level) and heads of district (*Bupati)* can do the same for concessions up to 1000 hectares. This means in practice a great variety of producers. In Indonesia alone, 1217 farms of more than 50 hectares manage a total of 5.5 million hectares of oil palm plantations. In addition to those oil palm estates, there are smallholders that typically manage 2 hectares of land. They control an additional 5.0 million hectares in Indonesia (BPS, 2014; DGEC, 2014). As a result, the expansion of the palm oil sector supports the development of clientelism, with the establishment of administrative, economic and political networks that dispossess local people from their land (McCarthy, 2000). This situation has been highlighted in Aceh province, where a unique orangutan habitat - the Tripa peat swamp forest - was destroyed by large-scale plantations linked to powerful economic actors and political leaders. The destruction instigated violent conflicts with local communities (Ruysschaert et al, 2009; Tata et al, 2014).

Functioning of the RSPO

In the RSPO, sustainability is defined as the application of the 50-page guidance document called *Principles and Criteria for the Production of Sustainable Palm Oil*, which details eight principles and associated criteria and indicators (Table 1). The criteria and indicators associated with principles 5 and 7 specifically engage with biodiversity conservation. Criterion 5.2 requires growers to conserve rare species, habitats and

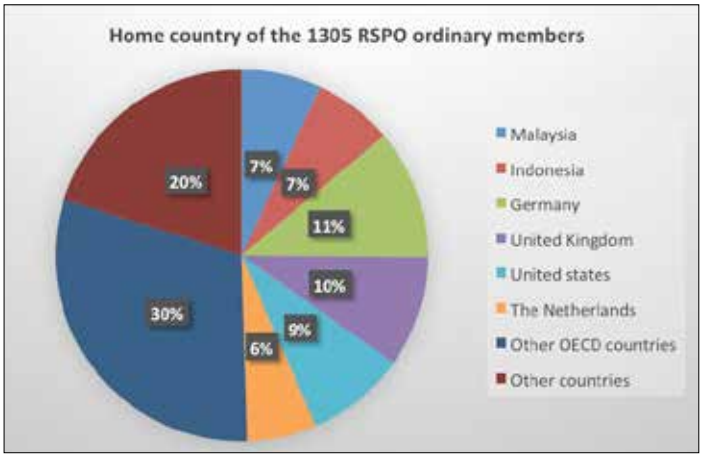


Figure 4: Distribution of ordinary members by country of origin (RSPO, 2016, 03 March)

control hunting (RSPO, 2013, p25). Criterion 7.3 requests that new plantings, starting from November 2005, do not replace primary forest or High Conservation Value (HCV) areas. HCV areas are defined by their importance for biodiversity conservation or local community wellbeing.

Approved at the RSPO General Assembly in 2007, the guidance document was revised in 2013 (RSPO, 2013) to strengthen its environmental criteria and indicators. Sustainability therefore is seen as an evolving concept in which each member category defends its own interests, while all are working together to achieve a common vision of sustainability.

The RSPO has three distinct governing bodies: The General Assembly (GA), the Board of Governors (BG) and the Secretariat. The GA is made of members and is the highest organ. The GA meets yearly; members can propose resolutions to interpret the implementation of the guidance document to favour their specific interest. For member environmental NGOs this is conservation and for member social NGOs it is social equity. Each member can vote on resolutions, which are endorsed by simple majority.

In between GAs, the BG provides strategic direction, including on how to implement the

Table 1: RSPO 8 principles

1.	Commitment to transparency
2.	Compliance with applicable laws and regulations
3.	Commitment to long-term economic and financial viability
4.	Use of appropriate best practices by growers and millers
5.	Environmental responsibility and conservation of natural resources and biodiversity
6.	Responsible consideration of employees and of individuals and communities affected by growers and mills
7.	Responsible development of new plantings
8.	Commitment to continuous improvement in key areas of activity.

adopted resolutions. Finally, the Secretariat manages RSPO logistics, organises yearly roundtables associated with the GA, promotes the RSPO worldwide, facilitates the work of the BG and implements the GA decisions under BG guidance.

Contrary to vertical command-control systems that characterize public policy, this private scheme seeks to set and achieve sustainability goals in a horizontal manner by creating a market for its members, who are encouraged to participate through two broad types of incentive. First, members are invited to negotiate openly and upfront the content of the guidance document and therefore the rules by which they must abide. Second, the overall system with respect to biodiversity conservation and social equity is based on a cheap bargaining model (Ruysschaert & Salles, 2014), where the growers implement the standard to the benefit of the downstream firms (palm oil processors, consumer goods manufacturers, retailers and investors). At first glance, RSPO appears to respect two conditions required for this model to work. First, growers will participate in the scheme because they receive adequate financial compensation in the form of a premium price. This premium must be higher than the cost to the grower to implementing the standard. This cost includes both the forgone economic opportunity to convert an area into an oil palm plantation for direct economic gain and the transaction costs linked to certification. Second, all other transaction costs (such as information, negotiation and external supervision) are insignificant. The membership fee is set at €2000/year; negotiation costs are kept low with a single yearly physical meeting; and environmental NGOs provide external oversight as "watch dogs" at no cost to growers or downstream firms (Ruysschaert & Salles, 2014).

Picture1: large-scale oil palm plantation on Tripa peat swamp forest

Photo credit: Denis Ruysschaert

Impact of the RSPO in practice: transnational governance, local communities and biodiversity conservation

3.1. RSPO impact on transnational governance

While appearing open to all with its principles of inclusiveness and consensus building, RSPO certification largely favours three dominant groups of stakeholders when it is implemented: the downstream agro-business firms, the international environmental NGOs and the largest palm oil producers. Explanation of those rather counterintuitive observations is provided below.

For the downstream firms, RSPO certification fulfils their initial goal to secure their business

in the long term and protect their reputation (RSPO, 2002) by getting a sustainable label in a cheap manner. Indeed, as they largely control the GA with 84% of the votes (Figure 5), they have secured agreements that favour their interests. Downstream firms rejected the producers' GA resolution that would have segregated supply chains for the CSPO from global palm oil supply, and would have required a premium of at least 30 USD per ton of CSPO to cover the producers' certification costs. Instead, downstream firms do not bother to pay any premium for half of the CSPO produced globally: the producer has to sell it as conventional palm oil (RSPO, 2015). Downstream firms imposed two additional instruments from which they benefit through reduced logistical and administrative costs along the supply chain: mass balance and GreenPalm certificates. These instruments now account respectively for 25% and 50% of CSPO that is purchased, with the segregated CSPO accounting for the remaining 25% (RSPO, 2015). In mass balance, CSPO can be mixed with non-CSPO and the proportion of CSPO is followed along the supply chain to the final product, which can be labelled CSPO. In GreenPalm certificates - an instrument developed by British-based palm oil processor AAK - the producer receives a certificate for each ton of CSPO and the downstream firm buys these certificates to cover its purchases on the palm oil market. As a result, the GreenPalm certificate represents to the consumer a product with a CSPO label without the producer having applied the criteria. This method is extremely cheap for the downstream firms as it doesn't involve extra logistical or administrative costs, and as one certificate costs only 4 US dollars per ton of CSPO. This price is less than 1% of the price of crude palm oil on the world market (USDA, 2016). It is also significantly cheaper than the price downstream firms pay for segregated CSPO, which is between 30 - 70 US dollars per ton, with logistical and administrative cost on top.

Controlled by downstream firms, the GA has generally adopted resolutions put forward by international environmental "collaborative" NGOs (Ruysschaert & Salles, 2016) - they are NGO members that pursue a collaborative strategy to strengthen the standard - though they comprise only 3% of the members (Figure 5). The reason is that the firms do not have to support the costs of implementing the decisions and benefit from decisions that reduce their reputational exposure in the producing countries, securing their long-term supply chain (Ruysschaert & Salles, 2016). For example, the GA adopted decisions to protect Tripa forest (2008) and Bukit Tigapuluh ecosystems (2009), new planting that avoids deforestation of primary forest (2008), manage peat (GA 2009), conserve secondary forest (GA 2010) and force producers to provide the boundaries of all concessions (GA 2013).

Producers have little economic interest in RSPO certification, because the premium - if any is paid at all - remains largely below certification costs and the opportunity cost of setting aside conservation areas to fulfil certification requirements. Mammals, in particular require extensive protected areas. For example, the habitat of one orangutan is about 1 km^2 of forest area, for which the opportunity cost is at least 10 US dollars/ per ton of palm oil produced from for a 10000-hectare oil palm plantation (Ruysschaert &Salles 2014).

As a result, only 73 producers have been certified in order to get access to the Western market. These are very large producers that have together certified 2.6 million hectares, or more than 99% of the total area certified (RSPO, 2015). The situation is even more polarized, with 65% of the global supply of CSPO produced by only 10 companies; 25% of the global supply is produced by a single company, Sime Darby, the largest palm oil producer in the world, managing about one million hectares of oil palm plantations (RSPO, 2015).

3.2. RSPO impact on local livelihoods

RSPO has forced large-scale palm oil producers,

almost all involved in the RSPO, to work much more effectively with local communities when establishing new plantations. Even though engagement with local communities before planting is compulsory under Indonesian and Malaysian laws, it is only with RSPO oversight that it really matters. With RSPO certification, communities and more broadly, all stakeholders, have been empowered. The "New Planting Procedure" (RSPO, 2016d) asks producers to give access to all information regarding new permits, including concession boundaries and impact assessments. Local communities can fight for their rights with this information available, even though they may have problems getting their claims through the RSPO complaint procedure, either because they find it difficult to provide the needed evidence (Silva-Castaneda, 2012) or because the process is too lengthy. The process requires about two years and often more, which is very long for communities facing destruction of their livelihoods (Ruysschaert & Salles, 2014). In any case, RSPO has provided a step forward for communities asked to accept or reject large-scale plantations. A total of 56 complaint cases had been brought to the RSPO by early 2016, including 37 cases directly linked to local land rights (RSPO, 2016e).

Considering the impact of RSPO on local livelihoods in terms of local benefits from RSPO certification, there are few achievements from the perspectives of the firms or the communities. At the firm level, employment for local people by certified producers is dominated by unskilled labour in the plantations. RSPO principles and criteria have done little to improve low wages and safety (Parker, 2013). Firms implement national legislation requiring payment of the "legal minimum wage" (RSPO, 2013, p39), which is extremely low in producing countries. It is about 4-5 US dollars per day in Indonesia, even lower in forest margins where new plantations are established. On health issues, RSPO continues to authorize application of highly controversial chemicals such as paraquat, relying on members to phase out use of this chemical "voluntarily" (RSPO, 2014, p31). More generally, RSPO doesn't recognize trade unions as a RSPO stakeholder category and doesn't facilitate a process for workers to fight for their rights by joining a trade union. As a result, workers haven't any means to voice their concerns within the RSPO. Structurally excluded from the RSPO, workers and trade unions have organized mass protests (Parker, 2013). However, these actions have little impact on the RSPO itself, as these requests are incompatible with the prevailing management discourse in the RSPO (Ruysschaert & Salles, 2014).

At the community level, all small- and medium-scale producers (from 50 to a few thousand hectares) established with the support of administration at village, district or provincial levels, have been left out of the certification scheme. In Indonesia, these producers account for more than 95% of oil palm producers (SBS, 2014). RSPO has also excluded from certification almost all the smallholders, who control about 50% of land area, but account for less than 1% of certified areas. For example, smallholders control 50% of oil palm plantations by area in Indonesia, but only 0.1% of the certified area (BPS, 2014; DGEC, 2014; RSPO, 2015c). Indeed, for these local stakeholders, certification makes no economic sense. Certification cost for a smallholder is about 50 US dollars a ton, apart from recurring costs of management to maintain the certification over the years (Leegwater, 2014). RSPO has established a fund to boost smallholder certification. Financed by CSPO transactions - with one US dollar per ton of CSPO - the fund is far too small; it can support certification of only a couple of thousand hectares by smallholders per year. RSPO is now assessing the possibility of group certification to support smallholder certification at the landscape level (RSPO, 2016c).

3.3. RSPO impact on biodiversity

By promoting both maximum output (Principle 3: Commitment to long-term economic and financial viability) and conservation

of biodiversity (Principle 5: Environmental responsibility and conservation of natural resources and biodiversity), RSPO certification leads to segregated landscapes with, on the one-hand, large-scale monocultures and, on the other hand, conservation areas.

The impact of this situation on biodiversity conservation can be evaluated from two complementary angles: global and local (plantation level). Worldwide, the impact of RSPO certification seems very positive. Large-scale monocultures of oil palm plantations generate about 4 tons of vegetable oil per hectare per year, which is at least four times more than competitors (e.g. sunflower, soy). Therefore, promotion of oil palm plantations, especially RSPO certified plantations that are seeking maximum output, could be considered the best means to reducing the global impacts of industrial vegetable oil crops on tropical forest (CBD, 2010). However, this analysis falls short on two points. First, the largest gains for biodiversity conservation can be made by supporting smallholders in order that they improve their palm oil output, which in turn will limit the total land needed for oil production, (Ruysschaert & al, 2011). Second, it fails to recognize that the vegetable oil market is not stable, but is exploding due to increasing demand from agro-business and agro-fuel (USDA, 2016). Viewed globally, RSPO certification promotes the very consumerism societal choices that are the root causes of current biodiversity decline. For example, more than 50% of total greenhouse gas emissions are directly linked to industrial agriculture (CBD, 2010; GRAIN, 2016).

At the plantation level, most of the largest oil palm producers are engaged in the RSPO certification process. Abiding by RSPO rules, they must preserve primary forest, reduce impact on peat areas and protect habitats containing rare species. Potentially, they must protect huge areas for biodiversity conservation as most, if not all, remaining

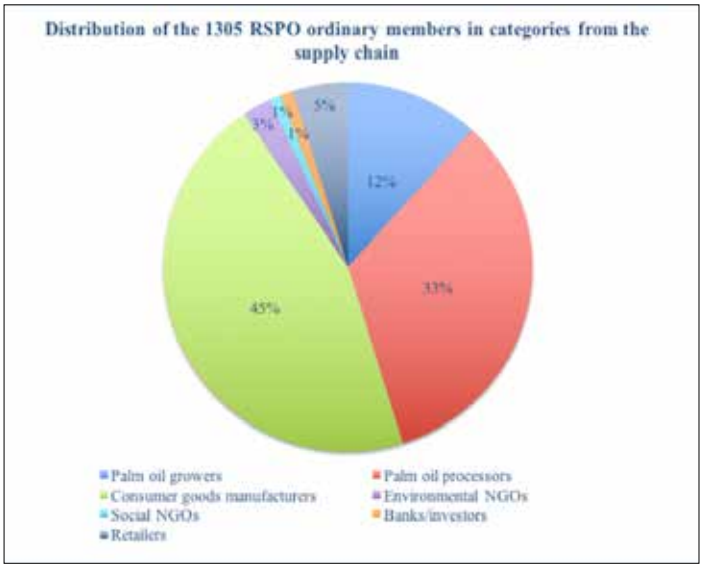


Figure 5: Percentage of RSPO members by category of member.

Source: RSPO 2016, March 03

lowland in Indonesia and Malaysia is of exceptional biodiversity value (IUCN, 2015; Conservation International, 2011). In addition to the opportunity cost of not turning this land into oil palm plantations, producers also must protect conservation areas from conversion by local communities, although these lands are designated for development by the state and communities have legitimate claims to its use.

Large-scale producers have adapted to this dilemma in several ways. First, they tend to certify only long-established plantations, not all plantations. Globally, certified area increased very little (e.g. from about 2.6 to 2.7 million hectares in 2015), accounting for only half of the area controlled by large-scale producers. Second, they took advantage of imprecision in the RSPO guidance document to reduce land set aside for conservation areas. The most recent version (RSPO, 2013) merely requests that plantations on peat land are minimized and doesn't specifically mention relevant indicators of the importance of biodiversity conservation (e.g. threatened species such as orangutans). Producers can continue to grow oil palm on peat and postpone improvements on the grounds of economic feasibility. This guidance also allows

subjective classification of degraded land or secondary forest suitable for development as "High Conservation Value Forests" (HCVF) -- areas that should be conserved for social or ecological values. Third, producers can adapt to the socio-politico-legal system at the local level (Colchester et al., 2009): they tend to focus only on the areas they can develop into plantations, and leave the other areas to other actors (e.g. local communities, smallholders and small-to-medium estates,) who are indifferent to CSPO labelling. Fourth, and finally, an effective external control system is lacking. Since the production of the first CSPO trademark oil in 2008 and Greenpeace's subsequent trademark infringement complaint against the grower, RSPO has established a complaint system. Even if it is open to all, the reality is that only NGOs bring cases, focusing strategically on those most likely to be successful (Ruysschaert & Salles, 2014).

These four shortcomings in the RSPO system complement each other, such that overall impact of certification on biodiversity conservation remains rather small at the landscape level. Even when areas are conserved, many are established within large-scale oil palm monocultures that create ecological barriers for many species, including orangutans. These conservation areas are unlikely to support the survival of species in the long term (Struebig et al., 2011; Edwards et al., 2010).

To tackle these shortcomings in biodiversity conservation impacts, NGOs have put forward two broad, complementary strategies focused on enhancing transparency and zero deforestation (Ruysschaert & Reiner, 2015). World Resource Institute (WRI) established Global Forest Watch (WRI, 2016) as an interactive tool to show forest impacts on each plantation in real time, showing especially fire hotspots and deforested areas. The Zoological Society of London complemented this tool with the Sustainable Palm Oil Transparency Toolkit (SPOTT) (ZSL, 2016). SPOTT combines satellite-mapping technology with environmental performance assessments for 50 of the largest palm oil producing companies, comparing them through a variety of indicators. With similar intent, the 2014 GA endorsed a Unilever resolution entitled "Declaration of Mills" requiring full transparency throughout the supply chain, thereby forcing the GreenPalm certificate platform to disclose information about the origin of traded certificates, at least at the mill level. To stop deforestation, Greenpeace and WWF have partnered with large growers historically targeted by Greenpeace campaigns, including Golden Agri-Resources, Asia Pulp and Paper and Wilmar International. They established the Palm Oil Innovations Group (POIG), whose aim is to completely halt deforestation and respect human rights (POIG, 2013). Considering this initiative too NGO-led, a group of prominent Malaysian and Indonesian growers and traders signed the alternative "Sustainable Palm Oil Manifesto" in 2014, focusing on the same issues. The "no deforestation" commitment has already attracted leading consumer brands (such as Ferrero, Mars, Nestlé and L'Oreal) and trading companies that account for 96% of the palm oil traded internationally (Finkelstein, 2014). With increasing interest in zero deforestation, the RSPO has launched the RSPO+ as a voluntary addendum to the RSPO standard.

Conclusion and perspective: RSPO impact on transnational governance, local livelihoods and biodiversity

RSPO has reified – transformed an abstract concept into a real or tangible fact – as "sustainable" the large-scale monocultures of oil palm plantations in producing countries and integrated their oil into downstream agribusiness firms (processors, consumer goods manufacturers, retailers and banks) in the Western world. In this process, it has had an impact on transnational governance by legitimizing the roles of the dominant private players: the downstream firms that demand the CSPO, the largest producers that supply it,

and the international environmental NGOs. This situation has created a dilemma, as certification has excluded all the local actors (smallholders, small and medium firms) and hasn't addressed the root causes of this massive biodiversity loss (land access, palm oil price, consumerist society).

The RSPO, with its vision to transform the market and its will to include all actors along the supply chain, has not achieved its conservation and social goals.

Regarding the impacts on local livelihoods, RSPO has empowered local communities to accept or reject large-scale plantations on their territory. However, when established, certified plantations fail to provide more benefits than conventional plantations. The certified plantations remain dominated by unskilled employment. There is no incentive for workers to fight for their rights, wages remain low and improvement in working conditions depends on voluntary measures, for example, phasing out paraquat, a dangerous herbicide. In addition, local firms are structurally excluded from the certification scheme and therefore do not benefit from it.

Regarding impacts on biodiversity conservation, certification has promoted a segregated landscape with, on the one-hand, large-scale plantations and, on the other hand, conservation areas. When considering the global situation, this could make sense, as large oil palm plantations are at least four times more productive than other oil crops. However, this analysis is short-sighted for two reasons: first, it fails to recognize biodiversity conservation benefits that could be gained by supporting the smallholders that produce only half of the large-scale producers; second, it overlooks the fact that the palm oil market is exploding because of global demand for food and fuel. RSPO certification thus promotes the societal choices that are the root causes of current biodiversity decline. When considering the impact of certification on biodiversity on the ground, assessment is sobering. While abiding by RSPO rules, large-scale producers have reduced conservation areas through four different mechanisms. First, they have certified only about half of oil palm plantations – those long-established with few social or environmental issues. Second, they have taken advantage of guidance document imprecision to reduce conservation areas. Third, they have interplayed with the socio-politico-legal system at the local level, focusing only on the areas they can develop and leaving other areas to the other actors indifferent to CSPO labelling. Fourth and finally, some producers have breached the rules, as the external control system by NGOs has little effect. In addition, even when areas are conserved, they may not be viable for the majority of affected species, as they are established within large-scale oil palm monocultures. International "collaborative" environmental NGOs have responded to this situation by engaging even more deeply with RSPO (Ruysschaert & Salles, 2016). They developed user-friendly remote sensing tools to track deforestation and joined forces with some of the largest producers for "zero deforestation".

At the firm level, employment for local people by certified producers is dominated by unskilled labour in the plantations. RSPO principles and criteria have done little to improve low wages and safety.

After more than 10 years of existence, it is yet to be proven that the RSPO top-down approach

Picture 2: Orangutans trapped into forest blocks within plantations have to be rescued and trans-located

Photo credit: Denis Ruysschaert

can curb deforestation. Primary forest loss in Indonesia remains steadily high (Margono B.H. et al., 2014). Nearly all local social and environmental NGOs have left RSPO. There are no local actors on the Board of Governors, as Sawit Watch – the network of Indonesian social NGOs – stepped down in 2012.

One would argue that the lack of biodiversity conservation and positive social impacts are linked to the fact that most of the local actors have left the RSPO, leaving the standard un-balanced. Under that hypothesis, if local actors had remained RSPO certification would have been more affordable for them. RSPO standard could "fix" this problem by offering smallholders group certifications that address costs and government could support to make available degraded lands.

This solution hides the fact that local actors have left the RSPO because they were unable to influence the standard, and not the other way around. In reality, poor conservation impact, limited social inclusivity and reification as "sustainable" of the agro-business model are three symptoms of a much deeper issue: what happens is nothing else than a territorial conflict.

The process of territorialisation in the RSPO standard is demonstrated in another article (Ruysschaert et al., 2016). This territorialisation creates access rights for dominant economic actors, excludes local actors, and is organized around its own management ethos. Territorialisation takes place in a logic of continuity, reifying as 'sustainable' the historic international trading route for palm oil destined for European markets and (re)legitimizing an agro-industrial production model and long distance trade (Ruysschaert et al., 2016).

Therefore, to have a have meaningful impact on local livelihoods and biodiversity conservation, actors must go beyond RSPO certification. They must tackle the underlining local factors of decision making (e.g. land use, price), collaborate with states to support local communities (better yields through seedlings and technical practices, better market access, support for plantations on degraded land) and inform consumers about what it means to be "sustainable" in agricultural systems, social equity and biodiversity conservation.

References

Adams, W. (2004). *Against Extinction. The Story of Conservation.* London, United Kingdom: Earthscan.

BAPPENAS (2004). Tahun 2005–2025 per 25 February 2004. Retrieved from http://www.bappenas.go.id/data-dan-informasi-utama/ekonomi-makro1/visi-dan-arah-pembangunan-jangka- panjang-pjp/tahun-2005-2025-per-25-februari-2004/

BPS (2014). *Number of Large Estate Crops by Companies 2000–2014.* Jakarta, Indonesia: Statistics of Indonesia. Retrieved from http://www.bps.go.id/linkTabelStatis/view/id/1668

CBD (2010). *3ème édition des Perspectives mondiales de la diversité biologique.* Montréal, Canada: Convention on Biological Diversity.

Colchester, M. & Chao., S. 2011 (Ed). *Oil Palm Expansion in South East Asia. Trends and implications for local communities and indigenous peoples*. Moreton-in-Marsh, United Kingdom: Forest Peoples Programme and Sawit Watch.

Colchester, M., Anderson, P., Jiwan, N. & Andiko. (2009). *HCV and RSPO: results of an investigation. Public Discussion Document*. Moreton-in-Marsh, United Kingdom: Forest Peoples Programme, HuMa, Sawit Watch and Wild Asia.

Conservation International (2011). *The World's 10 Most Threatened Forest Hotspots*. Retrieved from http://www.conservation.org/NewsRoom/pressreleases/Pages/The-Worlds-10-Most-Threatened-Forest-Hotspots.aspx

DGEC (2014). *Statistik perkebunan Indonesia 2013-2015. Palm Oil.* Jakarta, Indonesia: Directorate General of Estate Crops.

Edwards, D., Hodgson, J., Hamer, K., Mitchell, S., Ahmad, A., Cornell, S. & Wilcove, D. (2010). Wildlife-friendly oil palm plantations fail to protect biodiversity effectively. *Conservation Letters*, 3(4), 236–242.

Finkelstein, J. B. (2014). 96% of Global Palm Oil Trade Converted by Zero Deforestation. *Chain Reaction Research,* 8 December 2014. Retrieved from: http://skollworldforum.org/editor-pick/96-of-global-palm-oil-trade-covered-by-zero-deforestation/.

GRAIN (2016). *The great climate robbery: How the food system drives climate change and what we can do about it.* Barcelona, Spain: GRAIN.

Gunawan, K. (2004). *The Politics of the Indonesian Rainforest: A Rise of Forest Conflicts East Kalimantan during Indonesia's Early Stage of Democratisation.* Götingen, Germany: Cuvillier Verlag.

IUCN (2015). *IUCN Red List of Threatened Species.* Gland, Switzerland: IUCN. Retrieved from http://www.iucnredlist.org

Jiwan, N. (2013). The political ecology of the Indonesia palm oil industry, a critical analysis. In O. Pye O. & J. Bhattacharya (Ed.), The *Palm Oil Controversy in South East Asia. A transnational perspective* (1st ed., pp. 48–75). Singapore: Institute of Southeast Asian Studies.

Leegwater, M. (2014). *Solidaridad, Change that matters. The business case of RSPO certification for smallholders TR12.* Kuala Lumpur, Malaysia: RSPO. Retrieved from http://www.rt12.rspo.org/ckfinder/userfiles/files/1_%20Marieke%20Leegwater.pdf

Margono, B.A., Potapov, P., Turubanova, S., Stolle, F., & Hansen, M. (2014). Primary forest cover loss in Indonesia over 2000–2012. Nature *Climate Change,* 4, 730–735 doi:10.1038/nclimate2277

McCarthy, J. (2000). The Changing Regime: Forest Property and Reformasi in Indonesia. In M. Doornbos, A. Saith & B. White (Eds), *Forests: Nature, People, Power* (pp. 89–127). Massachusetts: Blackwell Publishers.

Miettinen, J., Hooijer, A., Chenghua, S., Tollenaar, D., Vernimmen, R., Chin Liew, S., Mallins, C. & Page, S. (2012). Extent of industrial plantations on Southeast Asian peatlands in 2010 with analysis of historical expansion and future projections. *Glob. Change Biol. Bioenergy, 4, 908–918.*

Parker, D. (2013). Palm oil workers stage massive protest at sustainability meeting in Indonesia. November 19, 2013. *Mongabay.* Retrieved from http://news.mongabay.com/2013/1119-dparker-palm-oil-worker-protest.html

POIG, 2013. Palm Oil Innovations Group Charter. Retrieved from http://www.greenpeace.org/international/Global/international/photos/forests/2013/Indonesia%20Forests/POIG%20Charter%2013%20November%202013.pdf

Putri, N. (2010) *Building a State, Dispossessing the Nation: Sovereignty and Land Dispossession in Indonesia*. Thèse de doctorat. Geneva, Switzerland: Institut des Hautes Etudes Internationales et du Développement/ Graduate Institute.

RSPO (2002). *Minutes of the Preparatory Meeting September 20, 2002*. London, United Kingdom: RSPO.

RSPO (2004). *Statutes – Roundtable on Sustainable Palm Oil.* Kuala Lumpur, Malaysia: RSPO.

RSPO (2013). *Principles and Criteria for the Production of Sustainable Palm Oil.* Kuala Lumpur: RSPO.

RSPO (2014). *Impact report 2014.* Kuala Lumpur, Malaysia: RSPO.

RSPO (2016a). *About us. Update 12 February 2016.* Retrieved from http://www.rspo.org

RSPO (2016b). *Member.* Retrieved from http://www.rspo.org/members?keywords=&member_type=Ordinary+Members&member category=Supply+Chain+Group+Manager&member_ country=All

RSPO (2016c). *RSPO smallholder group certification documents.* Retrieved from http://www.rspo.org/resources/key-documents/certification/rspo-smallholders-group-certification

RSPO (2016d). *New Planting Procedure.* Retrieved from http://www.rspo.org/certification/new-planting-procedures

RSPO (2016e). *Status of complaints.* Retrieved from http://www.rspo.org/members/status-of-complaints

RSPO 2015. *Annual Communication of Progress. Digest & Narrative 2015*. Kuala Lumpur, Malaysia: RSPO.
Ruysschaert, D., Singleton, I. & Sudarman, S. (2009). Inappropriate land use in the coastal Tripa peat swamps on the West coast of Aceh. Banda Aceh. *Icones conference*.
Ruysschaert, D., Darsoyo A., Zen R., Gea, G., Singleton, I. (2011). *Developing palm-oil production on degraded land.* Foundation PanEco, YEL, World Agroforestry Centre, Medan.
Ruysschaert, D. (2013). Le rôle des organisations de conservation dans la construction et la mise en oeuvre de l'agenda international de conservation d'espèces emblématiques: le cas des orangs-outans de Sumatra. Ph.D. thesis. Toulouse, France: University Jean Jaurès. Retrieved from http://www.theses.fr/2013TOU20078
Ruysschaert, D., & Salles, D. (2014). Towards global voluntary standards: Questioning the effectiveness in attaining conservation goals. The case of the Roundtable on Sustainable Palm Oil (RSPO). *Ecological Economics*, 107, 438-446.
Ruysschaert, D., & Reiner, H. (2015). From Process to Impact of a Voluntary Standard: The Roundtable on Sustainable Palm Oil. In H. Rainer, A. Lanjouw and A. White (Eds.), *State of the Apes 2015 Industrial Agriculture and Ape Conservation.* (1st ed., pp.134-163). Cambridge, United Kingdom: Cambridge University Press.
Ruysschaert, D., & Salles, D. (2016). The role and effectiveness of conservation NGOs in the global voluntary standards: the case of the Roundtable on Sustainable Palm-Oil. *Conservation & Society* 14(2), 73-85.
Ruysschaert, D, Carter, C., & Cheyns, E. (2016). Certification de l'huile de palme durable: stabilisation d'un « nouveau » territoire transnational? *Economie Rurale forthcoming.*
Silva-Castaneda, L. (2012). A forest evidence: third-party certification and multiple forms of proof — a case study of oil palm plantations in Indonesia. *Agric. Hum. Values,* 29, 361–370.
Struebig, M.J., Kingston, T., Petit, E.J., Le Comber, S.C., Zubaid, A., Mohd-Adnan, A. & Rossiter, S.J. (2011). Parallel declines in species and genetic diversity in tropical forest fragments. *Ecol. Letters,* 14, 582–590.
Tata, H., van Noordwijk, M., Ruysschaert, D., Mulia, R., Rahayu, S., Mulyoutami, E., … Dewi, S. (2014). Will funding to Reduce Emissions from Deforestation and (forest) Degradation (REDD+) stop conversion of peat swamps to oil palm? *Mitig. Adapt. Strat. for Glob. Chan.,* 19 (6): 693-713.
USDA (2016). *Oilseeds: oil Markets and Trade. February 2016.* Washington: United States Department of Agriculture. Retrieved from http://apps.fas.usda.gov/psdonline/circulars/oilseeds.pdf
Wrangham, R. (2002). Changing Policy Discourses and Traditional Communities, 1960-1990. A Review. In C. Colfer & I. Resosudarmo (Eds). *Which Way Forward? People, Forests, and Policymaking in Indonesia* (pp 161-190). Washington D.C: Resources for the Future, Center for International Forestry Research (CIFOR) and Institute of Southeast Asian Studies (ISEAS).
WRI (2016). *Global Forest Watch*. Retrieved from http://www.globalforestwatch.org
ZSL (2016). *SPOTT Sustainable Palm Oil Transparency Toolkit.* Retrieved from http://www.sustainablepalmoil.org.

4

Exploring the potential of government and voluntary standards collaborations to scale up sustainable production and supply

David D'Hollander and Norma Tregurtha

4 Exploring the potential of government and voluntary standards collaborations to scale up sustainable production and supply

David D'Hollander and Norma Tregurtha[1]

Abstract

At their core, Voluntary Sustainability Standards (VSS) are tools for tackling issues of public concern such as biodiversity, climate change or human rights protection, in global supply chains. They are often explicitly based on norms or commitments agreed by governments at an international or multilateral level. Because VSS provide a means to complement and fill in the governance gaps left by national regulation, governments have sought to engage and use them in various ways. This contribution emphasizes the emergence of 'supply side' interactions which aim to scale up the production of sustainably produced commodities. We argue that governments in producing countries are showing an increased interest in using and collaborating with VSS – a willingness to engage which was largely absent in the past. This growing interest has opened up new ways for governments to integrate VSS into public policy and co-regulation. This article provides three examples of such emerging interactions: in the Brazilian coffee sector in the state of Minas Gerais, cotton production based on a concessionary model in Mozambique, and sustainable palm oil production in Indonesia and Malaysia. By way of conclusion, the paper reflects on the potential and limitations of such new interactions and co-regulatory initiatives, and highlights key areas requiring further research.

1 The authors are part of the ISEAL Alliance's Policy and Outreach team. The ISEAL Alliance is the global membership organisation for sustainability standards. It defines good practice for private standard-setting organisations, with the aim of increasing the uptake and impact of sustainability standards.

Introduction – Private Standards and Public Regulation: old dichotomies and new realities

Voluntary Sustainability Standards (VSS) have emerged and proliferated over the past two decades, positioning themselves as private sector tools which are able to address key sustainability challenges in various sectors, industries and geographies (Potts et al., 2014; ITC, 2015).[1] The role of VSS as innovative forms of governance has been well documented (see, for example, Vogel, 2008; Abbott and Snidal, 2009). In focusing on their role as non-state and private in nature, some have viewed VSS as the 'outsourcing' of public regulation (O'Rourke, 2003). This assumes that VSS are crafted and implemented in isolation of governments – an assumption refuted by the growing evidence of the diverse forms in which governments interact[2] with VSS (ITC, 2011; Eberlein et al., 2013; Bendell, Miller and Wortmann, 2011; Vermeulen et al., 2011).

Building on the notion that governments and VSS can benefit from greater mutual recognition and interaction, this contribution outlines recent developments and examples whereby public bodies or authorities in producer countries engage with VSS to scale up production. These *supply-side* interactions taking place in producer or export economies differ from what can be labelled *demand-side* interactions undertaken by governments at the consumer-end of global supply chains. We argue that such new supply-side interactions and co-regulatory initiatives have the potential to expand the sustainable management of commodity production. This is pertinent as demand for certain sustainably-produced soft commodities such as palm oil or cocoa has been rising rapidly (WWF, 2012). This situation is likely to continue as a growing number of multinationals have set ambitious sustainability targets, while many governments are committed to creating more sustainable production and consumption patterns. Emerging global frameworks such as the UN Sustainable Development Goals or the renewed climate change agreements are providing a common agenda and language for these actors and the VSS they use.

In this context of political mobilization and market pressures, the space for new relationships between VSS and governments is growing. Instead of representing competing regulatory regimes, which challenge or substitute public regulation, credible VSS are tools to be used by a range of public actors. Importantly, several developments indicate that this understanding of VSS is gaining ground among governments in producer countries. The three examples in this article illustrate how public entities make full use of the content, expertise and assurance or verification services provided by private VSS.

Governments and VSS: old and new interactions

In asking the question: 'how private are private standards?' (Marx, 2015), observers and practitioners are becoming increasingly aware of the interplay between private standards and public policies.

In trying to fulfil their commitment to a range of international agreements and global goals, governments have been confronted not only with the limits of conventional regulation, but also with the limits of intergovernmental action (Abbott and Snidal, 2009). While mainly driven by non-governmental actors, the rise of private sustainability standards has been catalysed by international governmental agreements.. Although their content reflects broader informal norms and expectations, VSS are also tools

1 In using the term 'voluntary sustainability standards' or VSS, this article refers to a specific sub-set of private sustainability standards that are active and applicable in multiple countries, and accessible to and constituted by international actors. This excludes ISO standards which are set by national standard-setting bodies.

2 By "interactions" we mean the myriad ways in which governance actors and institutions engage with and react to one another (Eberlein et al., 2013, p. 2).

for implementing international agreements such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Biological Diversity (CBD), and the International Labour Organization (ILO) conventions including the 1998 Declaration on Fundamental Principles and Rights at Work (Marx, 2015, p.7).[1] Whereas they may not be designed with the intention of becoming a tool in government policy or regulation, they offer policy makers a flexible alternative to traditional regulatory policy.

This is coupled with a better understanding among policy makers of how, a 'mix' of policy instruments and institutions is necessary to tackle specific sustainability issues (Cashore and Stone, 2012; see also Young, 2002). Policy-makers and sustainability experts are finding that developing a portfolio of interventions and 'stacking' different interactions is likely to be more effective than approaches focussing on one piece of regulation. The examples in this article illustrate how international VSS are often a binding element in the mix of policy instruments that can be deployed.

Emerging Supply-side Interaction, Collaboration, and Co-regulation

This contribution focusses on emerging between governments in commodity-producing countries and international VSS. These interactions aim to support and stimulate the *supply* of certified goods and services. These examples relate to soft commodity production in three geographic contexts: coffee in Brazil, cotton in Mozambique and palm oil in Indonesia and Malaysia.

These individual examples should be seen in a broader context in which national governments at the production end of global supply chains are taking steps to address sustainable production. A notable set of initiatives in this regard are the various national commodity platforms, supported by the United Nations Development Program (UNDP) which have been launched in ten commodity exporting countries.[2] In certain cases, commitments and action plans are linked to scaling up certification as part of 'greening' export industries, such as the government of Ecuador's ambition to have all cocoa produced certified and traceable (UNCTAD, 2016). Another example, further illustrated below, is Mozambique's policy to become the first country certifying 100% of its cotton production as sustainable (BCI, 2014). With a specific focus on interacting with VSS, national platforms have been set up under the umbrella of the United Nations Forum for Sustainability Standards (UNFSS). The first of such was launched in India (UNFSS, 2016) and similar platforms are planned to be launched in Brazil and China.

To improve and scale up sustainable production, national governments, ministries, government agencies and local governments have a range of measures at their disposal. Policy makers can adopt new regulations prescribing production and harvesting practices, support the development of appropriate technology such as new plant varieties, and provide producers and firms with information and support services to reduce the transaction costs associated with more sustainable practices. In such planning efforts, existing international VSS are coming to the fore as market-oriented tools with international reach.

The examples below indicate how new policy approaches can leverage the expertise and functionality of international VSS in various

1 Marx notes that because they integrate and implement existing international agreements and conventions, this implies that 'some international agreements are enforced in countries which have not ratified them such as for example the United States with regard to the Convention on Biological Diversity or other countries which have not ratified ILO conventions.' Marx. 2015, p. 7.

2 These diverse initiatives are part of the UNDP Green Commodity Programme, see http://www.undp.org/content/undp/en/home/ourwork/environmentandenergy/projects_and_initiatives/green-commodities-programme.html (accessed 10/06/2016).

ways. The first two examples illustrate how governments can develop their own voluntary standard or certification programme using the expertise of international VSS, with the aim to enter into mutual recognition arrangements with existing VSS. The second example highlights how governments can shape emerging efforts to re-think the scope of standards and certification, moving from individual production units to whole jurisdictions.

Mutual recognition between government and private voluntary standards

There are a number of reasons why governmental bodies may choose to set up a national voluntary sustainability standard rather than adopt new legislation or regulation. These can range from seeing the development of a national standard as an opportunity to meet the demands of international buyers , to exercising greater control over value chains, improving access to capacity-building for smallholders, and enhancing the local relevance of standards to meet the needs of domestic producers and firms (ISEAL, 2013). In setting up a national standard, governments can rely on the International Organization for Standardization (ISO) framework and their national standards-setting body (which fall outside the scope of this article), rely on technical experts to determine and design the standard, or adopt a more inclusive multi-stakeholder approach for setting a sustainability standard. Regarding the latter, notable examples include the TrusTea standard in India, the System Indonesian Sustainable Palm Oil (ISPO) for palm oil in Indonesia, and the Florverde standard for floriculture in Colombia (ISEAL, 2013).

While government-driven sustainability standards often address similar sustainability issues (land use, agricultural practices, labour rights, deforestation, etc.) and share a stakeholder base with existing international voluntary sustainability standards, this does not automatically imply interaction. As noted above, establishing government VSS at a national level is one way of challenging the presence of existing international VSS (ISEAL, 2013). The two examples below provide a contrasting approach of engagement and mutual interaction, whereby a government standard and certification programmes pursue integration and collaboration with international VSS.

Brazil - Minas Gerais State: sub-national certification scheme linking to international value chains

Minas Gerais State is the largest coffee producing region in Brazil and is responsible for more than 50% of the country's coffee harvest. The sector faces significant sustainability challenges including forced slavery, excessive pesticide use and other negative environmental impacts, all of which are exacerbated by international coffee price volatility. To address these challenges and ensure the long-term growth of the agricultural sector in Minas Gerais, the Certified Minas Coffee (CMC) standard and certification programme for coffee was launched in 2006 by the Minas Gerais Secretariat of Agriculture, Livestock and Supply. The programme developed a standard and certification protocol for sustainable coffee production, and set up capacity-building

and extension services for coffee producers to support them to comply with the 'local' standard. The verification and capacity-building activities of the programme are linked – private extension services are funded by the state government to provide training on the standard and certification procedures, whilst the Agriculture and Livestock Institute of Minas Gerais (IMA) provides technical support for the internal audit process (ISEAL, 2013). External audits are provided by two third-party, nationally accredited certification bodies.

To expand market access, CMC has collaborated with two international sustainability standards; UTZ and the Global Coffee Platform (GCP – formerly the 4C Association[1]). In the case of UTZ, this private VSS has been active in Minas Gerais since 2002 and the uptake of its Code of Conduct (standard) has been growing in the region. As a result, the CMC standard was able to use and integrate several elements from the UTZ Code of Conduct right from the start. Rather than generating tension and competition between these two standards, the substantial overlap and shared geography of these two systems led to closer cooperation. In 2012, this resulted in a Memorandum of Understanding (MoU), which envisaged even closer cooperation and the 'promotion of international recognition of the UTZ program and CMC using the Certifica Minas program as a stepping stone model' (UTZ, 2012). The agreement established the framework for mutual recognition based on the different performance levels of the two standards. As a result, a CMC certification was recognised as being equivalent to 'year 1' in the UTZ programme. Through this collaboration, producers gained international access to buyers as well as to the UTZ traceability system (ISEAL, 2013). This mutual recognition increased efficiencies between the assurance models of the two standards by promoting joint (combined) audits and common training of producers.

To establish connection to sustainable coffee value chains further, the CMC entered into an additional agreement to undergo a technical benchmarking against the Common Code for the Coffee Community (4C, 2013). This is an international entry-level standard for sustainable coffee production, which has recently evolved into the new entity, the Global Coffee Platform. The conclusion of this benchmarking led to a further mutual recognition or 'equivalence' agreement allowing CMC-certified farmers to obtain a 4C Licence and sell their coffee as 4C compliant without additional verification (4C, 2015).

The mutual recognition agreements with UTZ and 4C are useful examples of how mutual recognition or equivalence processes can replace competition between government-driven standards and existing international VSS. It is important to note that in the case of the CMC programme, its certification programme

1 For clarity, in this article we will still use the previous name 4C and refer to the 4C code.

provided an adequate degree of credible assurance, which allowed both the content of the CMC standard and its level of verification to be considered for mutual recognition by the existing international standards.

Mozambique: sustainability in the concessionary production of cotton and the Better Cotton Initiative

Cotton is one of the most important agricultural exports for Mozambique, where more than 90% of national production is undertaken by approximately 300,000 small-scale household farmers (Silici et al., 2015). In addition to various environmental impacts relating to soil and water usage, cotton production is also associated with poor labour conditions including child labour. To manage cotton production, the Mozambican government uses a concessionary-license model whereby a private company is granted exclusive rights to procure all cotton produced by farmers from a specific region at an agreed national price (IAM, 2011). In return, an obligation rests on the concession holder to support the farmers within that region, providing production inputs and technical assistance.

Recognizing some of the inherent weaknesses of the concession model and faced with decreased production output, a Cotton Value Chain Revitalization Plan was adopted in 2011 to increase the productivity and the sustainability of the sector (IAM, 2011). Prior to this, the Government's Cotton Institute of Mozambique (IAM) introduced measures to minimise the use of chemical inputs and increase erosion control in cotton fields, but these measures and the extension services provided by concession holders were found to be inadequate. The renewed focus on sustainable production led the IAM to engage the Better Cotton Initiative (BCI), an international VSS. BCI assisted in developing improved extension services in line with its principles and criteria and the first 'better cotton' harvest was achieved in 2013.

After this initial engagement, deeper interaction between Mozambique government policy and BCI developed in several stages. The first of these was embedding the BCI's principles and criteria in the revised national cotton regulation ('*regulamento a cultura de algodoa*'), which applies to all concession agreements. This put Mozambique on track to become the 'first country to make 100% of its cotton production Better Cotton' (BCI, 2016). The second step, currently ongoing, is IAM's development of a national standard for sustainable cotton production, which will mirror the criteria and indicators developed by BCI as well as include additional sustainability criteria related to parts of the production chain not covered by the BCI standard. In addition, the verification and certification process, currently still managed largely by BCI, will be transferred to IAM as a third step. To this end, BCI and IAM are training and developing competent Mozambique-based certification bodies to carry out the external third-party audits. Once the national-level standard and verification process has been finalised, an agreement of 'equivalence' will ensure Mozambique-produced cotton will enter international markets as BCI certified cotton.

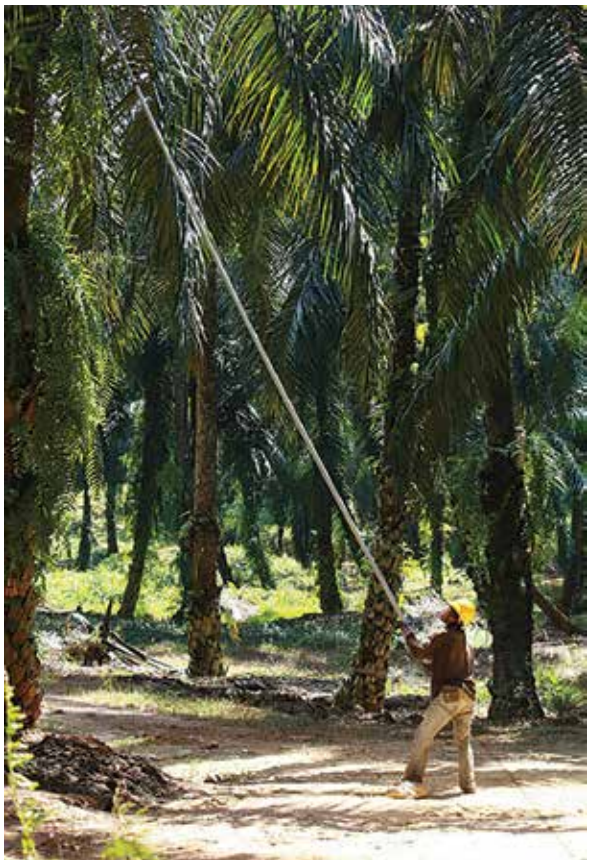
Adapting the scope of certification: emerging jurisdictional approaches

The development of jurisdictional approaches is a novel policy concept, part of the broader field of landscape approaches (Mallet et al., 2016; Denier et al., 2015; Kissinger et al., 2013; Sayer et al., 2013). Both landscape and jurisdictional approaches differ from the traditional certification model as they see sustainable practices being applied on a scale broader than individual producer units (farms, factories, forestry plots, fisheries, etc.), which many standard systems take as their primary scope of assessment. The main benefit of this approach is that it can help scale up the uptake of sustainable practices and potentially reduces the cost of verification for producers.

Government buy-in is seen as central to the implementation of such approaches. This is clearly illustrated by the example of the Roundtable on Sustainable Palm Oil's (RSPO's) role in designing and piloting a jurisdictional approach to sustainable palm oil certification in Indonesia and other Southeast-Asian countries.

Indonesia and Malaysia: sub-national jurisdictional approaches and the Roundtable for Sustainable Palm Oil

The rapid expansion of the palm oil sector in Southeast Asia has generated various negative sustainability impacts, including on deforestation rates and biodiversity (see, for example, Shiel et al., 2009). The RSPO was set up as an international, multi-stakeholder roundtable in 2004 to develop and implement standard for addressing such major sustainability concerns. While RSPO certification rates have grown at a rapid pace over the past decade to above 20% of global production (ITC, 2015), the standard's uptake needs to be significantly scaled up if deforestation rates are to be reduced – particularly in those countries where it has expanded rapidly. While Indonesia and Malaysia provide by far the largest share of sustainably certified palm oil, their total certified area accounts for only 17% and 24% of their total palm production area respectively (ITC, 2015).



To address this, sub-national governments have sought to engage oil palm companies, district heads and national government to accelerate progress towards scaling up sustainable palm oil production (Havemann and Kusumajaya, 2015). In this context, a consortium of partners came together to look at the possibility of broadening the scope of RSPO certification from individual plantations to whole jurisdictions at the district and provincial level (RSPO, 2015; Earth Innovation Institute, 2016). In this approach, local governments will play a central role in adapting the RSPO standard for local application linked to the development of palm oil development plans. These put into place supportive measures and incentives for the certification for plantations within the jurisdiction.

As of early 2016, public commitments from the governors of Sabah (Malaysia), Central Kalimantan and South Sumatra (Indonesia) have been issued (Mallet et al., 2016). While many areas of implementation are still being developed, the RSPO's jurisdictional approach exemplifies a new way of how local authorities, international actors and companies can shape models of governance which use localized, established political boundaries. In addition to consolidating the position of local plantations and producers in the palm oil supply chain, a jurisdictional approach based on an international VSS offers local governments a tool and framework for developing environmental policies, and addressing critical issues relating to land rights.

Opportunities, Challenges and Risks

The examples of constructive engagement described above illustrate not only the extent to which private standards have become embedded in global supply chains but also how standards are increasingly being considered and actively used by governments as part of their policy response to pressing sustainability and competitiveness issues. While such interactions are still nascent and their sustainability impacts remain to be assessed, the emergence of these 'supply-side' interactions opens up new possibilities for accelerating sustainable production. However, a number of outstanding concerns, constraints and challenges will need to be addressed from both the public and private sector side of the equation.

Addressing relevance, legitimacy, and accessibility

Certain countries have expressed concerns around the growing prevalence of private VSS in global value chains. Reservations include the arguments that such private standards lack relevance to local contexts and local stakeholder involvement. Importantly, a major concern is that VSS limit market access for small producers due to the costs associated with compliance and certification (UNFSS, 2014). Such issues are related to a particular challenge; the status of private sustainability standards in the international trade architecture, in particular the WTO Technical Barriers to Trade (TBT) regulation.[1]

Criticisms around the lack of transparency and stakeholder participation in the drafting of standards are not without foundation. However, here it is crucial to distinguish between the different types of private or voluntary standards that exist. Without delving into the various typologies and the literature on legitimacy strategies of non-state actors (see notably Cashore, 2002; Abbot and Snidal, 2008), it is necessary to emphasize that 'credible' multi-stakeholder standards represent standards systems which actively seek to address these concerns. To this end, various measures are taken including (but not limited to) actively engaging and addressing constraints faced by disadvantaged stakeholder groups in setting the standard and subsequent verification processes, ensuring the transparency and availability of the standard, investing in the translation of relevant documents, and developing national adaptations or interpretations of the standard. Moreover, in committing to periodic standard revisions, credible standards systems allow stakeholders to voice concerns at periodic intervals once the standard has been set.[2]

The issue of smallholder accessibility is another legitimate concern. There are various contextual factors which determine whether certification is economically viable for smallholders. VSS have been found to be effective tools for 'upgrading' the production systems of smallholders, thereby improving their productivity, reducing costs and increasing output quality (Blackmore et al., 2012). While high-performance VSS might indeed be challenging to achieve for small or medium producers which lack access to finance, standards systems can facilitate broad uptake and function as a 'conduit' for channelling resources to capacitate small producers. For example, BCI emphasizes the need to invest

1 The question of whether non-governmental VSS fall under the TBT regulation has not been fully resolved (see, among others, Arcuri, 2013). The TBT regulation aims to sanction unwarranted protection by governments, but allows measures which are driven by public interest and consumer welfare (Delimatsis, 2016). As private VSS are further integrated into public regulations and policies, the question of the WTO's regulating power over VSS is likely to become pertinent. It should be noted that supply-side co-regulations are unlikely to be disputed at the WTO level as they do not impose a barrier to trade.

2 As a body of international meta-regulation for private sustainability standards, the ISEAL Alliance has developed Codes of Good Practice which cover both concrete measures and broader principles related to credible standard-setting. For additional guidance on how international VSS can ensure global consistency and local applicability in their standard-setting processes, see ISEAL Secretariat, 2015.

in capacity-building 'upfront' instead of only focusing on outcomes in terms of certification (BCI, 2016). Crucially, the examples above illustrate how government measures can further facilitate smallholder access to VSS. In the Certifica Minas Café example, reducing the cost of compliance for producers through capacity-building support and facilitating their access to international markets were key goals shared by the local government bodies and the VSS involved.

In discussing smallholder access to global value chains, it is important to bear in mind that VSS are the practical result of market pressures, which seek to reward more sustainable production. If no transparent, multi-stakeholder standard is in place, such market pressures are likely to be channelled through more opaque and inaccessible sourcing conditions set by individual actors, creating further barriers for producers.

Challenges and risks for effective public-private governance interactions

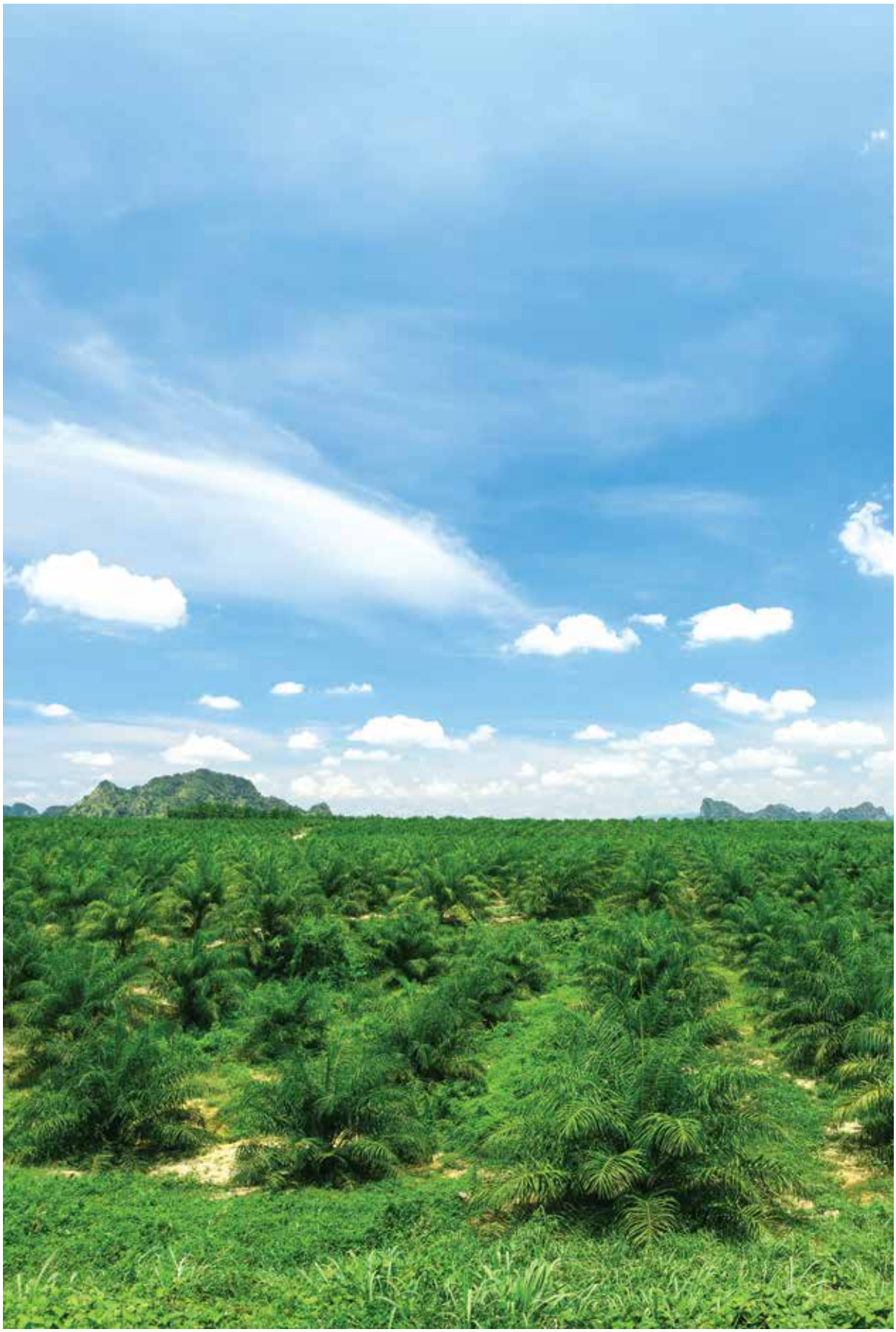
While a body of academic and grey literature addresses government-VSS dynamics in the forestry sector (see, for example, Gulbrandsen, 2014; Cashore and Stone, 2012), experiences and approaches in other sectors are less developed and documented. Arguably, one key challenge in fostering new interactions is improving the understanding of policy-makers, particularly in producer and export-oriented economies, about how private VSS function can be used. This includes insight into the different types of VSS, and the implications of different forms of co-regulation.

Each interaction between public actors and private VSS implies a recognition process, which can be formalized to different degrees. Depending on the scope of recognition and whether or not it relates only to the content of a standard or also integrates verification and conformity assessment, recognition processes will have to account for different types of factors. To ensure the effectiveness, legitimacy and credibility of a co-regulatory initiative, the recognition process would need to cover various process, and management principles, and potentially even outcome and impact criteria. If the threshold for recognizing VSS is too low and does not cover the integrity of compliance activities as well as factors relating to accessibility, transparency, organizational structure, and accountability, co-regulation risks being ineffective and open to criticism.[1] This also applies to interactions of mutual recognition between a private VSS and a government-run certification system as in the Brazilian and Mozambican cases above. When an international private VSS recognizes a public VSS, the credibility and integrity of the government-run VSS becomes a crucial dimension.

As they develop, new interactions and co-regulatory efforts can deal with concerns around relevance, legitimacy, integrity and accessibility of VSS, and such aspects also apply to the co-regulatory process as a whole. Efforts have been made to identify guiding principles for VSS to engage with public policy (Ward and Ha, 2012). Policy-makers, apart from looking at the broad principles included in the TBT regulation, can use several non-governmental resources to guide recognition or benchmarking processes.[2]

1 Studies commissioned by the World Wildlife Fund (WWF) and the International Union for Conservation of Nature (IUCN) which assessed the recognition of private VSS by the European Commission under the EU Renewable Energy Directive (EU RED), found the recognition process lacking in stringency and scope, and recommended moving towards a more comprehensive recognition process. See Schlamann, et al., 2013: IUCN NL, 2013.

2 These include the ISEAL Codes of Good Practice and the WWF's 'Principles for actively endorsing or recognizing standards and certification schemes'. In addition, some broad practical principles have been elaborated by Wood and Johannson based on insights from environmental management in Canada, see Wood and Johannson, 2008.



Looking forward: understanding and shaping future government-VSS interactions and co-regulation

A growing awareness of the importance of sustainability is creating a fertile environment for new public-private governance interactions. Global and national sustainability frameworks such as the Sustainable Development Goals and new climate agreements are mobilizing a widening range of stakeholders. Greater market pressures to scale up sustainable supply chain management are building up. In addition, public authorities in producing countries seem increasingly aware of the challenges and opportunities of these trends and are open to the possibilities of action. These are important drivers in creating new modes of co-regulation – at both the national and local level.

Governments which seek to drive more sustainable supply chains and international VSS can strengthen each other's effectiveness and impacts through mutual engagement. Public bodies can provide international VSS with the means to scale their uptake, lower their compliance costs, and confer legitimacy, political support and 'local ownership'. On the other hand, private VSS can provide governments with expertise on specific sustainability issues, offer access to international convening platforms, assist in developing capacity-building and extension services for producers, and provide these producers with access to global value chains. Moreover, both the content of a standard and the verification or assurance model of a credible standards system are tools that can be integrated in public policies which aim to increase the supply of and demand for sustainably-produced products and goods.

This contribution does not provide a systematic overview nor a rigorous methodology for assessing these interactions. More in-depth research is needed to trace such new pathways, to understand their political and economic contexts, and assess their sustainability outcomes and impacts. Instead, this contribution aims to foster further discussion between policy-makers, sustainability practitioners and the academic community concerning the implications of emerging interactions. A policy-oriented research agenda is needed to tackle various questions; how can new interactions create positive sustainability impacts? What are the risks posed by private VSS deeply engaging national or local governments, and vice versa? In what ways should policy-makers rethink regulatory approaches to connect more effectively to the existing private regulation provided by VSS? How can international VSS adapt and reconfigure their systems to fit the needs of governments better? Do the concerns of some countries about the status of private standards within the context of the TBT Agreement need to be resolved in order to see further interaction? Addressing all of these issues will be crucial in shaping how sustainability is managed through global supply chains in the future.

References

4C Association. (2013). *The 4C Association and the Government Of Minas Gerais announce Cooperation Agreement,* press release 25/09/2013. available at: http://www.4c-coffeeassociation.org/latest/2013/the-4c-association-and-the-government-of-minas-gerais-announce-cooperation-agreement (accessed 27/03/2016).

4C Association. (2015). *Brazilian Certifica Minas Café Strengthens its international recognition through Benchmarking Agreement with the 4C Association,* press release 20/05/2015. available at: http://www.4c-coffeeassociation.org/latest/2015/brazilian-certifica-minas-caf%C3%A9-strengthens-its-international-recognition-through-benchmarking-agreement-with-the-4c-association (accessed 27/03/2016).

Arcuri, A. (2013). The TBT Agreement and Private Standards. in Epps, T. and M J Trebilcock, eds., *Research Handbook on the WTO and Technical Barriers to Trade*. (pp. 485-524) Cheltenham, UK: Edward Elgar.

Abbott, K.W. and Snidal, D. (2009). Strengthening international regulations through transnational new governance: overcoming the orchestration deficit. *Vanderbilt Journal of Transnational Law*, 42, 2, pp. 501-578.

Bendell, J., Miller, A. and Wortmann, K. (2011). Public policies for scaling corporate responsibility standards expanding collaborative governance for sustainable development. *Sustainability Accounting, Management and Policy Journal*, 2, 2, pp. 263-293.

BCI Better Cotton Initiative. (2014). *Mozambique Becomes the First Government to Adopt the Better Cotton Production Standard,* Better Cotton Imitative Press Release, July 4th, 2014. available at: http://bettercotton.org/iam-becomes-first-government-organisation-adopt-better-cotton-production-standard/ (accessed 27/03/2016).

BCI Better Cotton Initiative. (2016). Webpage on Capacity-building. available at: http://bettercotton.org/about-better-cotton/better-cotton-standard-system/capacity-building/ (accessed 27/03/2016).

Blackmore, E., et al. (2012). *Pro-poor certification: assessing the benefits of sustainability certification for small-scale farmers in Asia*. Natural Resource Issues No. 25. International Institute for Environment and Development, London.

Cashore, B., and Stone, M. (2012). Can legality verification rescue global forest governance: assessing the intersection of public and private authority in forest governance in Southeast Asia. *Journal of Forest Policy and Economics,* 18:13–22.

Denier, L. et al. (2015). *The Little Sustainable Landscapes Book*. Global Canopy Programme, Oxford.

Delimatsis, P. (2016). *Sustainable Standard-Setting, Climate Change and the TBT Agreement.* Tilburg Law School Legal Studies Research Paper Series, Tilburg.

Doherty, P. (2013). *National Standards: Threat or Opportunity?* Research paper prepared for ISEAL Alliance Secretariat, unpublished.

Earth Innovation Institute (2015). *Central Kalimantan Land Governance Assessment.* available at: http://siteresources.worldbank.org/INTLGA/Resources/Central_Kalimantan_Final_Report.pdf.

Earth Innovation Institute. Webpage on Indonesia. available at: http://earthinnovation.org/our-work/regional-initiatives/indonesia/ (accessed 11 October 2013).

Eberlein, B. et al. (2013). Transnational business governance interactions: conceptualization and framework of analysis. *Regulation and Governance*, 22 July, available at: http://onlinelibrary.wiley.com/doi/10.1111/rego.12030/abstract (accessed 11 October 2013).

Geraets, D., and Natens, B. (2014). The WTO Consistency of the European Union Timber Regulation. *Journal of World Trade*, 48, 2, pp. 433–455.

Gulbrandsen, L.H., (2014). Dynamic Governance Interactions: Evolutionary Effects of State Responses to Non-State Certification Programs, *Regulation & Governance*, 8:74.

Havemann, T. and Kusumajaya, U.E. (2015). Palm oil in West and Central Kalimantan, Indonesia" in *Steps Toward Green: Policy responses to the environmental footprint of commodity agriculture in East and Southeast Asia.* EcoAgriculture Partners, The World Bank and Clarmondial.

ITC International Trade Centre. (2011). *The Interplay of Public and Private Standards.* ITC, Geneva. available at: http://www.standardsmap.org/The-Interplay-of-Public-and-Private-Standards/

ITC - International Trade Centre. (2015). *The State of Sustainable Markets: Statistics and Emerging Trends 2015.* ITC, Geneva.

ISEAL Secretariat. (2015). *ISEAL Guidance: Ensuring Global Consistency and Local Applicability.* London.

ISEAL Secretariat. (2013). *National Standards: Learning for the ISEAL Community*, unpublished, London.

IUCN - International Union for the Conservation of Nature - The Netherlands, (2013). *Betting on best quality: A comparison of the quality and level of assurance of sustainability standards for biomass, soy and palmoil.* Report prepared for IUCN-NL by ProForest, Amsterdam

Kissinger, G., Basser, A. and Gross, L. (2013). *Scoping Study. Reducing Risk - Landscape Approaches to Sustainable Sourcing.* Landscapes for People, Food and Nature, Washington, D.C..

Mallet, P. et al. (2016). *How Sustainability Standards can contribute to Landscape Approaches and Zero Deforestation Commitments*, report prepared by the ISEAL Alliance Secretariat, London.

Marx, A. (2015). *How relevant is the Public Private Distinction in the case of Voluntary Sustainability*

Standards? Robert Schuman Centre for Advanced Studies, Global Governance Programme, EUI Working Paper.
Mavroidis, P. C. and Wolfe, R. (2016). *Private Standards and the WTO: Reclusive No More.* Robert Schuman Centre for Advanced Studies, Global Governance Programme, EUI Working Paper.
Cotton Institute of Mozambique (2011), *New Initiatives for Improving the Sustainability of Cotton Production in Mozambique*, Paper Presented at the Technical Seminar of the 70th Plenary Meeting of the International Cotton Advisory Committee, Buenos Aires.
Nepstad, D.C., et al. (2014). Slowing Amazon deforestation through public policy and interventions in beef and soy supply chains. *Science*, 344, pp. 1118–1123.
O'Rourke, D. (2003), 'Outsourcing Regulation: Analyzing Nongovernmental Systems of Labor Standards and Monitoring' Policy Studies Journal, 31, 1 pp. 1-29.
Potts, J. et al. (2014).*The State of Sustainability Initiatives Review 2014,* International Institute for Sustainable Development and International Institute for Environment and Development.
Roundtable on Sustainable Palm Oil (2015) *The Landscape Perspective,* presentation presented at the ISEAL Alliance Annual Conference, May 2015.
Sayer, J. et al., (2013). Ten principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses. *Proceedings of the National Academy of Sciences of the United States of America*, 110, 21.
Schlamann, I. et al., (2013). *Searching for Sustainability: Comparative Analysis of Certification Schemes for Biomass used for the Production of Biofuels*, World Wildlife Fund Deutschland.
Silici, L., Bias, C., and Cavane, E., (2015). *Sustainable agriculture for small-scale farmers in Mozambique A scoping report,* International Institute for Environment and Development, London.
Sheil, D.. (2009). *The Impacts and Opportunities of Oil Palm in Southeast Asia - What do we know and what do we need to know?* Center for International Forestry Research, Indonesia.
Thorstensen, V., Weissinger, R. and Sun, X. (2015). *Private Standards — Implications for Trade, Development, and Governance.* E15Initiative, International Centre for Trade and Sustainable Development (ICTSD) and World Economic Forum, Geneva.
United Nations Conference on Trade and Development (2016). *Greening Ecuador's Exports of Cacao-Chocolate and Fishery Products: no easy task*, Press release, 10 February 2016 available at: http://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=1199&Sitemap_x0020_Taxonomy=UNCTAD%20Home (accessed 27/03/2016).
UNFSS - United Nations Forum for Sustainability Standards (2016). *Launch of the Indian National Platform on Private Sustainable Standards*, 18 March 2016., available at: https://unfss.org/2016/03/15/national-unfss-supported-platform-on-private-sustainability-standards-in-india-to-be-launched/ (accessed 27/03/2016).
UTZ (2012). *UTZ Certified signs Memorandum of Understanding with Certifica Minas,* press release. available at: https://www.utzcertified.org/nachrichtenredaktion/neuigkeiten/2623-utz-certified-signs-memorandum-of-understanding-with-certifica-minas?offset=310&lang=de (accessed 27/03/2016).
Vermeulen, W.J.V.et al. (2011). *Roles of Governments in Multi-actor Sustainable Supply Chain Governance Systems and Effectiveness of their Interventions – An Exploratory Study*. The Netherlands Environmental Assessment Agency (PBL), Bilthoven.
Vogel, D. (2008). Private Global Business Regulation. *Annual Review of Political Science*, 11, pp. 61-282.
Ward, H. and Ha, M.L. (2012). *Voluntary Social and Environmental Standards and Public Governance: reviewing the evidence and setting principles for standards-setters.* Pacific Institute and the Foundation for Democracy and Sustainable Development.
Wood, S., and Johannson, L. (2008) Six Principles for Integrating Non- Governmental Environmental Standards into Smart Regulation. *Osgoode Hall Law Journal*, 46:345.
WWF - World Wildlife Fund (2012), *The 2050 Criteria Guide to Responsible Investment in Agricultural, Forest, and Seafood Commodities.* Washington D.C.
Young, O. (2002). *The Institutional Dimensions of Environmental Change: Fit, Interplay, and Scale.* MIT Press.

5

Conserving biodiversity and improving human livelihoods through interaction between public regulation and forest management certification

Sini Savilaakso, Paolo Cerutti, Javier Gustavo Montoya Zumaeta, and Ruslandi

5 Conserving biodiversity and improving human livelihoods through interaction between public regulation and forest management certification

Sini Savilaakso[1], *Paolo Cerutti*[2], *Javier Gustavo Montoya Zumaeta*[3], *and Ruslandi*[4]

Abstract

Various policy instruments have been developed to address environmental, social and economic issues in forest governance. Public governance instruments include command-and-control instruments and policies that influence forests either directly or indirectly. Voluntary instruments by non-state actors include various certification schemes and commodity roundtables. These policy instruments do not work in vacuum but interact throughout the regulatory process, where they can complement, substitute, and antagonize each other. At the same time there are global processes as well as innovations that contribute to changing the forest governance regimes at national level.

In this paper we discuss how the governance regimes in Indonesia, Cameroon, and Peru have evolved to address biodiversity conservation and human livelihoods dependent on forests. We focus on the interaction between certification and public policies but also look at the broader context and what influence it has lent to changes in the forest governance regime. The key questions that we answer are: 1) Has Forest Stewardship Council (FSC) certification improved environmental and social performance in these countries; 2) What are the interactions through which the change has occurred; and 3) What role do micro- and macro-level processes play in the change?

We found that there are three transition paths for certification into current forest governance regimes based on the government support: cooperation, indifference, and competition. The path seems to be determined by macro-political development, trade opportunities, and cultural values as well as actors' willingness to transfer regulatory power. Furthermore, the path is reflected in the interactions between the current forest regulations and certification. Based on our analysis, FSC has improved social and environmental performance in the study countries through different impact pathways, the stakeholder engagement pathway bringing the strongest change in the on-the-ground performance.

Key words: economic liberalization; forest governance; legality; sustainable forest management; tropics

1 Center for International Forestry Research, Bogor, Indonesia, S.Savilaakso@cgiar.org
2 Center for International Forestry Research, Nairobi, Kenya
3 Faculty of Economic Sciences and Business, National University of the Peruvian Amazon, Iquitos, Peru
4 Department of Biology, University of Florida, Gainesville, USA

1. Introduction

The failure of governments to achieve a binding global forest convention in the 1992 Rio conference led a coalition of environmental, social and business activists to establish the Forest Stewardship Council (FSC) (Humphreys, 2006). Certification was the neoliberal answer to the failure of public policies to protect forest resources as it operates through the market and involves private sector in the standard setting (Auld, Gulbrandsen, & McDermott, 2008; Cashore, Auld, & Newsom, 2004). Indeed, it was envisioned that certification could act as a substitute for missing or inadequate public regulation (Henson & Humphrey, 2010), ensure market access for certified products in markets with high environmental awareness, and increase environmental and social sustainability in commodity trade (Elliott, 2000; Potts J et al., 2014).

Substitution is only one of the ways in which public policies and other policy instruments interact. The others are complementarity and antagonism (Lambin et al., 2014). The three types of potential interactions occur at various stages of the regulatory process: agenda setting and negotiation; implementation; and monitoring and enforcement. Two governance systems are complementary when they reinforce each other in the pursuit of a same policy goal. They can target either different actors, e.g. sanctioning those who break the law or bringing incentives to improve management, or different functions, e.g. certification can be used to prove compliance with legal requirements (Steering Committee of the State-of-Knowledge Assessment of Standards and Certification, 2012). Substitution occurs when another governance entity replaces the private-led mechanism through policy learning or norm generation (Lambin, et al., 2014), for example a requirement in a certification standard is adopted into national legislation. The initial private mechanism may maintain an informal role after a formal regulation takes over its function. Hence, substitution and complementarity may overlap. Finally, when two governance systems are antagonistic they can undermine each other at all stages of the policy process.

Besides the positive indirect effects certification may have on forest legislation, FSC has outlined four possible pathways to achieve positive impacts from "environmentally appropriate, socially beneficial and economically viable management of the world's forests" (FSC, 2015a): 1) The engagement pathway which highlights engagement with stakeholders and seeks to enhance consensus among them; 2) The standards pathway in which impacts are based on moving from unknown practices to compliance with the standard; 3) The assurance pathway which focuses on the role of third-party verification instead of the assumed law enforcement; and 4) The market pathway that enables market advantages for products that come from responsibly managed forests.

In this paper we discuss how the governance regimes in Indonesia, Cameroon, and Peru have evolved to address biodiversity conservation and human livelihoods dependent on forests. We focus on FSC's forest stewardship certification as it is the main global certification scheme in the tropical region. The key questions that we answer are: 1) has FSC certification improved environmental and social performance in the study countries through the identified impact pathways; 2) what role do micro- and macro-level processes play in the change; and 3) what are the interactions through which the change has occurred? The paper is structured as follows: first we give an overview of forest governance instruments with global bearing, and then we introduce the multi-level perspective framework. We move on to the country case studies before discussing their results in a broader context.

2. International forest governance instruments

2.1 Regulatory approaches

One of the earliest governance instruments related to overexploitation of forest resources is the legally binding Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) that entered in force on 1 July 1975. It has been subsequently implemented through national and regional legislation, such as the European Union (EU) Wildlife Trade Regulations in those 182 countries that have decided to become Parties to the convention.

Almost two decades later political commitment to sustainable management of forest resources was firmly put into the international policy agenda at the UN Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil, in 1992. The two main outcomes of the conference for sustainable forest management (SFM) were the non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests known as 'Forest Principles' and Chapter 11 of Agenda 21 'Combating Deforestation'. After the Rio conference an ad-hoc Intergovernmental Panel on Forests (IPF) (1995-1997) was formed followed by another one, the Intergovernmental Forum on Forests (IFF) (1997-2000). They both functioned under the auspices of the United Nations Commission on Sustainable Development (CSD) and provided a platform for further international forest policy development. In 2000 the United Nations Forum on Forests (UNFF) was established by the Economic and Social Council of the United Nations (ECOSOC) to continue to promote "the management, conservation and sustainable development of all types of forests and to strengthen long-term political commitment to this end". The political commitment has not led to binding international legislation but the Non-Legally Binding Instrument on All Types of Forests (NLBI) was adopted in the Seventh Session of the UNFF in 28 April 2007 (United Nations, 2007). The NLBI creates a framework for national action and international cooperation to enhance implementation of SFM.

Due to the lack of international binding agreements on forest, apart from CITES, regional and national regulatory approaches that have international bearing have been developed, notably by consumer countries such as the USA (e.g. with the 2008 amendment of the Lacey Act) or the EU (e.g. with the approval of the Forest Law Enforcement, Governance and Trade—FLEGT—Action Plan in 2003 (COM, 2003)). The central focus of these approaches is however on illegal logging and the environmental, social and economic problems associated with it—thus a somewhat 'reduced' version of the more encompassing SFM concept discussed in Rio. The EU FLEGT Action Plan sets out actions to prevent the import of illegal wood into the EU, to improve the supply of legal timber and to increase demand for wood coming from responsibly managed forests. As a first step the European Council adopted a regulation on the establishment of a FLEGT licensing scheme for imports of timber into the European Community (EC, 2005). The regulation establishes the FLEGT Voluntary Partnership Agreement (VPA) as the vehicle to implement the licensing scheme between partner countries or regional organisations. The VPA is a legally binding trade agreement between the EU and individual timber exporting countries, which commit to ensure trade only in legal timber and to improve forest governance on their national territories (EC, 2007). The first VPA was ratified by Ghana on 19 March 2010, followed by the Republic of Congo, Cameroon, Central Africa Republic and Liberia in Africa, and Indonesia in South-East Asia. As another component of the FLEGT Action Plan, the EU passed a timber regulation that came into force on 3 March 2013. The EU Timber Regulation prohibits operators in Europe from placing illegally harvested timber and products derived from illegal timber

on the EU market. 'Legal timber' is defined as timber that is in compliance with the laws of the countries where it is harvested.

The Lacey Act was originally passed in 1900 to ban trafficking in illegal wildlife in United States of America. It was amended on 22 May 2008 to include a wider variety of prohibited plants and plant products, including timber and paper (Lacey Act amendments of 2008, 2008). This amendment makes the policy capable of combating illegal logging. In addition to the ban on trading plants or plant products harvested in violation of the law, it requires declaration of the scientific name, value, quantity, and country of harvest origin for some products. As it is a fact-based statute with strict liability, no third-party verification (e.g. certification) can be used to prove legality under the Lacey Act. Similarly, Australia aligned its policies with EU and USA by adopting the Illegal Logging Prohibition Act (Illegal Logging Prohibition Act, 2012) on 29 November 2012. The act prohibits importing illegally logged timber and timber products and processing domestically grown raw logs that have been illegally logged.

2.2 Certification

The FSC founding assembly was held in 1993 and the FSC was established as a legal entity in 1994 (Figure 1). While the establishment of FSC was largely driven by international environmental NGOs, other mainly producer-focused certification schemes emerged also in the 1990s. The Sustainable Forestry Initiative (SFI) originated in 1994 with American Forest and Paper Association (AF&PA), a major trade group in the USA. The Canadian Standards Association (CSA) Group's Sustainable Forest Management (SFM) standard was formed in 1996 after the Canadian Council of Forest Ministers produced a national framework of criteria and indicators to help track the nation's progress in achieving Sustainable Forest Management. In Malaysia certification was initiated by Malaysian government, Forestry Departments of the Sabah and Sarawak states as well as timber associations. The efforts led to the establishment of the Malaysian Timber Certification Council (MTCC) in 1998. In that same year Indonesia also established its own certification scheme under the Indonesian Ecolabelling Institute (LEI). All the national

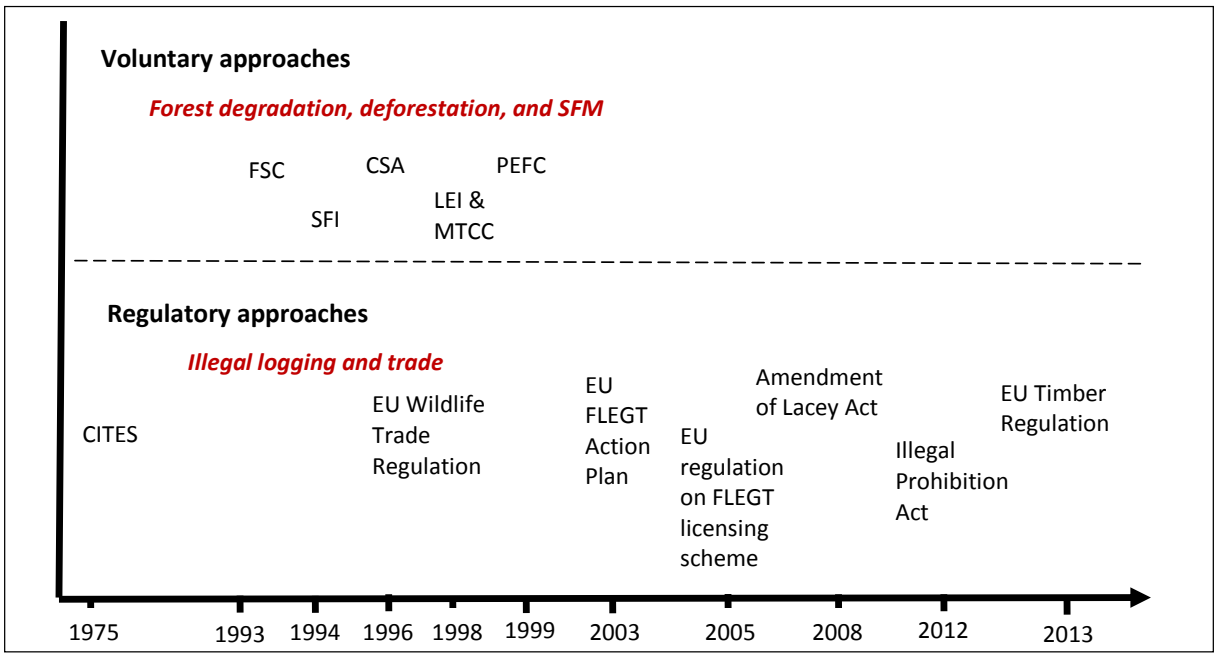


Figure 1: Chronology of voluntary approaches and public regulations including the main issues targeted by them.

schemes discussed above have been endorsed by the Programme for the Endorsement of Forest Certification (PEFC). PEFC was established in 1999 by national certification organizations as an international umbrella organization providing independent assessment, endorsement and recognition of national forest certification systems.

3. Interactions through which forest governance regime evolves

The multi-level perspective (MLP) framework originates from technological transitions scholarship (Rip & Kemp, 1998) but provides a useful framework for understanding sustainability transitions in other contexts as well. It distinguishes three analytical levels: niches (micro-level), regimes (meso-level), and exogenous landscape (macro-level) (Geels & Schot, 2007). Niches are where innovations occur and new private sector policy instruments are created. Public policies together with voluntary instruments used at the national level form the current forest governance regime in each country. The latter regime is embedded in the socio-technical landscape that includes societal values, political ideologies, macro-political developments, and macro-economics.

Changes in the present governance regime occur through interacting processes within and between different governance levels (Figures 2 and 3). Landscape level developments put pressure on the regime and create windows of opportunity for changes to occur in the regime, for example the pressure to implement SFM, combat deforestation and forest degradation that led to the creation of certification, which has since become part of the established forest governance regime in many countries.

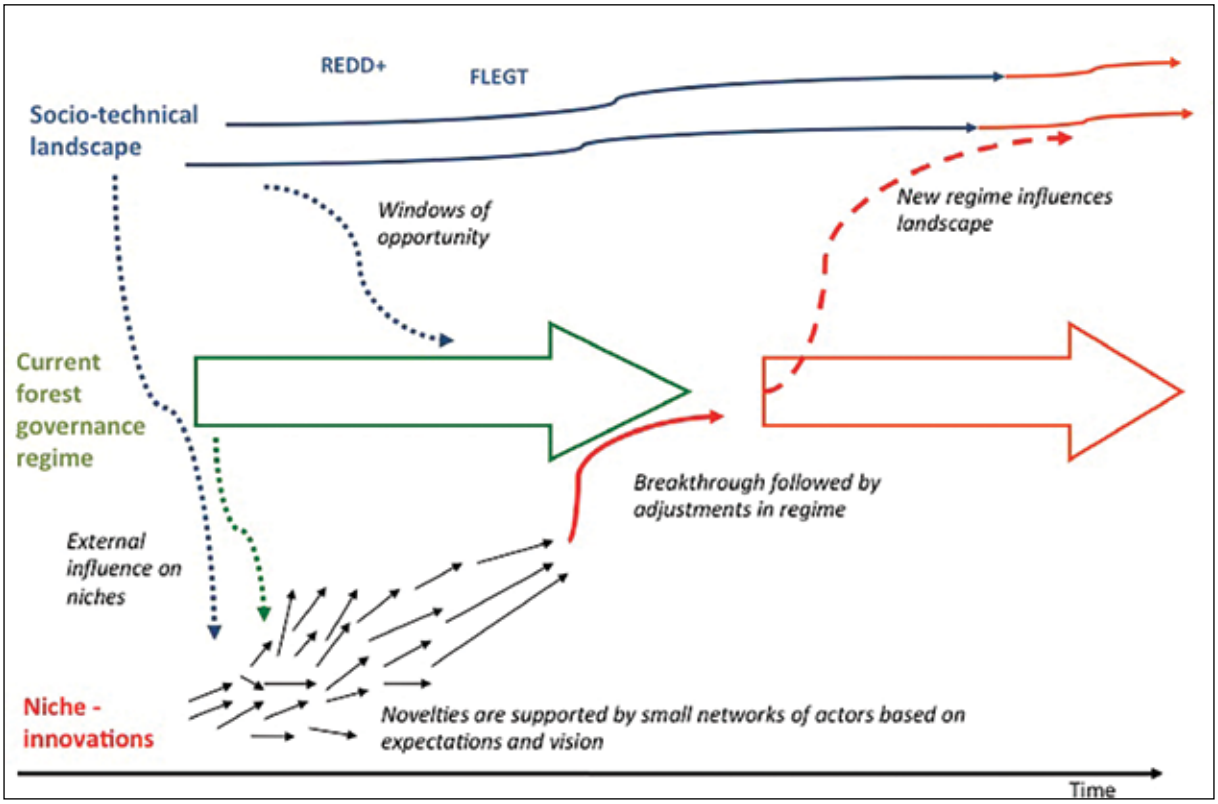


Figure 2: The multi-level perspective framework adapted from Geels and Schot (2007). The socio-technical landscape includes macro-political developments whereas niche level is where innovations occur. Changes in the present governance regime occur through interacting processes within and between these levels.

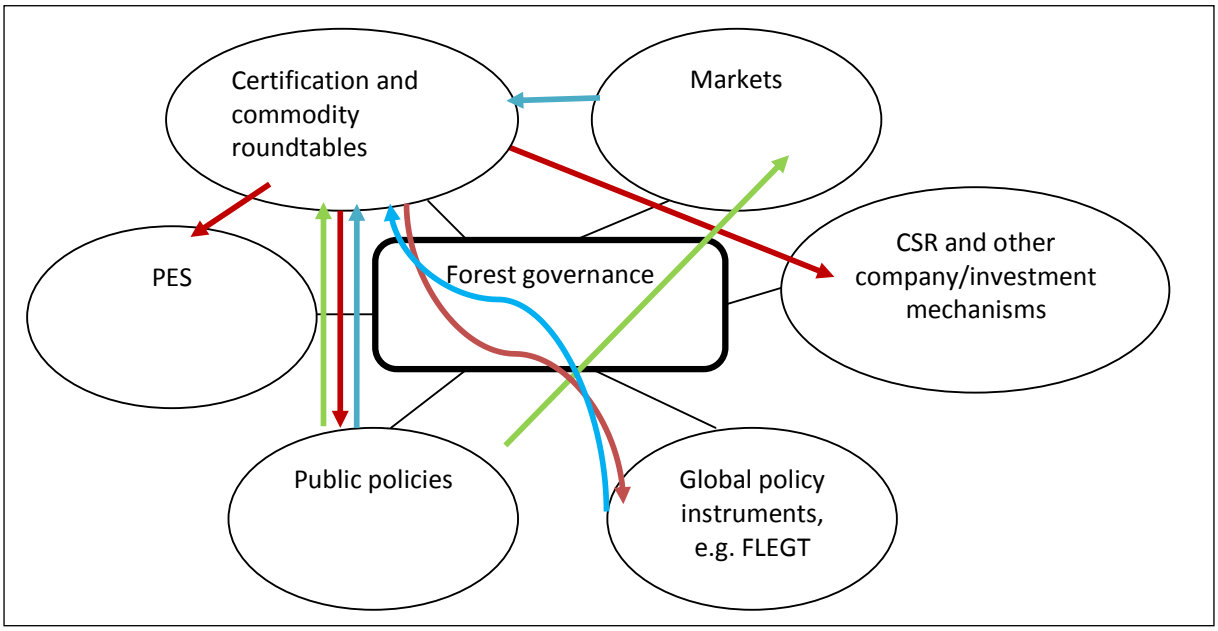


Figure 3: Simplified relation between certification and components in forest governance. Red arrows indicate complementarity and green arrows show substitution. Blue arrows note influence from components that may cause change in certification standard.

The following section discusses in more detail the application of the MLP to individual countries in the framework of evolving certification schemes, with a focus on Peru, Indonesia and Cameroon. By using case studies it is possible to detect commonalities as well as differences and draw lessons in moving towards sustainability in global forest resource governance.

4. Country case studies

The case studies are based on literature reviews of the forestry issues, forest policies, and certification in the study countries; forest statistics reports provided by government officials; 38 interviews with parties involved directly in forest certification; and the long-term experience of the authors with the forestry sector and forest certification in the study countries.

4.1 Development of certification

4.1.1 Peru

The movement for forest certification began in 1992 when the NGO Pronaturaleza was commissioned by government to undertake a consultation process on the feasibility of this sort of initiative. This process was conducted in parallel with the development of the sixth version of the principles and criteria for the sustainable management of natural tropical forest – a global initiative promoted by the International Tropical Timber Organization (ITTO) – and nationally with initial discussions for the establishment of the forestry and wildlife law (LFFS according to its acronym in Spanish) enacted in 2000 (Arce, 1998). The current national FSC standard-setting process culminated in 2002 when the FSC finally recognized the "Forest Management Certification Standards for Timber Forest Products in the Peruvian Amazon" (Table 1). Additionally, in 2004 the "Standard for Forest Management Aims to Brazil Nuts' (*Bertholletia excelsa*) Production in Peru" addressed to Brazil nuts concession owners was also approved and recognized by the FSC. Since the approval of these standards, nationwide forests certification has been promoted through various international initiatives such as the Certification and Development of the Forest Sector – CEDEFOR (2002-2006), Forest Certification

Project – CERF (2008-2011) and the Global Forest Timber Network – GFTN (WWF-USAID, 2011). Since 2005 certified areas have increased substantially with more than 845,290 ha of certified forests by February 2015 (Figure 4).

4.1.2 Indonesia

The Government of Indonesia (GoI) has been committed to sustainable forest management (SFM) since the early 1990s, as the follow-up to its commitments to sustainable development adopted from the Rio summit in 1992 and the ITTO 2000 target for SFM. The first implementation effort was the Ministry of Forestry (MoF) decree on the SFM standard for Indonesian forests issued in 1993 (Elliot 1999; Muhtaman and Prasetyo 2006). GoI also collaborated with donor countries (e.g., EU, France, Germany, UK, and USA) to develop models for SFM. At the same time (1995 -1997), the private sector (lead by the Association of Indonesian forest concessionaires – APHI) also developed its own certification standard in response to tropical timber boycott campaigns. Additionally, NGOs supported by the Ministry of Forestry (MoF) developed a national certification standard and established the Indonesian Ecolabelling Institute (Lembaga Ekolabel Indonesia-LEI) in response to the establishment of FSC certification system. The LEI certification system started operating in 1998 (Table 2).

The concerted efforts of government, the private sector, NGOs, and the international community are all considered as the drivers for FSC certification in Indonesia and as a result, some concessions had relatively better forest management practices than others (Ruslandi, 2015a). Having this advantage, these concessions explored potential market opportunities offered by FSC certification. These concessions were in fact the only concessions working toward FSC certification during the early period of FSC certification in Indonesia. Formally, FSC certification started to operate in Indonesia in 1998, when PT. Xylo Indah Pratama, a community forest located in South Sumatera province, was audited by the FSC-accredited certification body. For the natural forest concessions, PT. Diamond Raya Timber was the first concession audited under the FSC certification scheme in 1999. These two forest management units were finally FSC-certified in 2000 and 2001 (Ruslandi, 2015b).

The early growth of FSC certification in Indonesia was halted by rampant illegal logging and to some extent by decentralization in the forestry sector that did not work properly. In response to illegal logging, the government issued a presidential instruction (no. 4/2005) that made illegal logging a criminal offense. In parallel, the Ministry of Forestry (MoF), in collaboration with NGOs and other civil society actors, was developing a legal verification system (Sistem Verifikasi Legalitas Kayu –SVLK) to address illegal logging and illegal timber trade. A third party audit system similar to the FSC was adopted. At the same time, using the same approach as SVLK, the MoF also developed sustainable forest management certification (Pengelolaan Hutan Produksi Lestari –PHPL) mandatory for forest concessions in Indonesia. SVLK is considered as a part of the PHPL certification. The forest concessions shall seek PHPL certification after their SVLK certificates are expired, which are valid only for three years. In 2013, a Voluntary Partnership Agreement (VPA) with the EU was signed and SVLK is considered as compliance with EU Timber Regulation (EUTR). Under this agreement, all timber products from Indonesia with SVLK label have direct access to the EU market, while other timber/timber products must undergo a due diligence process.

Since the entry of FSC into Indonesia, there have been some initiatives to create interest in FSC certification, such as the forest-market linking programme in 2004 initiated by NGOs, including the Tropical Forest Foundation (TFF), The Forest Trust (TFT), WWF Global

Table 1. Entry of forest certification into Peru and actors involved.

Certification scheme	Year of certification scheme's establishment in the country	Public actors involved	Private actors Involved	Investors	Amount invested (US$)
FSC	2002	INRENA - Institute of Natural Resources (decentralized agency of the MINAGRI - Ministry of Agriculture)	NGOs (Pronaturaleza, SPDA, WWF Peru) National Trade Chamber, Regional Trade Chambers, ADEX	USAID, WWF Netherlands, IDH, European STTC	25 -40 millions*

* WWF-USAID 2011, Trujillo 2014

Table 2. Certification schemes' entry into Indonesia and actors involved.

Certification scheme	Year of certification scheme's establishment in the country	Public actors involved	Private actors involved	Investors	Amount invested (US $)*
FSC	1998	Donor countries	NGOs, Civil societies, Forest concessions	Donor countries and organizations, NGOs and private sectors	24,387,565
LEI	1998	Ministry of Forestry	NGOs, Forest concessions, APHI	Ministry of Forestry, Donor countries and organizations, NGOs, private sectors	7,547,623
FLEGT/ VPA Legality verification system (SVLK) and Mandatory certification (PHPL)	2009	Ministry of Forestry	Forest concessions		5,789,470
PEFC	2014		Civil societies, Forest concessions	Civil societies	Not in operation yet

*) Investment was calculated for forest management improvements and audit costs. No substantial improvements in forest management practices were needed to comply with SVLK/PHPL (Ruslandi, Klassen, Romero, & Putz, 2014). FSC investment includes the costs for concessions engaged in certification even if they have not yet been certified. Number of FMUs engaged in certification was obtained from FSC (2015b), LEI (2015), MoF (2013), Ruslandi (2015b); the certification cost for SVLK/PHPL, LEI and FSC was obtained from Astana et al. (2014) and Ruslandi et al. (2014).

Forest Trade Network and The Nature Conservancy (TNC). The Borneo Initiative (TBI), a programme started in 2010 on financial assistance for certification, attracted many concessions interested in FSC and sped up certification. Between 2010 and 2013, FSC-certified area more than doubled to 1,823,282 ha (5.1% of total production forest area) (Figure 4).

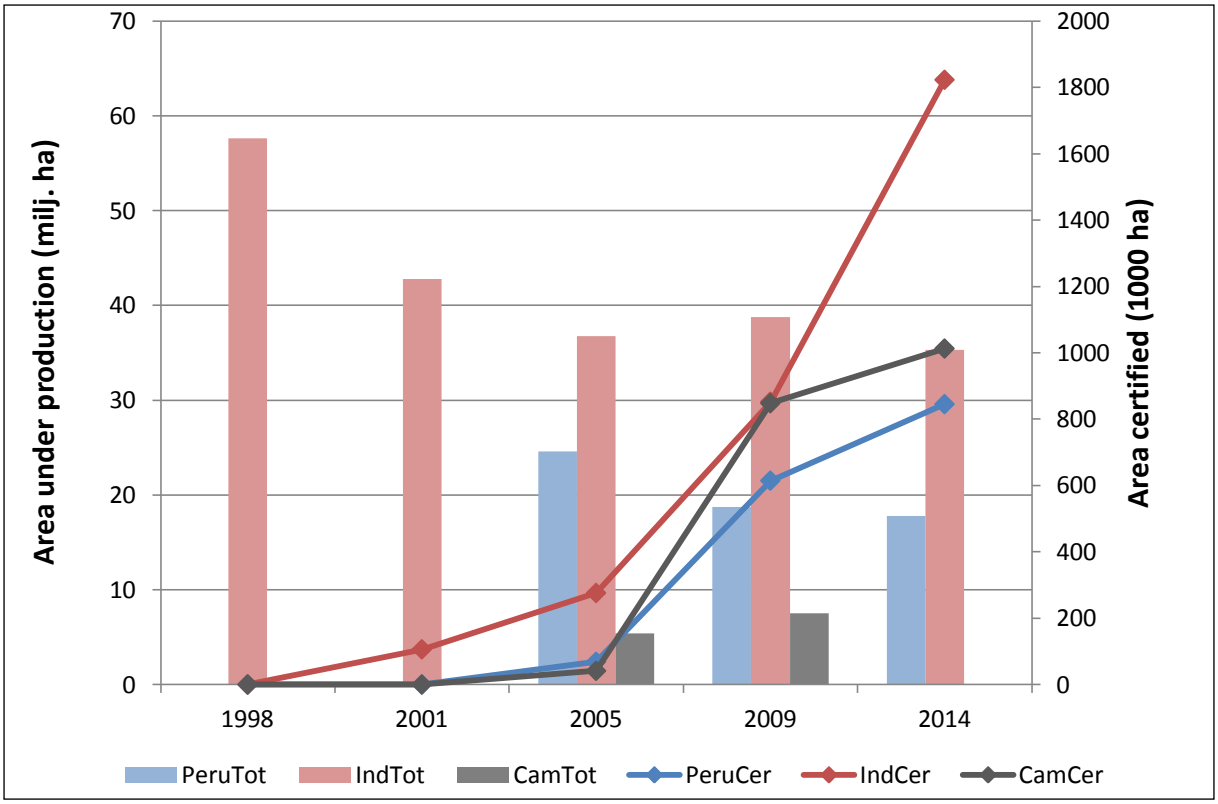


Figure 4. The area under timber production and the area certified by FSC in the three countries. The bars represent the area under production and the lines represent total area certified by FSC (red = Indonesia, blue = Peru, grey=Cameroon).

4.1.3 Cameroon

The history of forest certification in Cameroon can be traced through the appearance of the SFM paradigm that was adopted by the Ministry of Forest, Environment and Fisheries—which in 2004 was divided into the Ministry of Forests and Wildlife and the Ministry of Environment—and influenced the 1994 Forest law and several other regulations adopted in the 1990s and 2000s (Table 3). One of the requirements of the forest law No 94-01, implemented since 1995, was that logging companies in forest management units (FMU) must prepare a management plan to ensure the ecological, economic, and socially sustainable management of their concessions. Although the overall quality of several management plans has been assessed as wanting (e.g. Cerutti et al., 2011), this requirement forced many logging companies to implement silvicultural rules (e.g. minimum cutting diameters) and to acquire skills in social forestry (e.g. negotiation platforms with the logging concessions' neighboring population or financial redistributive schemes (Cerutti, Lescuyer, Assembe Mvondo, & Tacconi, 2010) that did not exist previously, and that also prepared the companies for the arrival of FSC certification a decade later.

From early 2000, after efforts to effectively implement sustainable management plans for their concessions, companies started to engage in independent forest management certification and the first FSC certificate was granted in 2005. These companies have several characteristics: European capital, large concession area, and they export primarily processed products to European markets. Another factor facilitating the adoption of FSC certification by some companies based in the Congo Basin was support offered by environmental NGOs to engage in this process (Lescuyer 2006). WWF has played a special role in deployment of FSC in the Congo Basin by establishing the Central

Table 3. Certification scheme's entry into Cameroon and actors involved.

Certification scheme name	Year of certification scheme's establishment in the country	Public actors involved	Private actors Involved	Investors	Amount invested
FSC	2005	None at the national level	WWF, IUCN	WWF*	-
OLB	2004	None at the national level	SGS, Bureau Veritas	-	-
FLEGT-VPA	2010	State of Cameroon and European Union	Forest concessions	-	13.6M Euro**

* Over the years, WWF has been helping logging companies (often with financial support) to prepare fauna inventories and fulfill other requirements to meet compliance with the FSC criteria.
**ECA 2015. EU support to timber-producing countries under the FLEGT action plan. Luxembourg, European Court of Auditors.

Africa Forest & Trade Network (CAFTN), joined by several logging companies in return for WWF's technical and financial assistance.

Between 2005 and 2010, competition between companies and States participating in the expansion of the number of FSC certificates in Central Africa ensued (Figure 4). However, since 2010 engagement in FSC certification has slowed down due to the economic crisis that reduced the financial means of many forestry companies and the rise of Asian countries as export markets (Huang et al 2013). However, the State of Cameroon signed a FLEGT-Voluntary Partnership Agreement (VPA) in October 2010.

4.2 The influence of FSC certification on forest governance

To analyze whether FSC certification has influenced forest governance in Cameroon, Indonesia and Peru we national regulations and requirements of the FSC standard. In Peru, the normative regime used was the LFFS (2000) and its respective regulations as well as other related legal instruments, together with the national FSC standard for forest management (FSC 2002). In addition to the FSC principles, approaches to verification of legal wood sources under national regulation and the FSC scheme were analyzed. In Indonesia relevant national regulations were compared with the international FSC standard for forest stewardship version 5 (FSC, 2014), whereas in Cameroon the 1994 Forest Law and related implementing decrees were compared with the national FSC standard for forest management (FSC, 2012).

The requirements related to biodiversity conservation in the FSC standard go beyond government regulation in all three countries studied (Table 4). FSC´s emphasis on long-term sustainability is inherent in the standard whereas this commitment is less clear in the public regulations. For example, in Indonesia Reduced Impact Logging (RIL) is used as a proxy for sustainable forest management (SFM) whereas in Cameroon no post-harvest inventory is required. In Peru there is a requirement to have sustainable management indicators but the estimate of a concession's productive potential is mainly based on secondary sources.

Although management plans are mandatory in all countries, the FSC standard gives more technical specifications and sets stricter conditions for operations. In Indonesia, there are no explicit regulations that require biodiversity conservation at the concession level although small portions of concessions should be set aside to protect genetic resources, and

Table 4. Seven **key** requirements contained in the FSC standard compared with the national legislation in Indonesia, Peru and Cameroon. "1" indicates that FSC requirements exceed the regulatory ones whereas "0" indicates that the requirements are equivalent with national regulation.

Key requirement	Indonesia	Peru	Cameroon
Principle 1: Compliance with Laws and FSC principles			
Demonstration of long-term commitment with the SFM principles	1	1	0
Evidence of balanced attention to social, ecological, and production issues.	1	1	0
Documentation for forest delineation.	1	0	0
Principle 2: Workers' Rights and Employment Conditions			
Worker's safety improved through training and equipment	1	1	0
Worker's health improved through preventive health plan	1	1	0
Principle 3: Indigenous Peoples' Rights and Principle 4: Community Relations			
Indigenous Peoples' and local communities' rights improved by recognizing and respecting customary rights and local community rules	1	1	1
Indigenous peoples' and local communities' rights improved through requirement for stakeholder participation.	1	1	1
Negotiate and make an agreement on the compensation fee for the communities.	1	1	0
Internal policies and actions to solve any claim or conflict that could emerge from use of forest resources are defined in a written document.	1	1	0
Social baseline surveys and social impact assessments.	1	1	0
Products diversification and integration with complementary activities that could generate benefits to local communities.	1	1	0
Principle 5: Benefits from the Forest and Principle 6: Environmental Impacts			
Harvest plans include several technical specifications to achieve economic efficiency and environmental protection, for example by requiring Reduced Impact Logging and pre-harvest timber inventories.	1	1	0
Risk assessment before site disturbing activities	1	1	0
Requirements to reduce soil erosion.	1	1	0
De-activation activities (e.g., post-logging road and skid trail closure) to reduce soil erosion and restrict illegal access	1	0	0
Principle 7: Management Planning and its implementation			
Public summary of management plan	1	1	0
Technical prescriptions required for management plans go beyond legal requirements	1	1	1
Justification about harvesting rate based on data gathered from the inside of the operation area.	1	1	0
An internal monitoring and assessment system that allows identifying productive, biological, environmental and socioeconomic changes attributable to forest management against a set of minimal indicator proposed in the standard.	1	1	0
Results of monitoring are public and taken into account in periodic reviews of management plans.	1	1	1
Principle 9: Maintenance of High Conservation Values' Forests (HCVF)			
Maintenance of High Conservation Values' Forests (HCVF) through training, stakeholder consultations, and incorporation of habitat protection and monitoring into planning and operational procedures.	1	1	1
Principle 10: Implementation of Management Activities			
Implementation of management activities is controlled by external audits.	1	1	1

protection of flora and fauna is mentioned in the requirements for developing a monitoring plan. Also, High Conservation Values (HCVs) as a concept does not exist in public regulation in any of the three case study countries.

FSC standards also contain several clauses that go beyond normative requirements regarding human livelihoods. For example, in Indonesia legal rights of local communities, including indigenous people, are not recognized in many cases whereas the FSC standard requires that all activities that affect communities need to be preceded by community consultations with broad stakeholder participation. In Peru rights of local communities and indigenous people are recognized and include the requirement for free, prior, and informed consent (FPIC) but no guidance exists to implement the FPIC process. None of the countries has a legal requirement for social impact assessment which is mandatory in the FSC standard.

5 Discussion

5.1 Improving social and environmental performance through FSC certification

Based on our analysis FSC has improved social and environmental performance in the study countries through the different impact pathways. The requirements for stakeholder engagement and consultations in FSC standards go beyond normative public regulations and there are indications that these requirements are translated into improved social well-being in the field. For example, in Indonesia FSC certification has contributed to improvements in forest governance indirectly by improving transparency, involving more stakeholders in forest management, providing more space for non-government organizations (NGOs) and other civil societies, and building trust among stakeholders (Muhtaman & Prasetyo, 2006; Ruslandi, et al., 2014). In addition, FSC certification also reduced deforestation and incidence of air pollution and increased wellbeing of local communities (Miteva et al. 2015). In Cameroon Cerutti et al. (2014) found that certified FMUs are consistently associated with better living and working conditions, presence of active local institutions, and the existence of a benefit-sharing mechanism. In Peru, Trujillo (2014) found better financial performance and working condition in those FSC certified concessions compared with those concessions that couldn't maintain the certification for over three years. Furthermore, certified concessions managers also recognized that the support that they receive from supporting certification initiatives allows them to improve their managerial and bargaining skills.

The standards and assurance pathways overlap to achieve intended sustainability impacts through third-party verification instead of assumed law enforcement. In our study countries certification requirements and their technical specifications are often more encompassing than those of public regulations (e.g. International Labour Organization's requirements), thus requiring higher environmental and social performance which in some cases has also been shown to happen (e.g. Cerutti, et al., 2014; Miteva, Loucks, & Pattanayak, 2015). However, the assurance pathway seems to be even more important as implementation of public regulation is wanting, and the regulations themselves have gaps in monitoring. For example, the monitoring of post-logging activities is not included under regulation in Indonesia. The importance of the assurance pathway is increased by the timber procurement policies implemented in many timber importing countries, especially in Europe, as they can increase certification update and enhance the rulemaking authority of forest certification schemes (Gulbrandsen, 2014). However, more stringent standards may also encourage exporting timber to economies with less stringent regulations, such as India and China, in favor of traditional timber export markets (Masiero, Pettenella, & Cerutti, 2015).

The market pathway has been the weakest impact pathway to improve practices in the countries examined. Although market advantages and premium prices were intended to serve as an incentive for companies, it seems that it has rarely been the motivation to comply with certification requirements and to maintain certification. In Peru and Cameroon the companies that have been certified already had market access and used certification more as an assurance mechanism than a market access tool whereas in Indonesia the first certificate holders were already mainly compliant with the certification requirements due to the government initiative on SFM before using certification to gain access to European markets. Thus, certification was more an add-on benefit rather than an incentive to improve practices. Our findings confirm earlier results that although market advantages play a part in the motivation to get certified, it is not the most important motivation (Rickenbach & Overdevest, 2006).

5.2 How did change occur?

When examining the development of certification through the lens of the multi-level perspective framework, there are clear similarities between the study countries but also marked differences. The appearance of the SFM paradigm provided a window of opportunity for certification, notably the FSC, in all of the countries but the route for certification to become an established part of the forest governance regime differs between them. Indeed, it can be even questioned whether certification is an established part of the regime or still trying to break into the regime.

In Peru, government has had a strong role as a supporter of certification from national to regional level from the beginning. Thus, certification has most likely had a positive knock-on effect on the public regulation as the processes to develop a national FSC standard. Revision of the forest law was conducted in parallel with some of the same actors involved. Indeed, some of the certification criteria are substituted by public regulation, such as the requirement for free, prior, and informed consent (FPIC) and the rest are complementary.

In Cameroon certification was adopted rather late but has become an established part of the forest governance regime. The uptake has been led by companies that trade in European markets, and certification has been used to ensure a better implementation of the sustainable timber production paradigm. Although sustainability as a concept is deeply embedded in the legal framework of all study countries, timber harvesting in accordance with legal management plans can still be unsustainable (Cerutti, Nasi, & Tacconi, 2008; P. O. Cerutti, L. Tacconi, R. Nasi, & G. Lescuyer, 2011). Hence, certification can be seen as a complementary instrument, especially in the monitoring and enforcement phase of the regulatory process.

In Indonesia we see a different narrative. From early on the government has been focusing on its own certification programmes although it worked with donor countries to develop models of SFM which acted as a spring board for the concessions involved to gain FSC certification. Similarly, the private sector developed its own certification programme rather than embracing the FSC as in Peru. Thus, in Indonesia FSC certification is still, after 18 years from the first certificate issued, more a niche innovation trying to break into the market than an established part of the governance regime which is also evident from the lack of a national FSC standard. Furthermore, there is tension between public regulation and the FSC standard as there are some FSC rules that contradict national regulations (e.g., silviculture intensification rules require higher logging intensities contradicting research recommendations) (Ruslandi et al. 2014).

Although NGOs have played an important role in building support for certification, it is

the macro-level processes and, at least in the initial stages of certification, trade development that seem decisive in the adoption and maintenance of certification. In Peru reforms towards market liberalization coincided with emergence of certification. These reforms were embraced and ever since Peru has been one of the most successful countries at confining protectionist pressures within formal trade remedy mechanisms and maintaining a liberal trade system (Finger, 2015). In Cameroon political reforms were undertaken concurrently with those in Peru but there was a lack of government commitment to move beyond serving the diverse private interests in society (Essama-Nssah & Gockowski, 2000). In Indonesia economic liberalization had happened in 1970 but the lack of democratic institutions and transparent practices may have contributed to the government's willingness to build its own certification programme. Even more so, the Ministry of Forestry did not want to lose its most powerful tool vis-à-vis other state agencies -- the power to regulate transnational actors in pursuit of its policy goals (Giessen, Burns, Sahide, & Wibowo, 2016).

Currently the majority of Indonesian timber is either used domestically or exported into other Asian countries. Therefore, it is unlikely that market pressure will force timber producers in Indonesia to improve their forest management practices unless Japan and China commit to purchasing only legal and sustainable timber products. If at the same time the VPA between the Government of Indonesia (GoI) and the EU allows Indonesian timber products to enter the EU market with only GoI's legality compliance, and if there is no premium price for FSC-certified timber, it is likely that timber producers in Indonesia will abandon FSC certification, which requires a larger effort and higher costs (Ruslandi, et al., 2014). In contrast, in Peru the US has been a major supporter of certification and an important trade partner at the same time. Although the money flows are separate, the focus placed on certification by the US has been reinforced by both channels. An additional influence channel for donor countries is through intergovernmental organizations, such as the World Bank or the International Monetary Fund as they can pressure countries to undertake policy reforms as was the case in Cameroon and in Indonesia to integrate SFM into their forest regulations even though Indonesia resisted at first and complied only after the Asian economic crisis hit (Bernstein et al., 2010).

[I]t is unlikely that market pressure will force timber producers in Indonesia to improve their forest management practices unless Japan and China commit to purchasing only legal and sustainable timber products.

Besides macro-level processes, cultural values can influence corporate behaviors (Matten & Moon, 2008). For example, in Peru the trust in market-oriented responses to regulatory problems is evident from of the concessionaries' belief that the government must have a predominant role in promoting the certification standard by limiting participation in public purchases of timber or derived products to FSC-certified products (Trujillo, 2014). Thus, although they believe that government must exercise control over production conditions, the actual improvement in management practices is best done through complementary market mechanisms with third-party verification of implementation of the required management practices. However, at the same time, limiting participation in public timber procurement would level the playing

field for those already certified as one of their concerns has been that they don't perceive any economic advantage to maintain the FSC certification in the markets in which they participate, considering the costs related with it.

6 Conclusions

Looking at the development of certification and comparing government regulations and FSC certification standards, this paper explored how the governance regimes in Indonesia, Cameroon, and Peru have evolved to address biodiversity conservation and human livelihoods dependent on forests.

There are three pathways (through cooperation, indifference or competition) for translation of certification standards and processes into current forest governance regimes based on government support: 1) *Cooperative* in Peru where the government has been a strong supporter of certification from the beginning and where the main interactions between certification and national public regulations are substitution and complementarity; 2) *Indifference* in Cameroon where certification is mainly complementary to public regulations and certification uptake is led by private companies; and 3) *Competition* in Indonesia where government has built its own certification programmes and there exists antagonism between some of the public regulations and FSC certification, in addition to some complementarity. The pathway seems to be determined by macro-political development, trade opportunities, and cultural values but also by governments' willingness to transfer regulatory power to private governance schemes.

What has emerged from these transitions is a patchwork forest governance regime within which various policy instruments interact to achieve the overall goal of sustainable forestry. Certification—as a market-driven, voluntary governance system—is just one of the tools that can be used to improve environmental and social sustainability within forest governance. Standard public policies can be another such tool. These tools can be complementing each other or, in some cases, they may set in motion deleterious antagonist processes. For example,

although in theory both systems (the private and the public) aim at promoting and implementing SFM, findings indicate that the former has had better impacts than the latter (in study countries) in improving private companies' behaviours and business models. These findings are particularly relevant in the context of the recent national and international responses to environmental issues such as illegal logging, which rely very much on the implementation of laws and regulations. While in theory (i.e. in the letter of the law) the latter are built on SFM principles, in practice their bar may not be set high enough to ensure that SFM is actually implemented (McDermott, Cashore, & Kanowski, 2009; Viktor, 1999). More research is thus needed to understand when and where such antagonism is occurring, in order to be able to set in motion policy processes (both private and public) aimed at curbing it.

7 Acknowledgements

We thank Raphael Tsanga and Edouard Essiane Mendoula for their contribution to the Cameroon case study. This work was supported by the CGIAR Research Programme on 'Forests, Trees and Agroforestry: Livelihoods, Landscapes and Governance' led by the Center for International Forestry Research in partnership with Bioversity International, the International Center for Tropical Agriculture and the World Agroforestry Centre.

References

Arce, J. (1998). Iniciativa de certificación forestal en Perú In J. Campos & M. Perl (Eds.), *Certificación forestal. Avances y perspectivas en América Latina y el Caribe. Memorias de la Primera Conferencia Regional sobre Certificación Forestal* (pp. 63-65). Turrialba, CR: CATIE.

Astana S, Obidzinski K, Riva WF, Hardiyanto G, Komarudin H, & Sukanda. (2014). Implikasi biaya dan manfaat sistem verifikasi legalitas kayu terhadap sektor perkayuan skala kecil. *JURNAL Penelitian Sosial dan Ekonomi Kehutanan, 11*(3), 175-198.

Auld, G., Gulbrandsen, L. H., & McDermott, C. L. (2008). Certification Schemes and the Impacts on Forests and Forestry. *Annual Review of Environment and Resources, 33*(1), 187-211. doi: doi:10.1146/annurev.energy.33.013007.103754

Bernstein, S., Cashore, B., Eba'a Atyi, R., Maryudi, A., McGinley, K., Cadman, T., et al. (2010). Examination of the influences of global forest governance arrangements at the domestic level. In J. Rayner, A. Buck & P. Katila (Eds.), *Embracing complexity: Meeting the challenges of international forest governance. A Global Assessment Report Prepared by the Global Forest Expert Panel on the International Forest Regime* (pp. 111-136). Vienna: International Union of Forest Research Organizations (IUFRO).

Cashore, B., Auld, G., & Newsom, D. (2004). *Governing Through Markets. Forest Certification and the Emergence of Non-State Authority*. New Haven & London: Yale University Press.

Cerutti, P., Tacconi, L., Nasi, R., & Lescuyer, G. (2011). Legal vs. certified timber: Preliminary impacts of forest certification in Cameroon. *Forest Policy and Economics, 13*(3), 184-190. doi: http://dx.doi.org/10.1016/j.forpol.2010.11.005

Cerutti, P. O., Lescuyer, G., Assembe Mvondo, S., & Tacconi, L. (2010). *The challenges of redistributing forest-related monetary benefits to local governments: a decade of logging area fees in Cameroon* (Vol. 12).

Cerutti, P. O., Lescuyer, G., Tsanga, R., Kassa, S. N., Mapangou, P. R., Mendoula, E. E., et al. (2014). *Social impacts of the Forest Stewardship Council certification: An assessment in the Congo basin*. Bogor, Indonesia: Center for International Forestry Research (CIFOR).

Cerutti, P. O., Nasi, R., & Tacconi, L. (2008). Sustainable Forest Management in Cameroon Needs More than Approved Forest Management Plans. *Ecology and Society, 13*(2), 36.

Cerutti, P. O., Tacconi, L., Nasi, R., & Lescuyer, G. (2011). Legal vs. certified timber: Preliminary impacts of forest certification in Cameroon. *Forest Policy and Economics, 13*(3), 184-190. doi: http://dx.doi.org/10.1016/j.forpol.2010.11.005

Communication from the Commission to the Council and the European Parliament: Forest Law Enforcement, Governance And Trade (FLEGT) – Proposal for an EU Action Plan (2003).

COUNCIL REGULATION (EC) No 2173/2005 of 20 December 2005 on the establishment of a FLEGT licensing scheme for imports of timber into the European Community (2005).

EC. (2007). Voluntary Partnership Agreements *FLEGT Briefing Note 6*. Brussels, Belgium: European Commission.

Elliott, C. (2000). Forest certification: A policy perspective. Bogor, Indonesia.

Essama-Nssah, B., & Gockowski, J. J. (2000). Cameroon Forest Sector Development in a Difficult Political Economy *Evaluation Country Case Study Series*. Washington DC, USA.

Finger, J. M. (2015). Unilateral Liberalization within the GATT/WTO System *RSCAS Policy Paper 2015/05*. Badia Fiesolana, Italy: Robert Schuman Centre for

Advanced Studies, Global Governance Programme.
FSC. (2012). Forest Stewardship Standard for the Republic of Cameroon. FSC-STD-CAM-01-2012 Cameroon Natural and Plantations. Bonn, Germany: Forest Stewardship Council.
FSC. (2014). FSC Principles and Criteria for Forest Stewardship FSC-STD-01-001 V5-1 EN. Bonn, Germany: Forest Stewardship Council.
FSC. (2015a). FSC's Theory of Change. Bonn, Germany: Forest Stewardship Council.
FSC. (2015b). Public certificate search Retrieved 15.2.2015, from http://info.fsc.org/certificate.php#result.
Geels, F. W., & Schot, J. (2007). Typology of sociotechnical transition pathways. *Research Policy, 36*(3), 399-417. doi: http://dx.doi.org/10.1016/j.respol.2007.01.003
Giessen, L., Burns, S., Sahide, M. A. K., & Wibowo, A. (2016). From governance to government: The strengthened role of state bureaucracies in forest and agricultural certification. *Policy and Society, 35*(1), 71-89. doi: http://dx.doi.org/10.1016/j.polsoc.2016.02.001
Gulbrandsen, L. H. (2014). Dynamic governance interactions: Evolutionary effects of state responses to non-state certification programs. *Regulation & Governance, 8*(1), 74-92. doi: 10.1111/rego.12005
Henson, S., & Humphrey, J. (2010). Understanding the complexities of private standards in global agri-food chains as they impact developing countries. *J Dev Stud, 46*(9), 1628-1646. doi: 10.1080/00220381003706494
Humphreys, D. (2006). *Logjam: Deforestation and the Crisis of Global Governance*. London: Earthscan.
Illegal Logging Prohibition Act 2012, No. 166 (2012).
18 USC 42-43, 16 USC 3371-3378, Lacey Act (2008).
Lambin, E. F., Meyfroidt, P., Rueda, X., Blackman, A., Börner, J., Cerutti, P. O., et al. (2014). Effectiveness and synergies of policy instruments for land use governance in tropical regions. *Global Environmental Change, 28*(2014), 129-140.
LEI. (2015). LEI certified forests. Retrieved 15.2.2015, from http://www.lei.or.id/lei-certified-forests.
Masiero, M., Pettenella, D., & Cerutti, P. O. (2015). *Legality Constraints: The Emergence of a Dual Market for Tropical Timber Products?* (Vol. 6).
Matten, D., & Moon, J. (2008). 'Implicit' and 'Explicit' CSR: A Conceptual Framework for a Comparative Understanding of Corporate Social Responsibility. *Academy of Management Review, 33*(2).
McDermott, C. L., Cashore, B., & Kanowski, P. (2009). Setting the bar: an international comparison of public and private forest policy specifications and implications for explaining policy trends. *Journal of Integrative Environmental Sciences, 6*(3), 217-237. doi: 10.1080/19438150903090533
Miteva, D. A., Loucks, C. J., & Pattanayak, S. K. (2015). Social and Environmental Impacts of Forest Management Certification in Indonesia. *PLoS ONE, 10*(7), e0129675. doi: 10.1371/journal.pone.0129675
MoF. (2013). Statistik Kehutanan Indonesia 2012. . Jakarta, Indonesia.
Muhtaman, D. R., & Prasetyo, F. A. (2006). Forest certification in Indonesia. . In B. Cashore, F. Gale, E. Meidinger & D. Newsom (Eds.), *Confronting sustainability: Forest certification in developing and transitioning countries.* New Haven, United States: Yale School of Forestry & Environmental Studies.
Potts J, Lynch M, Wilkings A, Huppé G, Cunningham M, & V., V. (2014). The State of Sustainability Initiatives Review 2014: Standards and the Green Economy. Winnipeg, Manitoba Canada & London, UK.
Rickenbach, M., & Overdevest, C. (2006). More than Markets: Assessing Forest Stewardship Council (FSC) Certification as a Policy Tool. *Journal of Forestry, 104*(3), 143-147.
Rip, A., & Kemp, R. (1998). Technological change. In S. Rayner & E. L. Malone (Eds.), *Human Choice and Climate Change.* (pp. 327–399). Clumbus, Ohio, USA: Battelle Press.
Ruslandi. (2015a). Assessment of drivers of self-selection into natural forest management certification. *The context of natural forest management and FSC certification in Indonesia. CIFOR Occasional Paper 126.* Bogor, Indonesia: Center for international Forestry Research.
Ruslandi. (2015b). Dynamics along the Natural Forest Certification Continuum. *The context of natural forest management and FSC certification in Indonesia. CIFOR Occasional Paper 126.* Bogor, Indonesia: Center for International Forestry Research.
Ruslandi, Klassen, A., Romero, C., & Putz, F. E. (2014). Forest Stewardship Council Certification of natural forest management in Indonesia: Required improvements, costs, incentives, and barriers *Forests under pressure: Local responses to global issues*. Finland: IUFRO-WFSE.
Steering Committee of the State-of-Knowledge Assessment of Standards and Certification. (2012). Toward sustainability: The roles and limitations of certification. Washington, DC, United States of America RESOLVE, Inc.
Trujillo, M. (2014). ANÁLISIS DE PROGRESOS EN LA CERTIFICACIÓN FORESTAL FSC, RESTRICCIONES Y DESAFÍOS EN CONCESIONES FORESTALES DE LA AMAZONIA PERUANA *Informe Final de Consultoría*. Lima, Peru: Proambiente/GIZ.
Non-Legally Binding Instrument on All Types of Forest. (2007).
Viktor, D. G. (1999). Enforcing International Law: Implications for an Effective Global Warming Regime. *Duke Environmental Law & Policy Forum, 10*(147).
WWF-USAID. (2011). Certification and Development of Forest Enterprises in the Peruvian Amazon: A Civil Society-Public-Private Alliance (CERF) (pp. 76): USAID.

6

The Rise and Biodiversity Relevance of Private Governance in Canada's Fisheries and Aquaculture Sectors

Laurenne Schiller, Taylor Mason, Rhona Govender, Kathleen Short, and Megan Bailey

6 The Rise and Biodiversity Relevance of Private Governance in Canada's Fisheries and Aquaculture Sectors

Laurenne Schiller[1], *Taylor Mason*[2], *Rhona Govender*[3], *Kathleen Short*[4], *and Megan Bailey*[5]

Abstract

Bounded by the Atlantic, Arctic and Pacific Oceans, Canada has deep social, cultural and economic ties to the marine environment. Each year about 1 million tonnes of commercial marine fish and shellfish species are landed, amounting to $2 billion in gross revenues. In an effort to keep this benefit stream flowing for present and future generations, the Canadian federal government - through the Department of Fisheries and Oceans - initiates a series of management measures to regulate Canada's commercial marine fisheries and aquaculture practices, and to conserve ocean productivity. Yet despite a plethora of federal legislation and governance oversight, commercial Canadian fish harvesters and aquaculturists are increasingly turning to voluntary private market-based governance approaches as part of the sustainable seafood movement to promote sustainability and solidify access in an increasingly competitive global seafood market. In this paper, we analyze the proportion, by volume, of Canada's fisheries landings that are governed under some of these new approaches. The approaches we include in our assessment are the Marine Stewardship Council, Aquaculture Stewardship Council, Global Aquaculture Alliance, ThisFish consumer-facing traceability, Ocean Wise, and community supported fisheries. While all of these programs vary in their implementation, costs, and contexts, they are similar in that they are voluntary private mechanisms that aim to push the sustainability envelop in Canadian fisheries and aquaculture production. Given the purportedly strong federal mandate to manage fisheries, however, this paper provides a commentary on what it means for Canada's government, Canada's fisheries and aquaculture sectors, and for larger marine biodiversity objectives when private governance encroaches on the realm of public policy.

1 Research Analyst, Ocean Wise, Vancouver Aquarium Marine Science Centre, 845 Avison Way, Vancouver, BC V6G 3E2, Canada, laurenne.schiller@vanaqua.org
2 Research Assistant, Marine Affairs Program, Dalhousie University, Halifax, NS, Canada
3 Ocean Conservation Analyst, Canadian Parks and Wilderness Society
4 Research Assistant, Marine Affairs Program, Dalhousie University, Halifax, NS, Canada
5 Assistant Professor, Marine Affairs Program; Canada Research Chair in Integrated Ocean and Coastal Governance, Dalhousie University, 1355 Oxford St PO Box 15000 Halifax, NS B3H4R2, Canada, Megan.Bailey@Dal.Ca

1. Introduction

In 2014, almost 1 million tonnes of fish and shellfish were caught in Canada's marine waters, leading to about $2.8 billion in landed value (Fisheries and Oceans Canada, 2015a). When aquaculture and processing are added to the mix, the commercial fisheries sector provides nearly 83,000 jobs and has an estimated annual output of $7 billion (Le Vallee & Howard, 2013). Canadian fisheries are big business. However, the fish stocks that support these fisheries belong not only to fish harvesters but also to all Canadians; the economic benefits for some does not negate the fact that those benefits come from a public resource. Thus, good public policy is essential for good governance of Canada's fish stocks. Additionally, marine fish are only one component of the ocean ecosystem, an ecosystem that is part of the land-sea interface and includes coastal communities. In this regard, good ecosystem governance is also essential above and beyond good fisheries governance; yet a panel of academic experts has openly challenged the performance of Canada in promoting biodiversity and ecosystem conservation (Hutchings et al., 2012).

The management of fish in the oceans falls under the jurisdiction of Fisheries and Oceans Canada (DFO), whose mandate is to manage Canada's oceans sustainability for present and future generations (Government of Canada, 2009). For DFO, sustainable management is composed of five key areas: planning, science, managing impacts, enforcing rules and monitoring results (Fisheries and Oceans Canada, 2015b). These goals are accomplished through different tools, including the Fisheries Act and the Oceans Act, both of which have come under criticism for being weakened and/or for being improperly implemented in recent years (Bailey et al., 2016; Office of the Auditor General of Canada, 2005, 2012; Rice et al., 2015; Wells, 2013). Additionally, the Government of Canada espouses the precautionary approach (Government of Canada, 2003), but again has been criticized for its lack of precaution (Bailey et al., 2016). Canada is also home to one of the world's most iconic fisheries collapses: Atlantic cod, whose stocks were so decimated that a fishing moratorium was instituted in 1992. Only now are some cod stocks around Newfoundland showing signs of rebuilding (Rose & Rowe, 2015; Wappel, 2005).

Recognition of the failure of public fisheries management organizations to effectively govern fish stocks in Canada, and in fact globally, has led to the rise of private governance approaches, such as eco-labelling and consumer awareness campaigns (Jacquet et al., 2009). Furthermore, limits on the reaches of governments to control production of imported goods in an ever increasingly global marketplace has meant that market-based approaches may be a sort of fix to correct for sustainability in the market when trade is unable to do so (Potts & Haward, 2007). These approaches are aimed at affecting the perceptions and buying habits of consumers and retailers, with the assumption that downstream market actors have the ability to drive changes in upstream production practices. Simply put: if consumers demand, and are willing to pay for, 'sustainable' seafood, then producers will be forced to improve their fishing methods in order to meet that demand. The growth of sustainable seafood has been monumental over the last two decades, with its most prolific player being the Marine Stewardship Council (MSC) (Ponte, 2012). However, the MSC has been criticized for its lack of accessibility for developing country fisheries, for its ethics, its effectiveness, and for the very market-based principles on which it relies (Bush et al., 2013; Christian et al., 2013a; Froese & Proelss, 2012; Konefal, 2012). One part of Canada's collapsed cod fishery mentioned above, the so-called 3Ps cod stock, was certified as meeting the MSC standard in March 2016, a move that has been criticized by environmental groups and for which an objection was filed by the Ecology Action Centre in Halifax, Nova Scotia (Fuller, 2015).

In Canada, several market-based approaches have taken hold in addition to the MSC, including the Aquaculture Stewardship Council (ASC), Global Aquaculture Alliance (GAA), community supported fisheries (CSFs), Ocean Wise, and ThisFish (Table 1). In this paper we review these approaches and how they have materialized in the Canadian context. These approaches were selected because they are all outward (or consumer-facing) market-based approaches that provide some amount of sustainability information (writ large) to consumers. We provide an estimate of the amount (by volume) of seafood in Canada that is currently fished or cultured under these different approaches. But with the growth of private market-based approaches for fisheries and seafood governance, does it follow that Canada's biodiversity conservation performance is strengthened? In what ways do fisheries and aquaculture certifications, seafood traceability, consumer awareness and local fisheries interact with larger societal goals around sustainability and biodiversity in general? We answer these questions and reflect on what this turn in private governance means for Canadian fisheries and biodiversity conservation.

2. The realization: Origins of private governance and the sustainable seafood movement in Canada

2.1 Marine Stewardship Council

The Marine Stewardship Council (MSC) is an international non-profit organization based in London, UK that was established through a partnership between the World Wildlife Fund (WWF) and Unilever in 1997 (Foley, 2013). On their website, the MSC attributes their emergence as a response to concerns of overfishing; in particular, the severity of the social, economic and environmental impacts of the collapse of Canada's Grand Banks cod fishery inspired these organisations to take a global, market-driven

Table 1. Summary of private governance arrangements for sustainable seafood in Canada.

Program	Concept	Sustainability link	Example fisheries in Canada	Year introduced in Canada
MSC	Certification standard for capture fisheries	3 Principles (target species, ecosystems, management); "Best environmental choice in seafood"	Lobster, albacore, scallops, shrimp, snow crab, halibut, herring	2008
ASC	Certification and labeling program for farmed seafood	Meeting global demand, preservation of wild populations and minimal environmental impact	Salmon	2015
GAA	NGO focused on global aquaculture	Long-term sustainable aquaculture, improving the environmental and social quality of farms	Salmon and mussels	2014
CSF	Sales agreements between communities and local fishers	Community connectivity, local food consumption	Salmon, American plaice, witch flounder, haddock, pollock, cod, redfish, hake, monkfish, crab, squid, lobster	2008
Ocean Wise	Seafood recommendation program	Responsible seafood choices through consumer-facing outreach	Mussels, oysters, clams, salmon, albacore, shrimp, halibut, haddock	2005
ThisFish	Seafood traceability program	Supply chain transparency, consumer confidence	Cod, lobster, bass, bluefish, monkfish, haddock, shrimp, halibut, salmon, crab, tuna	2009

approach to eco-labelling for fisheries. By setting standards for responsible fishing practices and management, the MSC developed an environmental certification and labelling program in order to help reverse declines in fish stocks associated with poor practices and create a market for 'sustainable fish' (Ponte, 2012). These standards were developed after two years of international consultations with academic and organisational experts and take the form of the blue MSC eco-label. Since its establishment, the MSC has grown exponentially in terms of both the number of fisheries it has certified and its uptake in consumer markets and it continues to be an international frontrunner in fishery labelling programs through partnerships with large retailers, distributors, restaurant chains and food service companies (Gutiérrez et al., 2012, Ponte, 2012). While the MSC claims to be the "best environmental choice in seafood", this assertion has been questioned (Christian et al., 2013b, Froese & Proelss, 2012).

The MSC entered Canada in 2008 with the certification of the northern prawn trawl fishery off the coast of Newfoundland. Since then, the MSC has certified 35 Canadian fisheries, including Atlantic halibut, northern and striped shrimp, Atlantic offshore scallop, Atlantic offshore lobster, snow crab, and herring. However, not all of these certifications have been without conflict. In addition to the formal objection recently launched for Newfoundland cod, formal objections were also filed in relation to the MSC certification of the Northwest Atlantic longline swordfish fishery and the British Columbia sockeye salmon fishery (Christian et al., 2013a). However, no objections to Canadian fisheries certifications have been successful to date (i.e., they rendered no change in the status of the assessment) and all certifications went forward.

2.2 Aquaculture Stewardship Council

Fish and invertebrates produced through aquaculture make up a rapidly increasing proportion of global seafood consumption. In many regions, this growth has resulted in negative environmental impacts, including the destruction of coastal zones, wetlands and mangroves, and many aquaculture operations are believed to affect habitat and spawning grounds of a variety of marine species (Kalfagianni & Pattberg, 2013a).

Due to major concerns surrounding shrimp farming practices (e.g., water pollution, the use of potential resources for fishmeal, and the destruction of mangroves), in 2007, WWF ran a 'shrimp Aquaculture Dialogue' (shAD) that included members of government, aquaculture businesses, non-government organizations (NGOs), and academia in order to generate ideas for transforming and influencing current shrimp farming practices toward environmental and social sustainability (Vellema & Van Wijk, 2015). Since then, the Aquaculture Stewardship Council (ASC) was founded in 2010 by WWF and the Dutch Sustainable Trade Initiative with a goal to certify responsible aquaculture operations (Vandergeest & Unno, 2012) and ASC standards have been created for twelve major species through eight Aquaculture Dialogues (Vandergeest & Unno, 2012).

Similar to the MSC, one of the major goals of the ASC is to connect with and inform consumers that aquaculture can be environmentally and socially responsible. To shift the perception of the industry, the ASC has created incentives to reward responsible farming practices through targeted marketing and eco-labels. The ASC has received both support and criticism in these efforts due to controversy surrounding aquaculture practices. While groups such as Oxfam Novib (ON) and the International Union for Conservation of Nature (IUCN) have engaged themselves in the ASC initiative (Vellema & Van Wijk, 2015), other NGOs and community groups are substantially less supportive. In 2015, the Living Oceans Society launched a formal (yet, as in the MSC cases, unsuccessful) objection to the Marine

Harvest Marsh Bay Farm certification in British Columbia, the first Atlantic salmon farm in North America to be recognized by the ASC. Globally, the reach of the ASC is limited, with less than 5% of the world's aquaculture production certified, and estimates of up to 60% being un-certifiable (Bush, Belton, et al., 2013).

2.3 Global Aquaculture Alliance

Prior to the establishment of the ASC, the Global Aquaculture Alliance (GAA) emerged in 1997 in response to the environmental pressures and impacts of aquaculture on marine species and their habitats (Kalfagianni & Pattberg, 2013b). As it evolved, the GAA developed more rigorous assessment criteria known as Best Aquaculture Practices (BAP), which are standards that seek to raise the environmental and social quality of farms by defining the most important elements of responsible aquaculture (Tlusty & Tausig, 2014). Each BAP standard was developed by a committee of technical, environmental, and social experts and stakeholders (e.g., members of NGOs, industry, and academia). GAA explains that their certification standards are based on environmental responsibility, social responsibility, food safety, animal health and welfare, and traceability. The assessment process involves a points system where points are awarded according to the level of compliance on each individual criterion, and the total must exceed a minimum level if a facility is to achieve BAP certification (Lee & Connelly, 2006).

The BAP covers the entire aquaculture supply chain in order to ensure a healthy and safe product through environmentally and socially responsible means (Kalfagianni & Pattberg, 2013a). Although the program was initially developed to improve shrimp aquaculture, the BAP standards now also apply to salmon, tilapia, catfish, pangasius, trout, mussels, barramundi, pompano and steelhead species. Globally, the GAA has certified over 1,000 facilities and, in Canada, there are currently 180 mussel and salmon farms that are BAP-certified .

2.4 Community Supported Fisheries

Modeled after Community Supported Agriculture (CSA) programs, CSFs are arrangements between primary producers and consumers, in which consumers provide upfront payments to fishers in exchange for scheduled seafood deliveries depending on seasonal availability (Brinson, Lee, & Rountree, 2011). Emerging in response to issues such as overfishing, negative impacts of fishing on marine habitat, and the rise of industrial aquaculture, CSFs have been developing amidst a widespread interest in locally sourced foods throughout North America (Campbell, Boucquey, Stoll, Coppola, & Smith, 2013).

The major goals of CSFs are to increase profits for local small-scale fish harvesters, provide high-quality seafood to interested and supportive customers, and to engage consumers with local fishing practices (Brinson et al., 2011). Those participating in CSFs are small-scale operators who typically employ low-impact and targeted techniques, which usually have fewer negative ecological impacts (such as bycatch). These programs also considerably decrease the distance between production and consumption, thereby reducing the carbon footprint associated with more industrial modes of seafood distribution (Mc Clenachan et al., 2014). In this regard, CSFs remove or reduce transportation steps that require labor, capital, and time, and thus enable fish harvesters to sell their catch at a higher price premium (Brinson et al., 2011).

The first successful CSF was established in Maine, USA in 2007, in which Port Clyde Fresh Catch sold shrimp and groundfish to the public in partnered communities (Campbell et al., 2013). Since then, CSFs have since faced rapid growth in North America. In 2011, a community of fish harvesters, organizers, researchers, and consumers from across North America established LocalCatch.org as a network that provides a directory of CSFs throughout Canada and the United States (Campbell et al., 2013). This

network currently includes over 260 locations that have access to CSF seafood. The CSF model first entered Canada in 2008 in Vancouver, British Columbia, when Skipper Otto CSF was established to provide wild salmon to consumers throughout the province. In 2010, the first CSF in Atlantic Canada was established with support from the Ecology Action Center and the Nova Scotia Department of Fisheries. Called "Off the Hook", this CSF focused on providing customers with local groundfish such as American plaice, witch flounder, haddock, pollock, cod, redfish, hake, monkfish, crab, squid and lobster (Brinson et al., 2011). There are now a number of locations across Canada putting forward the CSF model, with 22 locations listed on LocalCatch.org. However, the future of CSFs in Canada is uncertain. Off the Hook was not successful on its own, and in 2015 it was amalgamated with Tap Root Farms, a local CSA. The reasons for the lack of success have not been publically communicated, but could include lack of fully bottom-up development as often seen with CSAs (Short, 2016). Additionally, some CSFs have had to move to selling frozen (instead of fresh) product, or have gone back to relying on more value chain actors, like distributors, to help better connect producers with consumers (Sheriff, 2016).

2.5 Ocean Wise

Similar to the MSC and ASC, the Canadian environmental NGO (ENGO) Ocean Wise has also emerged as part of the movement to inspire change in fishing practices by challenging consumers to make responsible seafood choices through the use of an eco-label (Dolmage, 2013). The recommendation program was launched in 2005 by the Vancouver Aquarium Marine Science Centre in partnership with Chef Robert Clark (formally of C Restaurant in Vancouver) (Cisterna, 2006). Although only 16 restaurants initially joined the program, it now has nearly 700 partners (including restaurants, suppliers, and retailers) and thousands of locations across Canada. Until 2011, participation in Ocean Wise was free of charge to members but partners are now charged a membership fee (starting at $250 per year) in an attempt to make the program self-sufficient (Dolmage, 2013).

Ocean Wise collaborates primarily with the Monterey Bay Aquarium's Seafood Watch program and relies on the fishery and aquaculture assessments generated by the US-based program for most of its sustainable seafood recommendations. However, while Seafood Watch uses a stop light system (i.e., red: avoid; yellow: good alternative; green: best choice) Ocean Wise has a numerical cut-off (i.e., 2.8/5 points for capture fisheries and 5.5/10 points for aquaculture) and recommends all products that meet or exceed these values. The assessments themselves are conducted on an individual basis through a review of current scientific literature and consultations with governmental, non-governmental, and academic experts. Ocean Wise recommends both domestically caught and farmed seafood as well as imported products and currently has recommendations for over 700 wild-caught and farmed species.

The Ocean Wise program is unique as it focuses on empowering consumers to make educated seafood choices primarily through restaurants that are committed to serving seafood that is sustainably sourced. To become a partner, a restaurant must voluntarily approach the organisation and commit to replacing a minimum of one unsustainable menu item with a sustainable option (with the expectation of continual improvement over time) (Cisterna, 2006). Similar to other certification and partnership programs focused on sustainable seafood, the commitment to serving Ocean Wise products presumably provides consumers and businesses with the opportunity to make (and showcase) environmentally conscious choices. Despite engagement with many partners in the restaurant and retail sectors, the Ocean Wise program does not currently have the capacity to conduct regular audits of its partners. While a high level of trust is placed

in partner participation, and review of partner menus does occur, there remains an overall inability to ensure that all products are correctly labelled and sourced. Furthermore, as a result of the success of the program, many restaurants will use the registered trademark eco-label without joining the program. Although in many cases the mis-usage of the Ocean Wise eco-label is not a result of malicious intent (but rather misunderstanding of the requirement involvement) this type of occurrence can undermine the work of Ocean Wise and those partners that are sourcing sustainable products.

2.6 ThisFish

Third-party traceability programs are often promoted within the sustainable seafood movement as a tool for making supply chains more transparent (Parlee & Wiber, 2011). In Canada, ThisFish has emerged as one of the leading seafood traceability systems (Kwon, 2012). This program involves voluntary relationships and agreements between fishers, processors, wholesalers and retailers to work in partnership in order to build consumer confidence in choosing sustainable North American seafood. ThisFish uses an online database that relies on numbered tags attached to individual fish and allows consumers, retailers, chefs and others on the market chain to trace the source of their purchase. This catch data is uploaded by fishers and includes information about their experience on the water, where the product came from, and what methods were used to harvest it (Parlee & Wiber, 2011).

The concept of ThisFish emerged in 2009 when the Canadian Council of Professional Fish Harvesters (CCPFH) approached the Canadian environmental NGO Ecotrust to partner on a variety of traceability projects on both the west and east coasts of Canada (Parlee & Wiber, 2011). Through this collaboration with fishers, Ecotrust was able to develop tags, websites, and formats for providing information about the Canadian fishing industry (Coulson, 2013a). Since its establishment, the program has expanded throughout the country, and is now also operating in New England, USA and Indonesia, with more than 300 sourced fisheries included in the ThisFish web tool. Some of these fisheries include Atlantic cod, Atlantic lobster, black sea bass, bluefish, monkfish, haddock, northern shrimp, Pacific halibut, pink salmon, snow crab and yellowfin tuna. The program is unique in that it provides consumers not only the ability to trace their seafood but also the opportunity to provide direct feedback to the fishers or ask questions about the product and traceability program (Parlee & Wiber, 2011). This feature allows for direct two-way communication between the consumer and the fishers, therein addressing the disconnect that much of society has with the seafood they consume (Bailey, Bush, Miller, & Kochen, 2016).

The program prioritizes collaboration with NGOs, retailers, and other sustainable seafood initiatives such as the Ocean Wise program, and has helped to create transparency in North American fisheries (Coulson, 2013b). This traceability program may also reinforce validity and support major certification and eco-labelling initiatives such as the MSC and the ASC by fostering a connection between consumers and their seafood (Bailey et al., 2016). One limitation with ThisFish is that it does not directly equate with sustainable seafood as any fishery can participate, regardless of whether it has been certified by a sustainability standard or program. There is speculation that improved value chain transparency, as apparent in Thisfish, could mean a race to the top in terms of improving the social and environmental aspects of production, but more work is needed here to ascertain if this is the case for seafood (Bailey & Egels-Zandèn, 2016). At present, the program focuses more on democratizing fisheries information and raising consumer awareness and connection, as opposed to promoting any particular species or form of fishing.

3. The result: The proportions of sustainable seafood in the Canadian market by volume and value

Data on Canadian fisheries and aquaculture production for 2014 were obtained from DFO (Table 2). Additional data related to the specific fish and seafood products recommended, certified, or sold by the market-based approaches discussed above were solicited from the relevant programs in order to determine

Table 2. Landings (in tonnes) of marine fish and invertebrates in Canada in 2014 by province.

	Atlantic					Pacific
Species	**NS**	**NB**	**PEI**	**Quebec**	**NL**	**BC**
Groundfish						
Cod	2,371	4	7	438	10,180	1,260
Haddock	15,732	-	-	-	304	-
Redfish spp.	6,805	8	-	49	2,086	16,179
Halibut	2,200	106	24	453	835	3,619
Flatfishes	2,115	-	7	383	8,246	15,561
Greenland turbot	44	1	-	2,977	11,290	-
Pollock	2,875	-	-	-	328	7,601
Hake	8,040	1	-	5	405	37,437
Cusk	210	-	-	-	2	-
Catfish	-	-	-	-	-	-
Skate	105	-	-	1	208	847
Dogfish	54	-	-	-	-	221
Other	2,226	6	32	19	79	3,330
Pelagic & other finfish						
Herring	44,891	31,532	6,127	6,329	25,731	23,177
Mackerel	770	449	522	1,367	3,432	-
Swordfish	1,609	-	-	-	-	-
Tuna	571	6	153	10	23	4,780
Alewife	697	811	54	-	-	-
Eel	31	132	107	-	42	-
Salmon	-	-	-	-	-	35,473
Smelt	-	120	4	-	-	-
Silversides	154	-	294	-	-	-
Shark	64	-	-	-	-	-
Capelin	-	-	-	20	28,847	-
Other	34	7	-	1	22	-
Shellfish						
Clams / quahaug	2,071	481	521	1,120	22,675	1,866
Oyster	72	153	1,034	-	-	-
Scallop	63,772	3,557	365	560	1,492	-
Squid	22	-	-	-	-	8
Mussel	2	-	-	-	-	-
Lobster	51,534	20,236	13,518	5,353	2,138	-
Shrimp	24,872	5,635	-	18,298	80,853	2,143
Crab, Queen	19,187	9,655	1,544	15,956	49,761	-
Crab, Other	1,005	1,166	1,774	1,244	87	3,862
Whelks	111	-	4	952	2,424	-
Cockles	6	-	-	-	252	-
Sea cucumber	1,719	910	-	1,815	936	1,688
Sea urchin	270	1,073	-	495	539	3,850
Other	-	-	-	-	-	67
Total	**256,542**	**87,970**	**28,310**	**57,846**	**255,960**	**162,969**

how much of the seafood in Canada is covered by each. No numerical estimates of production values were available from ThisFish or Skipper Otto CSF, estimates for Ocean Wise coverage were estimated using gear and location-specific data correlation. The ASC and GAA (BAP) provided production values and the MSC provided specific landings data upon request for Canadian fisheries they have certified. Note that there would be no double counting between ASC and MSC as they will never overlap (fisheries v. aquaculture) but, as discussed below, some fisheries will meet the criteria/standards for one eco-certification or recommendation but not another. This results in overlap in coverage and, in some cases, certification/ recommendation by multiple programs when standards do align (e.g., MSC North Pacific albacore is also recommended by Ocean Wise).

Pacific Ocean

Of the 163,000 t landed in the Pacific in 2014, 71% was recommended by at least one market-based program, with substantial overlap between Ocean Wise and the MSC (Table 3). Due to the coarse resolution of the data provided by DFO, this may be a slight over-estimation of program coverage as it was impossible to deduce recommendations to the species/ gear/ fishing region level and some generalizations were necessary. For example, 'Crab, Other' was assumed to be all Dungeness crab since the most recent Integrated Fishery Management Plan (IFMP) reports that this species accounts for almost all of the commercial landings in BC (Fisheries and Oceans Canada, 2016). When the value of seafood is considered, products covered by at least one program account for at least 73% of the estimated $390 million generated by the fisheries of the west coast of Canada. Although the volume of seafood sold by the local CSF (Skipper Otto) was unavailable, it is worth noting that all products sold by Skipper Otto are also Ocean Wise-recommended and all of the products in the ThisFish program are also either MSC certified, Ocean Wise-recommended, or both.

Atlantic Ocean

While market-based programs cover 74% of fisheries landings on the Atlantic coast of Canada, substantial differences between program recommendations exist (Table 4). Specifically, while the MSC has certified 72%

Table 3. Atlantic Ocean fisheries coverage by consumer-facing Canadian seafood programs in 2014.

Species	2014 Landings (t)	MSC certified	OW recommended	OW not recommended	ThisFish	Skipper Otto CSF
Cod	1,260	-	1,260	-	Y	Y
Redfish spp.	16,179	-	-	-	N	N
Halibut	3,619	3,619	3,619	-	Y	Y
Flatfishes	15,561	-	-	-	N	N
Pollock	7,601	-	-	-	N	N
Hake	37,437	37,437	37,437	-	N	N
Skate	847	-	423	423	N	N
Dogfish	221	-	-	-	N	N
Herring	23,177	-	23,177	-	N	N
Tuna	4,780	4,780	4,780	-	Y	Y
Salmon	35,473	35,473	35,473	-	Y	Y
Clams / quahaug	1,866	-	-	-	N	N
Squid	8	-	-	-	N	N
Shrimp	2,143	-	2,079	64	Y	N
Crab, Other	3,862	-	3,862	-	Y	Y
Sea cucumber	1,688	-	**	**	N	N
Sea urchin	3,850	-	3,850	-	N	N
Giant Pacific octopus	35	-	35	-	Y	N
Other	3,362	-	-	-		
Total	**162,969**	**81,309**	**115,995**	**488**		
Coverage		**50%**	**71%**	**0%**		

** = assessment currently in progress

of Atlantic fisheries by volume, Ocean Wise recommends only 12% (with an additional 40% assessed but not recommended). The MSC has certified many of the largest fisheries (in terms of both tonnage and value) including Atlantic lobster and snow crab, which had a combined worth of $1.5 billion in 2014 (62% of the value of all Atlantic fisheries); Ocean Wise only recommends some of the fisheries targeting these species. In addition, ThisFish works with fisheries that neither Ocean Wise nor MSC currently cover, including whelk, oyster, and dogfish. In 2015, the CSF Off the Hook sold 2.7 t of groundfish (haddock, pollock, hake, and cod) to program members along with smaller quantities of lobster (32 kg) and halibut (283 kg) (Justin Cantafio, pers. comm.)

Aquaculture

In 2014, Canada's largest aquaculture output in terms of both volume and value was Atlantic salmon (79,000 t and $548 million). With the exception of a few land-based recirculating aquaculture system (RAS) facilities, the majority (~99%) of this salmon was produced in open net sea pens. Ocean Wise does not recommend any Canadian Atlantic salmon farmed in this way; however, both GAA (BAP) and ASC recommend some of the country's sea pen facilities. As of January 2016, the ASC had certified five Atlantic salmon farms (with total annual production of 16,280 t in 2015) and GAA had certified 131 salmon farms (with total annual production of 90,773 t in 2015). While these values refer to certifiable production (i.e., the total amount of production at the farms which have obtained ASC certification), not all production is necessarily certified. The discrepancy between 2014 salmon production and 2015 certification is likely due to rapid growth in the aquaculture industry, and the reporting of certifications as maximum licensed production as opposed to actual production. Although Ocean Wise does not recommend ocean-farmed salmon, the program does recommend land-based recirculating

Table 4. Pacific Ocean fisheries coverage by consumer-facing Canadian seafood programs in 2014.

Species	2014 Landings (t)	MSC certified	OW recommended	OW not recommended	ThisFish	Off The Hook
Cod	13,001	5,490	-	5,490	Y	Y
Haddock	16,037	15,732	637	15,359	Y	Y
Redfish spp.	8,948	**	-	-	N	N
Halibut	3,617	3,022	**	**	Y	Y
Flatfishes	10,751	6,082	**	**	N	N
Pollock	3,204	-	-	3,188	N	Y
Hake	8,451	-	-	1,108	N	Y
Herring	114,610	68,603	-	3,123	N	N
Mackerel	6,540	-	3,022	-	N	N
Swordfish	1,609	1,609	236	1,374	N	N
Dogfish	54	-	-	-	Y	N
Tuna	763	-	9	754	N	N
Capelin	28,867	-	11,360	17,506	N	N
Clams / quahaug	26,869	22,675	9	-	N	N
Scallop	69,745	63,974	-	69,392	Y	N
Lobster	92,779	90,530	**	**	Y	Y
Shrimp	129,658	129,653	47,009	76,373	Y	N
Crab, Queen	96,103	86,514	17,860	73,103	N	N
Crab, Other	5,277	-	-	4,663	Y	N
Whelk	3,491	-	**	**	Y	N
Urchin	2,377	-	1,039	-	N	N
Oyster	1,258	-	-	-	Y	N
Other	42,618	-	-	-		
Total	**686,629**	**493,884**	**81,181**	**271,433**		
Coverage		**72%**	**12%**	**40%**		

** = assessment currently in progress

aquaculture system (RAS) farmed salmon, as well as several farmed shellfish species, including mussels, oysters, clams and scallops. Annual production of these shellfish species in Canada is estimated at 39,800 t ($81.7 million), and Ocean Wise recommends almost all of this output. GAA (BAP) certifies 5,948 t of mussels from this total. Neither ThisFish nor the CSFs looked at in this review include aquaculture species in their programs. However, a direct marketing (similar to CSF) program in Halifax, Afishionado launched in early 2016, does include farmed salmon (land-based aquaculture), mussels and oysters in its weekly box.

4. The relevance: Is private the path to biodiversity conservation and management of public resources in Canada?

The data compiled for this study suggests that a large proportion of Canada's fisheries and aquaculture production is governed by one or more consumer-facing market-based approaches. There is a moderate degree of alignment between commercial fisheries recommendations by the MSC and Ocean Wise on Canada's Pacific coast (50% and 71% coverage, respectively) yet Ocean Wise recommends only 12% of east coast fisheries, compared to 72% by MSC. Although Ocean Wise does not currently have assessments for many large east coast fisheries (e.g., Atlantic halibut and lobster), this misalignment is also derived from differences in assessment criteria and sustainability requirements for some of the larger Atlantic fisheries (e.g. haddock and sea scallop). Discrepancies between certification and recommendation groups are likely among the biggest challenges for consumers who seek to make responsible seafood choices since a lack of consistency in messaging is confusing and the time required to delve further into the nuances of each eco-label is likely more than can be afforded in the grocery aisle.

Furthermore, seafood consumption in Canada is declining (Le Vallee & Howard, 2013), and as much as 85% of Canada's fish and seafood production is currently exported (Government of Canada, 2015b). These exports are sent primarily to Asia and the United States, and consist mostly of lobster, crab, shrimp, farmed Atlantic salmon and scallops. Work by SeaChoice (a coalition of 4 Canadian ENGOs) to disentangle the sustainable production and trade dynamics for Canada has concluded that data aggregation, opaqueness and in fact inconsistencies between federal agencies (for example, DFO versus Statistics Canada) result in difficulty making any strong conclusions about the availability of sustainable seafood in Canada's marketplace, and what proportion of that is domestically produced or imported (SeaChoice, 2015). This general lack of credible and accessible public data was also raised in a recent review of Canada's oceans databases (Cisneros-Montemayor et al., n.d.).

The sustainable seafood conversation has largely revolved around ecological sustainability of target stocks (Gutiérrez et al., 2012), with ecosystems, particularly in regards to non-target catch and habitat sometimes included in some form or another. At the same time, it is unclear the extent to which fisheries certifications, consumer awareness, traceability and supporting local seafood impact biodiversity conservation in Canada. Has the growth of these programs been mirrored by an improvement in biodiversity conservation? This is a hard question to answer, and one that is admittedly only superficially addressed here through a brief discussion of how the market-based approaches above can help. While the five strategic Aichi Goals (and their 20 targets) are focused on the state of our planet as a whole (Convention on Biological Diversity, 2011), Canada has its own set of four similar, but slightly modified goals (with 19 targets) leading up to 2020 (Government of Canada, 2015a). We discuss the sustainable seafood movement in Canada in light of this country's specific conservation and biodiversity goals:

1. By 2020, Canada's lands and waters are planned and managed using an ecosystem approach to support biodiversity conservation outcomes at local, regional and national scales.
2. By 2020, direct and indirect pressures as well as cumulative effects on biodiversity are reduced, and production and consumption of Canada's biological resources are more sustainable.
3. By 2020, Canadians have adequate and relevant information about biodiversity and ecosystem services to support conservation planning and decision-making.
4. By 2020, Canadians are informed about the value of nature and more actively engaged in its stewardship.

We see three main themes emerge from these goals. The first relates to citizen engagement with biodiversity information and appreciation of the value nature. The second is that this understanding helps to support a management approach that centres around ecosystems and biodiversity conservation. The third theme is that the outcome should then be a reduction in pressures and cumulative effects and promotion of sustainable resource production and consumption.

4.1 Theme 1: Citizen engagement and knowledge

For Canada, biodiversity goals linked to theme are simply about helping the average citizen to recognize and connect more with biodiversity. The Vancouver Aquarium Marine Science Centre recently reported that more than three-quarters of Canadians surveyed (n=1122) feel that, collectively, society and government are not doing enough to conserve and protect our oceans. Many also see overfishing as a threat to marine health. When asked about mitigating impacts specifically related to plastic waste, over half of those surveyed suggested they were willing to take action. From a conservation perspective, this information is encouraging, as it suggests many Canadians do care about the state of our aquatic environments and are interested in alleviating anthropogenic threats when given the right information and pathways to do so.

Arguably, it is to this theme that seafood awareness campaigns have the most general impact. As their name suggests, these initiatives focus on raising awareness of the sustainability concerns associated with seafood production and consumption, and the attending conservation issues. Although their standards and raison d'etre differ, in their most basic regard, all of the programs discussed here raise awareness on the impacts of fishing and enable consumers to make sustainable choices through democratization of ecological information. Through the assessment process and the subsequent recommendation of certain species, these programs encourage consumers to think about the seafood they eat as more than just "fish". It could be argued that this diversifying of products ultimately encourages an appreciation for marine biodiversity and ecosystem health.

4.2 Theme 2: Ecosystem management

It has been argued that due to inconsistent application of standards and lack of robust linkages between standards and biodiversity, eco-labels will never make major headway in conserving biodiversity (Ward, 2008). For Canada, this theme of ecosystem-based management is a particularly controversial one when viewed through the sustainable seafood and certification lens. Canada's east coast lobster fishery is MSC-certified, and while lobster stocks may be doing well, their very success is contingent on a simplified ecosystem dominated

by lower trophic level organisms, instead of the previously groundfish-dominated one (Frank, Petrie, Choi, & Leggett, 2005; Worm & Myers, 2003). Now two fisheries are certified: one that drove the collapse of cod, and another that resulted from this collapse. While the MSC dedicates the second of its three principles to ecosystems (and habitats), the organization issued a press release stating that marine protected areas in the Bering Sea (to protect vulnerable deep sea habitat) is unnecessary, supposedly because the presence of an MSC-certified fishery is evidence enough that habitats are being taken care of (Bolan, 2015). The fact that fisheries are targeting fish and shellfish species for reduction into fishmeal and fish oil (krill, for example) is also problematic from an ecosystem standpoint, in that these species are critical to ecosystem functioning and the science is still unclear on how large removals of these important species may impact ocean ecosystems (Cury et al., 2011; Grant-, Hill, Trathan, & Murphy, 2013; Trivelpiece et al., 2011).

[T]he extent to which consumer-facing private and voluntary market-based governance in Canada's seafood sector contributes to biodiversity by safeguarding ecosystems is particularly problematic.

Ecosystem management requires ecosystem inputs, which necessitates stakeholder participation, and so the aspirations and views of those working on the water, fish harvesters, need to be engaged. The increase in CSFs in particular may support this theme in that they are a community-based business model that utilizes local involvement from fishers, contributing to all three aspects of participatory planning, knowledge management, and capacity building. Knowledge management and dispersal is key in this type of operation because fisher knowledge is required to deliver adequate and reliable catch, organizational knowledge is required to coordinate and operate the CSF, and there is an attempt to influence and increase consumer knowledge as an end result. Participatory planning occurs through continuous involvement of and input from the fishers, organizers, and community consumers who will be involved throughout the operation. This in turn leads to capacity building in these fishing communities, since this type of organization requires actors to take on new roles, immersing the fisher in marketing and logistics, and educating the consumer on sustainable seafood and community endeavors (Short, 2016). However, certification may, not adequately account for the aspirations of industry. In Alaska, for example, there was notable industry opposition for continued MSC certification of the salmon fishery, in part because fish harvesters thought that the branding (and management) of Alaska salmon carried (and should carry) more sustainability weight than the MSC (Foley & Hébert, 2013).

4.3 Theme 3: Sustainable production and consumption

A report published by DFO in 2016 suggests that, as of 2014, only 75 (48%) of the country's 155 major fish stocks were considered to be in a "healthy" zone with 40 stocks (26%) classified as "cautious" and 16 stocks (10%) classified as "critical". On the one hand, these values have changed little since 2011—when 17 stocks were classified as critical—however, 11 stocks for which status was unknown three years ago have since received classification. At present, of the critically classified stocks, 13 are groundfish species (e.g., halibut, cod, redfish, hake). The MSC certification of 3Ps cod was objected to in part because Atlantic cod is assessed as 'endangered'

by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), although it has not yet been listed by the Minister of Environment as such on the Canadian Species at Risk Act (SARA). Atlantic cod is listed globally as "Vulnerable" on the IUCN Red List of Threatened Species. Thus, concurrent with complaints that the government of Canada is not doing enough to project and rebuild marine COSEWIC-listed species (Bailey et al., 2016; McDevitt-Irwin, Fuller, Grant, & Baum, 2015), private groups are now giving their stamp of approval on harvest of controversial species.

But sustainable production and consumption goes beyond ecological sustainability. Economically and socially sustainable production and consumption may be equally important to Canadians. Does certification and ecolabeling support the sustainability sphere? The sustainable seafood movement has never been commended for its inclusivity. The MSC has been criticized for its lack of accessibility to developing world fisheries (Bush, Toonen, et al., 2013), and traceability, through the lens of informational governance, has been questioned about its implications for north-south inequities because demands come from the developed world and could place a burden on developing world producers (Bailey et al., 2016). Certification of aquaculture is also limited in providing benefits to a large portion of the planet if the observation is correct that much of the global production is un-certifiable (Bush, Belton, et al., 2013). However, more emphasis on local food and the social implications of the seafood that one buys (McClenachan, Dissanayake, & Chen, n.d.) means that emerging market-based approaches like CSFs, and Fair Trade USA fish may offer a wider scope to enhance the benefits of biodiversity and ecosystem services to a wider range of stakeholders.

To date, Ocean Wise has completed reports for the Nuu-chah-nulth First Nations gooseneck barnacle fishery (the only one of its kind in North America), giant Pacific octopus fishery, Chedabucto Bay shrimp fishery, and is currently working with managers and scientists in Nunavut to complete an assessment for a wild Arctic char fishery that is a key source of both protein and livelihoods for the local Inuit town of Cambridge Bay. While each situation was unique, all of these assessments came about as a result of interest in the program from the primary producer (or affiliated resource managers), from restaurant partners, or from discussion with another ENGO.

Conclusion

Our results demonstrate that a large proportion of Canadian fish and shellfish production and harvest is governed by at least one consumer-facing market-based approach. On Canada's Pacific coast, there is alignment between ratings, but on Canada's east coast, misalignment of assessment standards means that much of the seafood that is MSC-certified is not recommended by Ocean Wise. Both CSF and consumer-facing traceability cover almost negligible portions of the market, but potentially offer more local benefits. That there is wide coverage by these approaches does not necessarily mean that the market is contributing to larger societal goals of biodiversity conservation, however.

Our assessment suggests that the sustainable seafood movement in Canada may help Canada to meet some of its strategic goals in lines with the global Aichi targets, that of biodiversity mainstreaming. Meeting the goals of reduced pressure on biodiversity, equitable benefits, and enhanced participation/capacity are more tenuous. Furthermore, the extent to which consumer-facing private and voluntary market-based governance in Canada's seafood sector contributes to biodiversity by safeguarding ecosystems is particularly problematic. For example, Atlantic Canada's lobster fishery is certifiable because the stocks are healthy, which is in large part due to a catastrophic fisheries collapse and ecosystem shift.

It may be argued that the role of these approaches is not, in fact, to support biodiversity conservation goals, but rather to promote sustainable fisheries for the target stocks. In this case government action separate from, or in concert with, private fisheries governance approaches is still required. Yet, these fisheries, which depend on the public good, require governance that is packaged to meet Canada's societal goals and to support good public policy of Canada's ocean ecosystems. Private approaches may push Canada's fisheries sustainability agenda forward in a way that does not equalize access to biodiversity benefits for Canadians and does not adequately account for habitats and ecosystems. In this case, the role for reinserting state agency (see Foley, 2013), i.e., the Canadian government, becomes more important than ever, as does partnership between private and public institutions in ensuring that the government's mandate of ensuring sustainable ocean use for all Canadians now and in the future can be met.

Acknowledgements

The authors wish to thank Justin Cantafio from the Ecology Action Centre for providing the Off the Hook data, Eric Enno Tamm for his feedback on ThisFish, Jay Lugar and Alena Priddy for information on MSC certified Canadian fisheries and Ali Blais for the most recent BAP data. MB thanks the OceanCanada Partnership and the Social Sciences and Humanities Research Council for support. Lastly, the views and opinions expressed in this contribution by LS and RG are those of the authors alone and do not necessarily reflect the policy or position of their affiliate organizations.

References

Bailey M & Egels-Zandèn N. (2016). Transparency for just seafood systems. Solutions 7(6): 66-73.

Bailey, M., Bush, S. R., Miller, A., & Kochen, M. (2016). The role of traceability in transforming seafood governance in the global South. Current Opinion in Environmental Sustainability, 18, 25–32. http://doi.org/10.1016/j.cosust.2015.06.004

Bailey, M., Favaro, B., Otto, S. P., Charles, A., Devillers, R., Metaxas, A., … Sumaila, U. R. (2016). Canada at a crossroad: The imperative for realigning ocean policy with ocean science. Marine Policy, 63, 53–60. http://doi.org/10.1016/j.marpol.2015.10.002

Bolan, G. (2015). Alaska pollock and the Bering Sea canyons.

Brinson, A., Lee, M. Y., & Rountree, B. (2011). Direct marketing strategies: The rise of community supported fishery programs. Marine Policy, 35(4), 542–548. http://doi.org/10.1016/j.marpol.2011.01.014

Bush, S., Belton, B., Hall, D., Vandergeest, P., Murray, F. J., Ponte, S., … Kusumawati, R. (2013). Certify Sustainable Aquaculture ? Science, 341(September), 9–10.

Bush, S., Toonen, H., Oosterveer, P., & Mol, A. (2013). The " devils triangle " of MSC certification : Balancing credibility , accessibility and continuous improvement. Marine Policy, 37, 288–293. http://doi.org/10.1016/j.marpol.2012.05.011

Campbell, L. M., Boucquey, N., Stoll, J., Coppola, H., & Smith, M. D. (2013). From Vegetable Box to Seafood Cooler: Applying the Community-Supported Agriculture Model to Fisheries. Society & Natural Resources, 27(1), 88–106. http://doi.org/10.1080/08941920.2013.842276

Christian, C., Ainley, D., Bailey, M., Dayton, P., Hocevar, J., LeVine, M., … Jacquet, J. (2013a). A review of formal objections to Marine Stewardship Council fisheries certifications. Biological Conservation, 161, 10–17. http://doi.org/10.1016/j.biocon.2013.01.002

Christian, C., Ainley, D., Bailey, M., Dayton, P., Hocevar, J., LeVine, M., … Jacquet, J. (2013b). Not "the best environmental choice in seafood": A response to Gutiérrez and Agnew (2013). Biological Conservation, 165, 214–215. http://doi.org/10.1016/j.biocon.2013.06.003

Cisneros-Montemayor, A., Cheung, W., Bodtker, K., Teh, L., Steiner, N., Bailey, M., … Sumaila, U. (n.d.). Towards an integrated database of Canadian ocean resources: benefits, current states, and research gaps. Scientific Data.

Cisterna, N. (2006). The Politics of Eating Sustainably: Explaining Altruism in the Ocean Wise Program. University of British Columbia.

Convention on Biological Diversity. (2011). Aichi Biodiversity Targets. Retrieved September 11, 2015, from https://www.cbd.int/sp/targets/

Coulson, E. (2013a). Trace your fish from sea to Thrifty Foods Stores. Retrieved February 15, 2016, from http://thisfish.info/generic/article/14/

Coulson, E. (2013b). Trace your fish from sea to Thrifty Foods Stores.

Cury, P. M., Boyd, I. L., Bonhommeau, S., Anker-Nilssen, T., Crawford, R. J. M., Furness, R. W., … Sydeman, W. J. (2011). Global Seabird Response to Forage Fish Depletion: One-Third for the Birds. Science, 334(6063), 1703–1706. http://doi.org/10.1126/science.1212928

Dolmage, K. (2013). The Market for Sustainable Seafood in Vancouver: An Ocean Wise Assessment. University of Akyreyri, Iceland.

Fisheries and Oceans Canada. (2015a). Commerical Fisheries Landings. Retrieved March 10, 2016, from http://www.dfo-mpo.gc.ca/stats/commercial/land-debarq/sea-maritimes/s2014pq-eng.htm

Fisheries and Oceans Canada. (2015b). Fisheries Sustainability. Retrieved March 30, 2016, from http://www.dfo-mpo.gc.ca/fm-gp/sustainable-durable/fisheries-peches/index-eng.htm

Fisheries and Oceans Canada. (2016). Integrated Fisheries Management Plan Summary: Crab by Trap Pacific Region.

Foley, P. (2013). National Government Responses to Marine Stewardship Council (MSC) Fisheries Certification: Insights from Atlantic Canada. New Political Economy, 18(2), 284–307. http://doi.org/10.1080/13563467.2012.684212

Foley, P., & Hébert, K. (2013). Alternative regimes of transnational environmental certification: Governance, marketization, and place in Alaska's salmon fisheries. Environment and Planning A, 45(11), 2734–2751. http://doi.org/10.1068/a45202

Frank, K. T., Petrie, B., Choi, J. S., & Leggett, W. C. (2005). Trophic cascades in a formerly cod-dominated ecosystem. Science (New York, N.Y.), 308(5728), 1621–3. http://doi.org/10.1126/science.1113075

Froese, R., & Proelss, A. (2012). Evaluation and legal assessment of certified seafood. Marine Policy, 36, 1284–1289. http://doi.org/10.1016/j.marpol.2012.03.017

Fuller, S. (2015). MSC Notice of Objection Form, v2.0. Halifax. Retrieved from https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-west-atlantic/canada_newfoundland_3ps_cod/copy_of_assessment-downloads-1/20151117_NOO_COD461.pdf/view

Government of Canada. (2003). A framework for the application of precaution in science-based decision making about risk.

Government of Canada. (2009). Our oceans, our future: Federal programs and activites. Retrieved September 8, 2015, from http://www.dfo-mpo.gc.ca/oceans/publications/brochures/fpa09-paf09/index-eng.asp

Government of Canada. (2015a). 2020 Biodiversity Goals and Targets for Canada. Retrieved September 13, 2015, from http://biodivcanada.ca/default.asp?lang=En&n=9B5793F6-1&printfullpage=true

Government of Canada. (2015b). Archived - Provincial and Territorial Statistics on Canada's Fish and Seafood Exports in 2014. Retrieved from http://news.gc.ca/web/article-en.do?mthd=tp&crtr.page=1&nid=949719

Grant-, S. M., Hill, S. L., Trathan, P. N., & Murphy, E. J. (2013). Review Ecosystem services of the Southern Ocean: trade-offs in decision-making. Antarctic Science & Antarctic Science, 25(5), 603–617. http://doi.org/10.1017/S0954102013000308

Gutiérrez, N. L., Valencia, S. R., Branch, T. A., Agnew, D. J., Baum, J. K., Bianchi, P. L., … Williams, N. E. (2012). Eco-label conveys reliable information on fish stock health to seafood consumers. PLoS ONE, 7. http://doi.org/10.1371/journal.pone.0043765

Hutchings, J., Cote, I., Dodson, J., Fleming, I., Jennings, S., Mantua, N., … VanderZwaag, D. (2012). Sustaining Canadian marine biodiversity: responding to the challenges posed by climate change, fisheries, and aquaculture. Expert panel report prepared for the Royal Society of Canada. Ottawa, Canada.

Jacquet, J., Hocevar, J., Lai, S., Majluf, P., Pelletier, N., Pitcher, T., … Pauly, D. (2009). Conserving wild fish in a sea of market-based efforts. Oryx, 44(01), 45. http://doi.org/10.1017/S0030605309990470

Kalfagianni, A., & Pattberg, P. (2013a). Fishing in muddy waters: Exploring the conditions for effective governance of fisheries and aquaculture. Marine

Policy, 38, 124–132. http://doi.org/10.1016/j.marpol.2012.05.028
Kalfagianni, A., & Pattberg, P. (2013b). Participation and inclusiveness in private rule-setting organizations: does it matter for effectiveness? Innovation: The European Journal of Social Science Research, 26(January 2015), 231–250. http://doi.org/10.1080/13511610.2013.771888
Konefal, J. (2012). Environmental Movements, Market-Based Approaches, and Neoliberalization: A Case Study of the Sustainable Seafood Movement. Organization & Environment, 26, 1086026612467982–. http://doi.org/10.1177/1086026612467982
Kwon, N. (2012). Gone fishin'. Canadian Grocer, 126(6), 43.
Le Vallee, J., & Howard, A. (2013). Strengthening Canada's Commercial Fisheries and Aquaculture: From Fin to Fork.
Lee, D., & Connelly J. (2006). Global Aquaculture Alliance on Best Aquaculture Practices: An Industry Prepares for Sustainable Growth. Sustainable Development Law & Policy, 7(1), 60–62.
Mc Clenachan, L., Neal, B. P., Al-Abdulrazzak, D., Witkin, T., Fisher, K., & Kittinger, J. N. (2014). Do community supported fisheries (CSFs) improve sustainability? Fisheries Research, 157, 62–69. http://doi.org/10.1016/j.fishres.2014.03.016
McClenachan, L., Dissanayake, S., & Chen, X. (n.d.). Fair trade fish: Consumer support for broader seafood sustainability. Fish and Fisheries.
McDevitt-Irwin, J. M., Fuller, S. D., Grant, C., & Baum, J. K. (2015). Missing the safety net: evidence for inconsistent and insufficient management of at-risk marine fishes in Canada. Canadian Journal of Fisheries and Aquatic Sciences, 1–13. http://doi.org/10.1139/cjfas-2015-0030
Office of the Auditor General of Canada. (2005). Report to the Commissioner of the Environment and Sustainable Development to the House of Commons.
Office of the Auditor General of Canada. (2012). 2012 Fall Report of the Commissioner of the Environment and Sustainable Development.
Parlee, C. E., & Wiber, M. G. (2011). Who is governing food systems? Power and legal pluralism in lobster traceability. Journal of Legal Pluralism and Unofficial Law, 64(October 2014), 121–148. http://doi.org/10.1080/07329113.2011.10756672
Ponte, S. (2012). The Marine Stewardship Council (MSC) and the Making of a Market for "Sustainable Fish." Journal of Agrarian Change, 12(2-3), 300–315. http://doi.org/10.1111/j.1471-0366.2011.00345.x
Potts, T., & Haward, M. (2007). International trade, eco-labelling, and sustainable fisheries - Recent issues, concepts and practices. Environment, Development and Sustainability. http://doi.org/10.1007/s10668-005-9006-3
Rice, J., Bradford, M. J., Clarke, K. D., Koops, M. A., Randall, R. G., & Wysocki, R. (2015). The Science Framework for Implementing the Fisheries Protection Provisions of Canada's Fisheries Act. Fisheries, 40(6), 268–275. http://doi.org/10.1080/03632415.2015.1038381
Rose, G. A., & Rowe, S. (2015). Northern cod comeback. Canadian Journal of Fisheries and Aquatic Sciences, 72, 1789–1798. http://doi.org/10.1139/cjfas-2015-0346
SeaChoice. (2015). State of the Canadian Seafood Landscape. Vancouver, Canada.
Sheriff, N. (2016). Community-Supported Fisheries Seek Growth Without Throwing Their Brands Overboard. Impact Alpha, Feb 2. Retrieved from http://impactalpha.com/community-supported-fisheries-seek-growth-without-throwing-their-brands-overboard/
Short, K. (2016). Implications from Participatory Development Theory for Community Supported Fisheries. Dalhousie University.
Tlusty, M. F., & Tausig, H. (2014). Reviewing GAA-BAP shrimp farm data to determine whether certification lessens environmental impacts. Reviews in Aquaculture, n/a–n/a. http://doi.org/10.1111/raq.12056
Trivelpiece, W. Z., Hinke, J. T., Miller, A. K., Reiss, C. S., Trivelpiece, S. G., & Watters, G. M. (2011). Variability in krill biomass links harvesting and climate warming to penguin population changes in Antarctica. Proceedings of the National Academy of Sciences, 108(18), 7625–7628. http://doi.org/10.1073/pnas.1016560108
Vandergeest, P., & Unno, A. (2012). A new extraterritoriality? Aquaculture certification, sovereignty, and empire. Political Geography, 31(6), 358–367. http://doi.org/10.1016/j.polgeo.2012.05.005
Vellema, S., & Van Wijk, J. (2015). Partnerships intervening in global food chains: The emergence of co-creation in standard-setting and certification. Journal of Cleaner Production, 107, 105–113. http://doi.org/10.1016/j.jclepro.2014.03.090
Wappel, T. (2005). Northern Cod: A failure of Canadian fisheries management. Ottawa, Canada. Retrieved from http://www.parl.gc.ca/content/hoc/Committee/381/FOPO/Reports/RP2144982/foporp04/foporp04_printed-e.pdf
Ward, T. J. (2008). Barriers to biodiversity conservation in marine fishery certification. Fish and Fisheries, 9(2), 169–177. http://doi.org/10.1111/j.1467-2979.2008.00277.x
Wells, P. G. (2013). Canadian aquatic science and environmental legislation under threat. Marine Pollution Bulletin, 69(1-2), 1–2. http://doi.org/10.1016/j.marpolbul.2013.01.035
Worm, B., & Myers, R. A. (2003). Meta-analysis of cod-shrimp interactions reveals top-down control in oceanic food webs. Ecology, 84(1), 162–173. http://doi.org/10.1890/0012-9658(2003)084[0162:MAOCSI]2.0.CO;2

7

Creating synergies between Voluntary Certification Standards (VCS) and regulatory frameworks: Case studies from the FairWild Standard

Bryony Morgan and Anastasiya Timoshyna

7 Creating synergies between Voluntary Certification Standards (VCS) and regulatory frameworks: Case studies from the FairWild Standard

Bryony Morgan[1] *and Anastasiya Timoshyna*[2]

Abstract

The FairWild Standard (FWS, www.fairwild.org/) provides guidance on sustainable collection and fair trade of wild-harvested plants, fungi and lichen. Created through a multi-stakeholder consultation process, it forms the basis of a third-party audited certification scheme, with over 20 companies currently involved in production and trade of certified ingredients. Beyond certification, FWS is influencing corporate policy and practice related to biodiversity conservation and sustainable livelihoods, and is aiding implementation of international policy (CBD, CITES) and development of national and local resource management systems.

Implementation of the FWS as a Voluntary Certification Standard (VCS) involves an interplay between the voluntary regulation of industry practice and the regulatory frameworks already in place. Wild harvesting takes place in contexts with varying governance, legislation, institutional settings and ownership. Harvest may take place on public or community-owned lands, as well as on private land. The regulatory frameworks (e.g. management and permit systems) are similarly diverse. This paper explores different scenarios in which the FWS has been implemented, and the resulting interplay between the VCS and the regulatory framework. Examples presented include wild-harvesting projects from the certification scheme taking place in different scenarios, ranging from long-term exclusive leases for harvesting on public land, to annual permit systems for harvesting from public forests, and harvesting on land under private or community ownership. Experience is also reviewed of using the FWS in projects involving reform of the legislative/ regulatory framework for wild plant collection, engaging industry and community stakeholders to develop effective governance systems for wild resources.

Finally, the paper draws together lessons learned, comparing actual experience with assumptions inherent in the FWS, and provides some reflections on potential future approaches.

Key words: Non-timber forest products; medicinal plants; certification; sustainability standards; wild harvest; regulation

1 Executive Officer, FairWild Foundation Secretariat; Medicinal Plants Programme Officer, TRAFFIC International, The David Attenborough Building, Pembroke Street, Cambridge, UK, secretariat@fairwild.org.

2 Programme Leader – Medicinal Plants, and Co-chair, IUCN-SSC Medicinal Plant Specialist Group, TRAFFIC International, The David Attenborough Building, Pembroke Street, Cambridge, UK, anastasiya.timoshyna@traffic.org.

Introduction

Wild plants, fungi, and lichen are a significant source of ingredients used in industries producing pharmaceuticals, cosmetics and foods, as well as in local medicines and other products supporting health and livelihoods. Such wild resources are often referred to collectively as non-timber forest products (NTFPs) or non-wood forest products (NWFP), but may come from many types of ecosystems and habitats in addition to forests.

Trade chains for these species are typically long and complex, making it difficult to link products to the source of supply. End users may be unaware of wild collection being the source of ingredients, or even the country of origin. As much of the trade is unreported and/or unregulated, estimating the scale of wild harvest is difficult. Species are traded in different forms (raw, processed), and are often aggregated in export codes, complexities that make comprehensive trade monitoring or separation by species or origin (wild or cultivated stocks) close to impossible (Shanley, Pierce, Laird, López Binnqüist, & Guariguata, 2015). However, their economic importance is clear. According to the Food and Agriculture Organization of the United Nations (FAO) (2015), the global value of non-wood forest products (NWFP) of plant and animal origin was estimated as USD20.6 billion in 2010. This is likely a substantial underestimate as NWFPs are rarely captured in national statistics (Shackleton & Pandey, 2014). Estimates of the scale of trade are dependent on customs codes, which can be challenging to include comprehensively in trade estimates given the variety of species involved and difference between how they are captured in national reporting. In a recent International Trade Centre (ITC)-TRAFFIC study (2016), the export of medicinal and aromatic plants (both wild-collected and cultivated) from China was estimated at over 1.3 billion kg, with a reported Customs value of over USD5 billion. The global reported trade in plants for medicinal purposes alone (customs code HS1211, a subset of those analysed in the ITC study) was valued at over USD3.4 billion in 2014 (United Nations, 2016), and is increasing.

Pressures on wild resources can pose major ecological and socio-economic challenges. The conservation status of medicinal plants is poorly known (Secretariat of the Convention on Biological Diversity, 2010), but for plants globally, it is estimated that one in five plant species is threatened with extinction in the wild (Brummitt, et al., 2015). Plants have been used by humans over millennia and, in that time, have been pretty resistant to collection pressures. However, the existing and growing market demand creates an important driver of increased harvesting pressure, for both long-traded species and species that were not traded internationally in the past (e.g. for superfoods or cosmetics).

NTFPs make an important contribution to rural livelihoods, as well as having cultural value. Harvesters are often among the poorest and most vulnerable members of society. Wild plants can provide a supplementary source of income for households, providing seasonal work for villagers in rural areas. There is a need to improve the contribution these resources make to livelihoods, increasing both the amount and the security of income from the trade, and supporting value addition locally.

Regulating wild harvest and trade

Use of wild resources can be controlled through regulatory systems at subnational, national and international levels, the effectiveness of which affects conservation outcomes for species and habitats, as well as their short and long-term contribution to rural livelihoods.

A wide range of wild-harvested plants, fungi and lichen are used and traded, domestically and internationally. It is estimated that 60,000 plant species are used for medicinal purposes globally (Schippmann, Leaman, & Cunningham, 2006).

A complete list of all plants used in medicine does not exist, but at least 30,000 species of plants with a use documented in traditional systems and national pharmacopoeias are included in the Global Checklist of Medicinal Plants[1]. Plants used in traditional medicine are not only important in local health care, many are important in international trade based on broader commercial use and value (an estimated 4,000-6,000 species according to Iqbal (1993)).

Traditionally an economic activity with little or no formal regulation, over the past few decades the harvest and trade of NTFPs has become much better incorporated into subnational and national legislation, e.g. through the expansion of forestry law. Use and trade are also regulated at international levels. However, there is generally less control of legality and sustainability as compared with the trade in timber species, for example, and a lack of management planning for the majority of species harvested (Laird, Wynberg, & McLain, 2009). At the subnational level, customary law and traditional use systems for the management of wild resources remain important in governing use through less formal controls. However, while they often prove very effective in managing harvest at local levels, without formal legal status they may be overwhelmed by sudden increases in demand. Traditional systems are also vulnerable to loss of knowledge and weakening of local institutions and customary management and controls through the high levels of rural-urban migration occurring in many parts of the world.

An important driver of new and reformed legislation is the implementation of multilateral environmental agreements (MEAs), as commitments made under e.g. the Convention on International Trade in Endangered Species of Fauna and Flora (CITES) and the Convention on Biological Diversity (CBD) are translated into national law and regulations. For many plant species, controls under CITES provide the major (or only) legal instrument to address the sustainability and legality of international trade. Trade in species listed in CITES Appendix I is generally not allowed; trade in species listed in Appendix II requires determination by authorities that trade is legal and sustainable (a Non-detriment Finding (NDF)[2]) before it is permitted.

Commitments under the CBD affect the use and trade of wild plant resources in a variety of ways, reflecting the Convention's multiple objectives of biodiversity conservation, sustainable use and benefit-sharing. A particularly active area of legislation development at present is arising from implementation of the CBD's Nagoya Protocol on Access and Benefit Sharing (ABS) (UNEP, 2010). The CBD's Global Strategy for Plant Conservation provides a target-oriented framework, which was translated into the national context by some countries through national strategies for plant conservation (e.g. Mexico, China) or regional-level commitments (e.g. the European Strategy for Plant Conservation). Another important international framework for conservation and sustainable use of medicinal plants is provided by the Guidelines on Conservation of Medicinal Plants (WHO, IUCN & WWF, 1993). In its Traditional Medicine Strategy (2013), the World Health Organization (WHO) prioritizes finalization of an update of this document, which will provide important guidance to members.

1 An output of the Medicinal and Aromatic Plant Resources of the World (MAPROW) database, supported by the IUCN-SSC Medicinal Plant Specialist Group.

1 An NDF decision is a science-based assessment that allowing export of a species will not be detrimental to its survival. Guidance on NDFs is provided through CITES Resolution Conf. 16.7, although each Party may decide its own methodology. The German CITES Scientific Authority (Bundesamt für Naturschutz, BfN), TRAFFIC and WWF Germany have developed a nine-steps guidance for NDFs for perennial plants (Leaman & Oldfield, 2014). These nine steps include evaluating both conservation concerns and management measures that may be in place to mitigate identified risks.

At the national level, control of use and trade is often characterized by a constellation of overlapping legislative requirements, reflecting the responsibilities and objectives of different ministries, as well as commitments made under international agreements. Wild plants typically have a low profile (their economic importance, contribution to rural livelihoods, health-care systems, and conservation value being under recognized), and there is often limited coherence to the applicable legislative and regulatory framework, and a lack of resources invested into coordinating policy approaches.

Users of wild plant resources may hence find themselves navigating a confusing array of:

- **Laws establishing access and use regimes** for NTFPs, including e.g. management and harvest permit systems. Often part of forestry legislation; in some cases regulations cover the management of individual species (e.g. South Africa's Biodiversity Management Plan (BMP) for *Pelargonium sidoides* (2013)).
- **Laws protecting species and habitats** e.g. protected areas legislation, national "red lists" of protected species (e.g. EU Habitats Directive).
- **Laws aimed at consumer protection**, regulating aspects of quality, safety and authenticity. For example, the norms of organic agriculture standards are regulated through legislation in major markets. The European Directive on Traditional Herbal Medicinal Products (THMPD) regulates the marketing of herbal medicinal products on the basis of efficacy and safety in the EU Member States. In China, processes of formulation and production of traditional Chinese medicine (TCM) are regulated throughout.
- **Laws establishing intellectual property regimes** (access to and use of genetic / biological resources) e.g. ABS laws responding to the CBD's Nagoya Protocol.

Where regulations on use and trade of wild plants are in place, they are often overly general, lacking clarity on governmental responsibilities for implementation and enforcement, as well as having a poor scientific basis. If developed without stakeholder consultation and reference to existing customary laws and institutions, as well as industry practice, the broader support necessary for implementation may be lacking. Implementation of policies and laws that are in place is often weak. Key aspects, such as permit systems, may exist only on paper. As with any other area of policy implementation, enforcement is often recognized as a bottleneck to effective implementation of even well-designed regulations.

There is evidence that poorly designed and / or implemented regulations can exacerbate levels of unsustainable harvesting, and potentially result in increased levels of inequity in resource access (Wynberg, Laird, Van Niekerk, & Kozanayi, 2015) (Mulliken & Crofton, 2008). New incentives and systems can be established that undermine effective local institutions and traditional controls on access and use, taking ownership away from communities. In some cases, resource management and permit systems designed for timber have been extended to NTFPs without consideration of feasibility and appropriateness and whether sufficient resources are available for implementation (Shanley, Pierce, Laird, López Binnqüist, & Guariguata, 2015). The result can be a highly bureaucratic and ineffective system, creating new bottlenecks, opportunities for corruption and incentives to by-pass the law.

The FairWild Standard and wild plant resources use and trade

With the aim to support improved governance and management of wild plants in trade, the FairWild Standard (FWS) was created through the combined efforts of a number of organizations[1] concerned with conservation and development issues related to use of wild

resources, as well as the involvement of industry partners. Standard development began in 2004, and legal registration of the FairWild Foundation (FWF), as the institutional vehicle to manage the Standard, took place in 2008.

Developed through a multi-stakeholder consultation process, the FWS provides best practice guidelines for sustainable harvest and equitable trade of wild plants, fungi and lichen. Version 2.0 (FairWild Foundation, 2010a) comprehensively covers social, environmental and economic issues. It is designed to provide a bridge between high-level conservation agreements, and local conservation and development needs, allowing verification of sustainable practices. In implementation, a distinction is made between species determined to be at low, medium or high risk of unsustainable collection, with more stringent management and monitoring requirements in place for the latter. This classification is made through an assessment of risk factors for overharvesting, taking into account situations where such factors are unknown (IUCN/SSC Medicinal Plant Specialist Group & FairWild Foundation, 2014).

Recognizing the difficulties in establishing effective regulations, FWS was intended to play an important role in managing the sustainability of resource harvest and trade through voluntary compliance mechanisms, as well as supporting implementation of existing laws (Fig 1). As outlined in the FWS (FairWild Foundation, 2010a)(p. 2), Principles and Criteria can be used to:

- provide guidance for resource management
- support implementation of existing regulatory and policy frameworks
- serve as a basis for internal monitoring and reporting (voluntary codes of practice)
- support the FairWild system of certification.

Implementation of FWS as a VCS framework has been a major focus of FWF's efforts in recent years. The certification scheme allows verification of sustainable harvest and fair trade of wild plant ingredients – typically not addressed by other standard systems – and enables communication of sustainable sourcing to consumers through FairWild labelling. Under the FairWild certification system, now operational for more than five years, 24 species have been certified in eight source countries, and over 20 products are now sold on the market labelled as "FairWild". More than 20 pioneering companies are participating across the value chains. The scheme is also providing improved incomes to local communities involved in harvesting through its fair-trade approach to more than 1,000 collectors, including the Samburu people in northern Kenya tapping Frankincense (*Boswellia* and

Box 1. Principles of the FairWild Standard

1. Maintaining wild plant resources
2. Preventing negative environmental impacts
3. Complying with laws, regulations, and agreements
4. Respecting customary rights and benefit sharing
5. Promoting fair contractual relationships between operators and collectors
6. Limiting participation of children in wild collection activities
7. Ensuring benefits for collectors and their communities
8. Ensuring fair working conditions for all workers of the FairWild collection operations
9. Applying responsible management practices
10. Applying responsible business practices
11. Promoting FairWild buyer commitment

From FairWild Foundation (2010a)

1 Organizations involved include TRAFFIC, WWF, IUCN, the German Government's Federal Agency for Nature Conservation (BfN), the Swiss Import Promotion Programme (SIPPO), Institute for Marketecology (IMO), and Forum Essenzia e.V. For history, see (Kathe, 2011) (Morgan & Timoshyna, 2010).

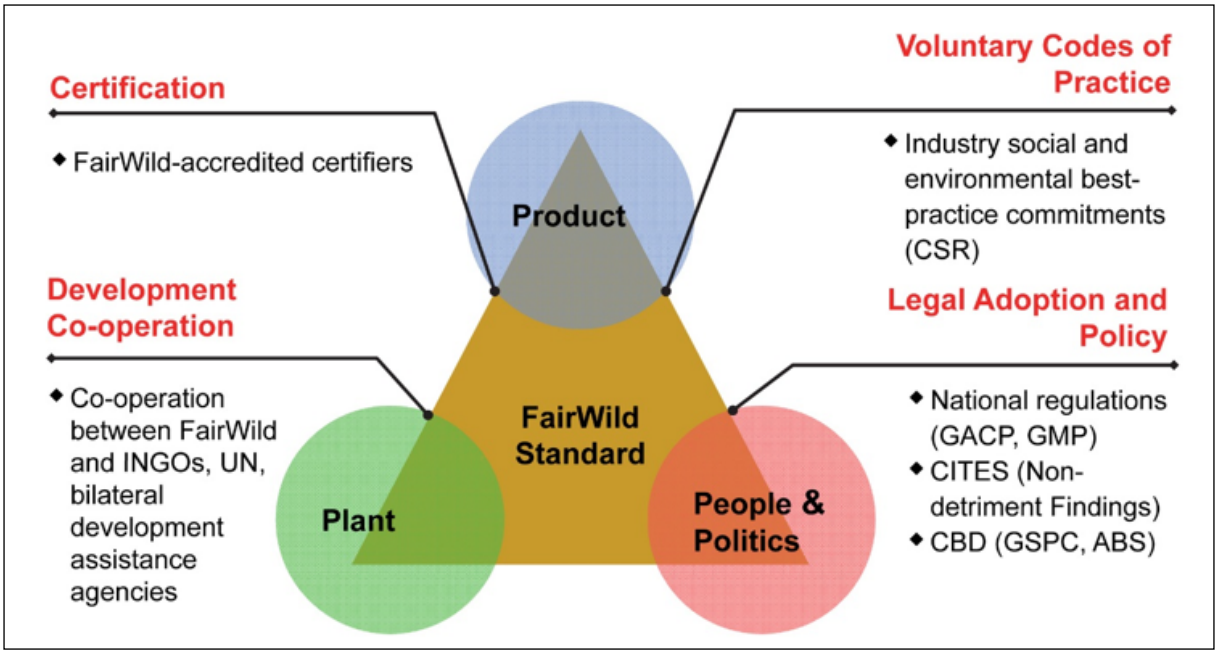


Fig 1. Implementation approaches for the FairWild Standard: Version 2.0. Figure extracted from FairWild Foundation (2010a), p. 2.

Commiphora spp.) resin, community groups harvesting Ayurveda ingredients in sacred groves in India's Western Ghats, Liquorice (*Glycyrrhiza* spp.) harvesters in Kazakhstan, Spain and Georgia, and Roma plant collectors in Central/Eastern Europe.

Beyond certification, some companies are using the FWS as a basis for responsible sourcing through their internal policies and sourcing practices. The FWS is also being used in a range of contexts in conservation / development projects aiming to improve the status of wild plants in trade and benefits arising from their use.

FWS and regulatory frameworks

The FWS comprises ten sustainability principles for wild plant collection operations and one for buyers of ingredients (Box 1). The principles are global and normative, i.e. not aligned to any specific national laws. The FWS is a private standard, the content of which is not subject to regulation (as opposed to e.g. organic standards, which are regulated in major markets). However, compliance with laws, regulations and agreements is a core feature. In addition to compliance with requirements relevant to wild collection and trade (Principle 3), references to legislative and regulatory frameworks is made throughout other parts of the FWS, e.g. under social and economic criteria on labour rights, health and safety, minimum wage, etc. Compliance is not limited to those rules established by the state. Principle 4 includes respecting traditional uses, practices and customary rights, whether or not these are enshrined in national law.

Hence, in FairWild certification there are multiple areas of potential interplay between the requirements of the VCS and those of the regulatory context. To enable sustainable wild collection, an important aspect is the establishment of access and use rights for harvest of the target species. This is particularly important for controlling resource use in areas under public or community ownership, which may have multiple resource users. The FWS recognizes that a collection operation may not have full control over resource use in the collection area, hence there are multiple

references to the roles and responsibilities of other parties, and to the overall regulatory system in place (see Box 2 for selected requirements of Control Points (CPs) of the FWS performance indicators (FairWild Foundation, 2010b)).

The regulatory system controlling resource use by multiple users may be established either by the state, or through customary use systems and cooperation. The "norm" under the FWS is that either a functioning regulatory system or an equivalent adequate system to ensure the integrity of the collection area is in place (CP 1.3d, score 2). In situations where no functioning regulatory system is in place, the operation may still be certifiable, depending on the likelihood that unsustainable levels of harvest and other damaging activities are taking place. A situation where more than one company / community collects without management agreements is considered as higher risk (FairWild Foundation, 2010b)(Table 2, p. 4). In situations where there are no conflicts or potential threats to collection activities, certification can still be granted (CP 1.3d, score 1). Depending on the situation and species concerned, a high level of scrutiny in the audit may be required, together with efforts of the collection operation to gather evidence of overall harvest volumes.

In places where a regulatory system is not functioning, where there are multiple resource users or conflicts over use, or where there is evidence of decline in the population status of target species, the collection operation may not be certifiable. This would not necessarily be due to any fault of the applicant company.

Examples of VCS-regulatory interplays in practice

Certification

As illustrated in Figure 1, the FWS may be implemented in different regulatory contexts. A review of the wild collection operations participating in the certification scheme demonstrates the wide degree of variation that is found in practice. In India's Western Ghats,

Box 2: Selected "norm" requirements of FWS on laws, regulations and agreements

Principle 3: Complying with laws, regulations and agreements

Collection and management activities shall be carried out under legitimate tenure arrangements and comply with relevant laws, regulations and agreements.

3.1 Tenure, management authority and use rights: Collectors and managers have clear and recognized right and authority to use and manage the target resources

- **CP 3.1b** Ownership, tenure or user right details are known and confirmed over a time-scale that is long enough to fulfil the stated resource management objectives
- **CP 1.3d** Functioning regulatory system protecting the management area from unauthorised activities: in place OR collection management operation demonstrates equivalent adequate system to ensure collection area's integrity
- **CP 3.1e** The collection operation holds a valid collection permit / agreement for all collected plants. If no system of permit exists, it can be confirmed that collection management operation has the right to use and manage the collected resources.

3.1 Laws, regulations and administrative requirements: Collection and management of target resources comply with all international agreements and with national and local laws, regulations and administrative requirements, including those related to protected species and area.

- **CP 3.2b** The management plan, procedures, work instructions and contracts meet relevant legal, regulatory, and administrative requirements regarding the collection management and export, including export permits.

FairWild Foundation (2010b)

certified wild collection of *Terminalia chebula* and *Terminalia bellirica* takes place on a mix of privately owned lands, in sacred groves and within protected areas. Implementation of FairWild certification has required demonstration of compliance with a wide range of laws and regulations, not least India's ABS regulations, which came into effect during the first year of certification. The project is now highlighted as one of the few available examples in practice where benefit-sharing agreements are being developed (Sarnaik, 2016). According to Sarnaik and Hiremath (2014), the process of going through certification also helped resolve lack of clarity about tenure and access and use rights. The certification gave an incentive for the *Mahadev Koli* tribal people of Bhimashankar Wildlife Sanctuary to work through legal processes to clarify land records and officially claim ownership of the *T. chebula* trees on their land, thereby opening economic opportunities domestically, as well as the potential international trade in certified ingredients (Sarnaik & Hiremath, 2014). By the end of 2015, claims over some 1,300 trees of *T. chebula* had been legally registered (Sarnaik, 2016).

In Kazakhstan, Hungary, Poland and Bulgaria, collection under the certification scheme is mainly occurring on publicly owned land. However, the situation regarding regulation of harvest varies extensively. In Kazakhstan, long-term leases are in place for the Liquorice harvesting operation, granting exclusive land-use rights for a period of almost 50 years. Due to the remote nature of the project, at present there appears to be very little risk that other resource users will attempt to harvest. In Hungary, collection permits are required; these are issued based on results of resource assessments carried out by forest management agencies, and good access to data and cooperation with the authorities is reported. In Bulgaria, the system is more sophisticated, but also rather

bureaucratic. Nearly all species require permits for commercial harvesting, with only a few common species exempted, such as Dog Rose (*Rosa canina*) and Nettle (*Urtica dioica*). Forest management authorities carry out resource assessments, but the results are usually not available to companies. Permits for commercial harvesting are issued annually, or for even a shorter period, and are limited to defined collection areas; permits for resource use in a particular area usually cannot be obtained on a long-term basis. Permits can be relatively expensive, and have to be paid for in advance. In Poland, inventories on state-owned land are carried out only for timber, and no collection permits are required for NTFPs.

In implementing FairWild certification, collection operations must demonstrate compliance with the regulatory framework affecting resource use as well as compliance with national labour laws, etc. Verification of this legal compliance may however be difficult in practice. FairWild certification requires an onsite annual audit including office-based checks of relevant documentation; inspection of facilities, work processes and records; and field visits to collection sites including observation of sustainable harvest management and interviews with harvesters and other relevant stakeholders. Methods are outlined in the FairWild Standard Operational Procedures: Audit and Certification (Version 4/2015) (FairWild Foundation, 2015). However, a comprehensive overview of existing laws and policies is rarely available to guide this process, and there is necessarily a reliance on information disclosure by operators and other parties interviewed during the audit. At present there are only one or two FairWild-certified operations per country, hence audits are mainly carried out by international inspectors, who are not necessarily familiar with the details of the national legislation (and indeed, cannot be expected to be expert in all aspects). As the scheme develops, and more national inspectors are trained, increased local knowledge should be available. In some situations, use of a multi-disciplinary / multi-cultural team may also be appropriate, and audit and certification methodologies will evolve over time. However, refined approaches and tools for establishing legal compliance of the wild collection operations would potentially be useful in addition. Chen, Timoshyna and Oldfield (2015) proposed learning from the experience of the WWF Global Forest & Trade Network (GFTN)-TRAFFIC Timber Legality Framework (WWF, 2009)[1], and potentially adapting this framework for NTFPs and other wild-harvested plants to support the implementation of the FWS and certification scheme.

Certification and beyond

While certification has proven a useful mechanism to gain industry attention and drive action on sustainable sourcing of wild ingredients, it is not the only approach used in practice. The FWS has also informed development of resource management systems at local, regional and national levels, and supported other voluntary actions on sustainable sourcing by industry (where certification is not a goal due to a lack of market demand, cost considerations or other factors). Initiatives experimenting with the application of FWS principles in different scenarios have typically involved partnerships of industry, civil society and government actors, with the voluntary leadership of industry actors an important factor in achieving success. Analysis of existing policy and regulation with the aim of eventual reform has also been an important component of such projects. For example, the project "Engaging China's Private Sector in sustainable management of medicinal plants – the multiplier effect (EGP-MAPs)" financed under the EU-China Environmental

1 This framework enables governments and companies to access and understand relevant aspects of laws, regulations, administrative circulars and contractual obligations that affect forestry operations, timber processing and trade. Applied to a specific country the framework is known as a National Legality Framework. The framework includes nine principles encompassing the entire supply chain, together with specific principles on environment, conservation and social legislation.

Governance Programme (2013-2015) aimed to improve sustainability of the Traditional Chinese Medicine (TCM) sector in China through an approach based on the FWS, linking manufacturers and traders in voluntary partnerships for sustainable production and trade, as well as raising government awareness and capacity for the support of sustainable management of wild plants (Timoshyna, Chenyang, Zhang, Morgan, & Tsipidis, 2015). In this case, support for introduction of FairWild certification was also an explicit project goal, and the project involved exploring the regulatory landscape for international VCS themselves, as in China government oversight and approval is needed for international standard schemes to operate (an unusual situation, in the global context).

In addition to piloting sustainable sourcing in practice, the EGP-MAPs project developed a policy report (TRAFFIC, 2015a) with recommendations and models for replicating the approach. The report recognizes the multiple agencies responsible for management of the medicinal plant resources, and directs recommendations to four distinct stakeholder groups: legislative and law enforcement agencies (focus on strengthening management and control of resources), specialized government agencies for enabling and implementing policies (focus on encouragement and promotion of sustainable use of medicinal plant resources and the set-up of incentive measures), research institutions, and companies and industry associations. The recommendations were developed with the input of industry and civil society stakeholders involved in the project, and include development of laws and regulations that better support sustainable use and the implementation of best practices, including applicable international VCS. The report also drew on experience from an earlier project financed under the EU-China Biodiversity Programme (ECBP). This pilot project established sustainable harvesting of

Southern Schisandra (*Schisandra spenanthera*) and ultimately supported development of "The Notice of Traditional Chinese Medicine sustainable plant management in Ningshan County, Shaanxi Province", a first county-level regulation of harvest, management, trade of wild medicinal plants in this part of China (a Global 200 Ecoregion, and important habitat for the Giant Panda, *Ailuropoda melanoleuca*) (TRAFFIC, 2015c).

Although civil society and industry actors are more typically active in promoting and implementing VCS, government agencies are also seeing the value of using VCS to support the implementation of laws and regulations and achievement of policy goals. For example, in Morocco, support to the pilot introduction of FairWild certification was built into a United Nations Development Programme - Global Environment Facility project executed by the High Commission for Water and Forests and Fight against Desertification (HCEFLCD), with government agencies and extension services actively engaging activities (Morgan & Ottens, 2013). The *Kosovo National Strategy on Non-wood forest products (NWFP) Sector 2014 – 2020*, developed with the support of Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, recognizes the value of the FWS in developing and applying laws regulating the collection of NWFP, and also includes technical support and facilitation of access by resource users to certification schemes such as FairWild under one of its three implementation pillars. Through the strategy, a holistic approach is being taken through the establishment of a new legislative and regulatory framework, as well as support for sector development and value addition (TRAFFIC, 2015b).

In other cases, this approach has focused on developing a resource management plan on a broader species/area basis, with careful stakeholder engagement to gain the voluntary commitment and endorsement of industry groups sourcing from the site. This has been trialled in Bosnia and Herzegovina, including a pilot with Bear Garlic (*Allium ursinum*) that also supported development of provincial regulations on NTFP use (Timoshyna, 2010), (TRAFFIC, 2015d), and also in South Africa/Lesotho, with the development of the *Pelargonium sidoides* BMP (Newton & Timoshyna, 2012). The possibility of certification to support implementation of such management plans has been raised, with industry and stakeholder interest apparent. While efforts are often NGO/government led, companies are also recognizing the value of a coordinated approach. Enquiries to the FairWild Foundation have included whether all companies collecting from the same area could be certified together, as part of a broader initiative for a region.

Looking into the future, there are numerous other opportunities where the FWS may be used to support the implementation of laws, regulations and government policy. For example, in Viet Nam (where the FWS is currently being used in community-based resource management), there is a possibility that the FWS can support on-the-ground implementation of Viet Nam's national target of all traditional medicine companies implementing Good Agricultural and Collection Practices (GACP) by 2020. While most certification pilots to date have been with lower-risk species (which are usually without legal protection), FWS certification can also support management of threatened and protected species. Certification of CITES-listed species would make an interesting and useful pilot, complementing existing CITES processes, such as NDFs. FWS could also be used as a reference framework to verify compliance with public procurement policies on sustainable and legal sourcing, such as are increasingly being used to promote the use of legal and sustainable timber (Brack, 2014) and are starting to be applied in other sectors.

Discussion

The FWS has proved to be a flexible tool that can be implemented in many different regulatory contexts – as revealed by the range of systems in place for operators currently participating in the certification scheme. Implementation is more straightforward in situations where tenure and use rights are clear: there is private property / exclusive access; or for common access resources, a functioning regulatory system controls access by multiple users. However, such a system is not essential for certification. FairWild's risk-based approach also allows for verification of sustainable practices in situations where a functioning system is absent, but it is determined there is low risk of conflict between user groups or damage to the resource and its habitat. To a certain extent, the certification can provide structure and assurance in situations where regulatory systems are absent or dysfunctional. However, this requires careful monitoring through the annual audit, as these situations can change quickly.

In reviewing cases from the certification scheme, we reflect that, so far, site selection has tended to favour sites with clear tenure, and either private ownership or functioning regulatory systems controlling access and use, or where resources are relatively abundant and there are few conflicts with other users (e.g. in Central Europe). Site selection is also often influenced by the need for collection to be certified organic, which is often easier to implement on privately owned land. In India, although a range of stakeholders benefit from the project, and the achievements of the project team in a complex social setting should not be underestimated, site selection has favoured inclusion of privately owned lands[1], and sacred groves where a fairly well-defined management structure exists through the local temple. Enquiries from potential certification scheme applicants in USA also favoured pilots of FWS on private land, as they anticipated this being more straightforward than on public land.

A bias towards selection of "easier" sites in the certification is perhaps understandable – certification projects are to a large extent self-selected by industry, and it is in their interest to choose those with higher likelihood of success. However, in the broader implementation of the FWS, there are a number of challenging projects with complex user-group situations. Certification in situations where there are multiple user groups is difficult, but also possible. The FWS and certification scheme can provide a structure and incentive for the collection operation to work through and resolve conflicts with other users. As discussed at a recent workshop "*FairWild Standard and certification scheme for sustainable wild collection: from audit to market*" held at the 2016 BioFach Organic Trade Fair in Nuremberg, Germany, incorporating the activities of other or illegal collection into resource management plans is a concern for FairWild certification scheme participants (FairWild Foundation, 2016). Participants called for more cooperation and support from government agencies; also their potential involvement in auditing and assurance processes. Ultimately, participation in VCS such as FairWild may help to build support for the design of effective regulatory systems that enable access and use by multiple users.

To support implementation and verification of FWS requirements on legal compliance in practice, there is also a need for companies and auditors to have access to clear overviews of existing laws, policies, and norms, potentially through adapting the existing WWF GFTN-TRAFFIC Timber Legality Framework to NTFPs. Such assurance will become increasingly important; as countries move to crack down on wildlife crime, industry users are coming under pressure to demonstrate legality of wildlife products in the country of origin. For example,

1 Although as noted by Sarnaik and Hirenath (2014), conservation on private lands has always been one of the project's objectives.

the US Lacey Act in its 2008 amendments makes it illegal for importers to source wildlife products that were illegally obtained in their country of origin. It includes all plant products in its scope, although only the trade in timber products is presently being monitored in practice.

Verification of sustainable collection according to the FWS can also help to reveal poorly designed and functioning regulatory systems, highlighting key issues for further discussion and potential improvement. A frequent complaint of resource users is of bureaucratic and ineffective regulatory systems; for example, permits that are difficult to obtain, and not based on scientific methods and accurate information. The certification scheme is helping to convene a group of actors who may ultimately call for changes in legislation and regulation, as well as improved implementation mechanisms. It provides a platform for experience exchange, learning from other projects globally. It is too soon to see any regulatory changes resulting as a direct outcome of a FairWild certification project (as, for example, in China, where application of the FWS in non-certification approaches under the ECBP project contributed to development of local legislation), but this may be possible in the future.

The FWS can therefore support efforts to develop effective regulation of sustainable wild harvest. Voluntary approaches can play a role in making space for experimentation in less-than-optimal situations, establishing new norms, and perhaps ultimately opening space for well designed and implemented regulation with the support of resource users. As highlighted in conversations at the annual Global Sustainability Standards Conferences of the ISEAL Alliance[1],

1 The ISEAL Alliance is the global membership association for sustainability standards, with a mission is to strengthen sustainability standards systems for the benefit of people and the environment (www.isealalliance.org).

the experience of many standard-setting organizations is that by providing a high bar, they can also help to highlight the poor practices of the worst performers, and raise standards through regulation.

The FairWild sustainability principles provide guidance on how such regulations should look: science-based, using accurate information about value and status of the resource, and flexible according to the local situation, while maintaining respect for traditional-use systems, local institutions, and community ownership, and remembering that, in some contexts, state-sponsored regulatory systems may be inappropriate, and better left to local management. Future projects for the FairWild Foundation and partner organizations could be to gather more case studies and guidance on how to develop effective regulations that support wild plant harvest and trade according to the FWS principles. Based on this, a capacity-building toolkit could be designed to support government agencies in the development and implementation of better regulations. On a final note, considering the importance of NTFP resource use to livelihoods of the poorest communities, both voluntary and regulatory approaches need to consider the issue of equity, ensuring access can be maintained and benefits shared with those who need them most.

References

Brack, D. (2014). *Promoting Legal and Sustainable Timber: Using Public Procurement Policy.* London: The Royal Institute of International Affairs, Chatham House. Retrieved from https://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20140908PromotingLegalSustainableTimberBrackFinal.pdf

Brummitt, N. A., Bachman, S. P., Griffiths-Lee, J., Lutz, M., Moat, J. F., Farjon, A., . . . Nic Lughadha, E. M. (2015). Green plants in the red: a baseline global assessment for the IUCN Sampled Red List Index for Plants. *PLOS ONE, 10*(8).

Chen, H. K., Timoshyna, A., & Oldfield, T. (2015). Trading and preserving forests: Towards sustainable and legal trade in timber and non-wood forest products. *Paper submitted to the XIV World Forestry Congress, Durban, South Africa 7-11 September 2015*.

FairWild Foundation. (2010a). *FairWild Standard: Version 2.0.* Weinfelden, Switzerland: FairWild Foundation.

FairWild Foundation. (2010b). *FairWild Standard: Version 2.0 / Performance Indicators.* Weinfelden, Switzerland: FairWild Foundation.

FairWild Foundation. (2015). *FairWild Standard Operational Procedures: Audit and Certification.* Zurich: FairWild Foundation. Retrieved from http://www.fairwild.org/certification-documents/

FairWild Foundation. (2016). *Strong FairWild presence at world leading organic food fair.* Retrieved from http://www.fairwild.org/news/2016/3/2/strong-fairwild-presence-at-world-leading-organic-food-fair.html

Food and Agriculture Organization. (2015). *Global Forest Resource Assessment 2015. Desk reference.* Rome: FAO. Retrieved from http://www.fao.org/3/a-i4808e.pdf

Government of South Africa. (2013). *Biodiversity Management Plan for Pelargonium Sidoides in South Africa 2011–2020.* Pretoria: Government of South Africa. Retrieved from https://www.environment.gov.za/sites/default/files/gazetted_notices/nemba10of2004_bmforpelargonium_sidoides.pdf

International Trade Centre. (2016). *Sustainable Sourcing: Markets for Certified Chinese Medicinal and Aromatic Plants.* Geneva: International Trade Centre. Retrieved from http://www.intracen.org/publication/Sustainable-Sourcing/

Iqbal, M. (1993). *International trade in non-wood forest products. An overview.* Rome: FAO.

IUCN/SSC Medicinal Plant Specialist Group & FairWild Foundation. (2014). *Risk Classification of species proposed for FairWild Standard implementation - Explanatory Notes.* Weinfelden, Switzerland: FairWild Foundation.

Kathe, W. (2011). The new FairWild standard – a tool to ensure sustainable wild-collection of plants. *Medicinal Plant Conservation, 14*, 14-17.

Laird, S. A., Wynberg, R. P., & McLain, R. J. (2009). *Wild product governance: Laws and policies for*

sustainable and equitable non-timber forest products use. A collaboration of United Nations University, Centre for International Forestry Research, People and Plants International, Environmental Evaluation Unit, University of Cape Town, and the Institute for Culture and Ecology. Retrieved from http://archive.ias.unu.edu/resource_centre/policy%20brief_Oct_09_rev3.1.pdf

Leaman, D. J., & Oldfield, T. E. (2014). *CITES Non-detriment Findings Guidance for Perennial Plants.* Bonn, Germany: BfN.

Morgan, B., & Ottens, B.-J. (2013). Medicinal and aromatic plants of Morocco - National strategy puts FairWild into action. *TRAFFIC Bulletin, 25*(1), 12.

Morgan, B., & Timoshyna, A. (2010). Fair and sustainable trade in wild plants on a firm footing: FairWild Foundation launches a revised Standard. *TRAFFIC Bulletin, 23*(1), 6-8.

Mulliken, T., & Crofton, P. (2008). *Review of the Status, Harvest, Trade and Management of Seven Asian CITES-listed Medicinal and Aromatic Plant Species.* Bonn, Germany: Bundesamt für Naturschutz (BfN).

Newton, D., & Timoshyna, A. (2012). Sustainable management of *Pelargonium sidoides* in South Africa and Lesotho. *TRAFFIC Bulletin, 24*(2), 47-49.

Royal Botanic Gardens, Kew. (2010 and 2012). *Plants under pressure a global assessment. The first report of the IUCN Sampled Red List Index for Plants.* Royal Botanic Gardens, Kew.

Sarnaik, J. (2016). FAIRWILD certification- an enabling framework for building capacity of local communities, implementation of ABS and truly sustainable livelihoods. *Presentation to the Sixth IPSI Global Conference (IPSI-6), 12-14 January 2016.* Siem Reap, Cambodia. Retrieved from http://satoyama-initiative.org/en/12-14-january-2016-the-sixth-ipsi-global-conference-ipsi-6-in-siem-reap-cambodia/

Sarnaik, J., & Hiremath, U. (2014). Medicinal and Aromatic Plants: Conserving Biodiversity and Sustaining Livelihoods in the North-Western Ghats, India. *TRAFFIC Bulletin, 26*(1).

Schippmann, U., Leaman, D. J., & Cunningham, A. B. (2006). A comparison of cultivation and wild collection of medicinal and aromatic plants under sustainability aspects. In R. J. Bogers, L. E. Craker, & D. Lange (Eds.), *Medicinal and aromatic plants. Agricultural, commercial, ecological, legal, pharmacological and social aspects.* (pp. 75-95). Dordrecht: Springer (Wageningen UR Frontis Series 17).

Secretariat of the Convention on Biological Diversity. (2001). *Sustainable management of non-timber forest resources.* Montreal: SCBD (CBD Technical Series 6).

Secretariat of the Convention on Biological Diversity. (2010). *Global Biodiversity Outlook 3.* Montreal: SCBD. Retrieved from https://www.cbd.int/gbo3

Shackleton, C. M., & Pandey, A. K. (2014). Positioning non-timber forest products on the development agenda. *Forest Policy and Economics 38*, 1-7.

Shanley, P., Pierce, A. R., Laird, S. A., López Binnqüist, C., & Guariguata, M. R. (2015). From Lifelines to Livelihoods: Non-timber Forest Products into the Twenty-First Century. In L. Pancel, & M. Köhl (Eds.), *Tropical Forestry Handbook.* Berlin Heidelberg: Springer-Verlag.

Timoshyna, A. (2010). Bosnia and Herzegovina - New Rules for Use of NWFPs. *TRAFFIC Bulletin, 23*(1), 9.

Timoshyna, A., Chenyang, L., Zhang, K., Morgan, B., & Tsipidis, V. (2015). *Engaging China's private sector in sustainable management of medicinal plants—the multiplier effect.* Cambridge: TRAFFIC. Retrieved from http://www.traffic.org/egp-maps

TRAFFIC. (2015a). *Engaging China's private sector in sustainable management of medicinal plants—the multiplier effect: Project policy report.* Cambridge: TRAFFIC. Retrieved from http://www.traffic.org/egp-maps

TRAFFIC. (2015b). *Factsheet: National Strategy on Non-Wood Forest Product Sector of Republic of Kosovo.* Cambridge: TRAFFIC. Retrieved from http://www.traffic.org/egp-maps

TRAFFIC. (2015c). *Factsheet: Promoting sustainable harvesting of Schisandra sphenanthera in Upper Yangtze Ecoregion.* Cambridge: TRAFFIC. Retrieved from http://www.traffic.org/egp-maps

TRAFFIC. (2015d). *Factsheet: Sustainable management of wild plant resources through the application of FairWild Standard principles in Bosnia and Herzegovina.* Cambridge: TRAFFIC. Retrieved from http://www.traffic.org/egp-maps

UNEP. (2010). *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization.* Retrieved from https://www.cbd.int/abs/text/

United Nations. (2016). UN Comtrade database - Export value of products reported in code HS1211 in 2014. Retrieved from http://comtrade.un.org/db

WHO, IUCN & WWF. (1993). *Guidelines on Conservation of Medicinal Plants.* The International Union for Conservation of Nature and Natural Resources (IUCN), Gland, Switzerland, in partnership with The World Health Organization (WHO), Geneva, Switzerland, and WWF – World Wide Fund for Nature, Gland, Switzerland.

World Health Organisation. (2013). *WHO Traditional medicine strategy 2014-2023.* Geneva: World Health Organisation.

WWF. (2009). *WWF's Global Forest and Trade Network Common Framework for Assessing Legality of Forestry Operations, Timber Processing and Trade.* Gland, Switzerland: WWF. Retrieved from http://gftn.panda.org/?202483/Framework-for-Assessing-Legality-of-Forestry-Operations-Timber-Processing-and-Trade

Wynberg, R., Laird, S., Van Niekerk, J., & Kozanayi, W. (2015). Formalization of the Natural Product Trade in Southern Africa: Unintended Consequences and Policy Blurring in Biotrade and Bioprospecting. *Society & Natural Resources: An International Journal, 28*(5), 559-574.

8

Forest Stewardship Council indicators: Development by Multi-stakeholder process assures consistency and diversity

Marion Karmann, Pasi Miettinen and John Hontelez

8 Forest Stewardship Council indicators: Development by Multi-stakeholder process assures consistency and diversity

Marion Karmann (FSC International Monitoring and Evaluation Programme Manager, m.karmann@fsc.org)

Pasi Miettinen (FSC International Policy and Standards Programme Manager, p.miettinen@fsc.org)

John Hontelez (FSC A.C. Chief Advocacy Officer, j.hontelez@fsc.org).

Abstract

In more than 80 countries, forest operations are certified as being managed in accordance with the standards of the Forest Stewardship Council (FSC). This paper explains how FSC addresses regional and national differences in forest legislation, environmental conditions, social and political contexts, and stakeholder expectations in developing forest management standards. It describes how stakeholders reached consensus on the first set of FSC Principles and Criteria, the foundation of FSC's framework for forest stewardship, and how indicators are now negotiated to fill the framework and ensure that national forest management standards fit their context. It concludes with a discussion of why FSC's certification system, though voluntary, has been able to improve forest management by engaging stakeholders in developing national standards that reflect local conditions and community interests.

Keywords: FSC forest management certification, indicator development, stakeholder engagement

Introduction

The Forest Stewardship Council (FSC) runs a certification scheme with the aim of achieving environmentally responsible, socially beneficial and economically viable management of the world's forests. The scheme is based on a set of Principles and Criteria (P&C) for responsible forest management and works with certification and labelling requirements and third party verification. FSC now has over 20 years of experience and recently initiated changes in its forest management standards and accompanying market tools, and taken a first step to seeking influence beyond the borders of FSC-certified forest areas, in particular in intact forest landscapes.

This article discusses how FSC forest management certification works, and examines the emergence and evolution of the P&C. It goes on to look at the challenges of ensuring consistency and integrity of forest management standards across different countries and forest types, and how FSC approaches the process of harmonizing indicators to ensure robust, nationally applicable standards.

Promoting responsible forest management

In the early 1990s, FSC developed a certification scheme that steers and controls forest management practices, and that stimulates and oversees the use of resources from FSC-certified forests by processing industries, retailers and end-users.

The FSC scheme is composed of four main elements.

1. A set of Principles and Criteria (P&C) for responsible forest management worldwide, with locally appropriate indicators (national standards).
2. An international accreditation and certification system (including supply chain), operated through independent certification bodies. These bodies are accredited by one international organisation: Accreditation Services International (ASI)[1].
3. A widely recognized trademark, with three specific labels for use on end-products and in communications.
4. Balanced multi-stakeholder decision-making for setting standards and procedures at the international and national levels, accompanied by transparency and adequate complaints procedures.

Through this scheme, FSC generates incentives for forest owners / managers to conform to environmentally and socially responsible forest practices, facilitates the audit of those forestry operations for compliance with the FSC P&C, and grants those who use the resources from such forests the right to promote their products using the FSC certificate and labels.

Stakeholder engagement is an important part of the FSC scheme and determines the ways FSC strengthens standards, processes, assessments and other activities. One core group of FSC stakeholders is FSC members. The FSC membership operates at two levels: international, through FSC *Asociación Civil* Civil (FSC A.C.; currently about 850 members); and national, in about 50 countries. Membership is open to both, individuals and organizations / companies.

FSC individual and organizational members belong to one of three chambers, representing different

1 ASI is a fully owned but independently acting subsidiary of FSC; it also provides accreditation services to a number of other international sustainability schemes [www.accreditation-services.com].

interests: environmental, social and economic. While FSC strives for consensus, the voting power of the chambers is balanced – each chamber has equal weight on each decision, irrespective of its size, and decisions need majority support from all three chambers (FSC Statutes, 2014).

However, discussions about FSC standards and procedures are not limited to members only. At international and national level, such discussions are open to non-members through open consultations, which can also extend to representatives of government institutions. With its balanced representation of economic, environmental and social interests, FSC has a readymade pool of expertise to critique and adapt its own work. Above and beyond the intense stakeholder engagement involved in developing its policies and standards (see below), members can challenge FSC at any time to review and revise its instruments ("normative documents") through its structures. Revisions of its policies and standards follow much the same path as development of new ones, except that the process is not starting from scratch. Typical triggers for change include, motions from FSC general assemblies, recommendations from FSC working groups and other bodies, changes in ISO standards, and routines set by FSC through FSC-PRO-01-001 *The Development and Revision of FSC Normative Documents,* and by ISEAL Alliance[1] codes. For example, the plantation working group has had a major impact on version 5 of the P&C (see below).

How certification works in practice

The initiative and application for certification always comes voluntarily from forest owners or managers, or, in case of chain of custody, from processing or trading companies. But the incentive for doing so may be internal or on the basis of market demand. The more recognition FSC has received as a valuable tool to ensure sustainable management of forests that are not devoted solely to conservation (e.g. WWF (2015) considers the FSC to be the best available tool), the more companies, consumers and public authorities have encouraged foresters to seek FSC certification. Moreover, smallholders and community forest owners who have faced financial, market and/or knowledge constraints to certification have been supported by companies and/or non-profit organisations because for these groups, FSC itself has eased the process with group certification and special, streamlined requirements for "small and/or less intensive managed forests" (see, for example, FSC, 2011; Karmann & Smith, 2008).

Any company that wants to become certified approaches a certification body, which will evaluate the state of its forest management unit and management plan. If these fulfil the FSC requirements, a certificate can be granted. Annual audits take place to maintain and renew that certificate. Stakeholder engagement is required for setting the specific management requirements and monitoring performance.

FSC in constant development – raising concerns about consistency and credibility

The FSC Principles and Criteria (P&C) for Forest Stewardship form the basis of the system. In the first few years of FSC's existence no less than four versions were developed. The fourth version, adopted in 1996, has been the backbone of the development of FSC for two decades.

From the start, the P&C were applicable to all types of forests, including plantations, in all parts of the world. The FSC P&C combine environmental, social and economic interests, with specific attention to high conservation values and the ecosystem services of forests – seeking to maintain, enhance and/or restore

1 ISEAL Alliance was founded in 2002, by FSC and a number of other Voluntary Certification Schemes (VCS), to facilitate collaboration among VCS, such as for developing a common understanding of the best practices for setting sustainability standards. ASI is also a member of ISEAL Alliance.

such values and services from whatever the starting point may be. They also require compliance with all core International Labour Organization conventions regarding labour and Indigenous Peoples, but go beyond them with requirements for safe work and decent contracts and salaries, respecting and actively supporting customary rights for local and Indigenous Peoples, ensuring that they benefit from the forest operations. The P&C focus on forest management plans with verifiable dos and don'ts, addressing conversion, use of genetically modified organisms and pesticides, harvesting rates and practices.

From Principles and Criteria (P&C) to national forest stewardship standards

The Principles and Criteria (P&C) are not specific to any particular country or region, but are applicable to cultural, political and legal systems found worldwide. This means that the P&C need to be "translated" by interest-balanced stakeholder groups through appropriate indicators into national forest stewardship standards for use in certification assessments (see below for more detail). National standards form the locally applicable and workable versions of the P&C for each region and country and govern how forest management must take place in a given country in order to qualify for FSC certification. The development process and existence of these national standards contributes to a fair, transparent and systematic certification process.

Today, forest operations are certified as being managed in accordance with the P&C and their national indicators in about 80 countries.[1] And in each of these countries, there are diverse stakeholders with interests in forests and forestry, who often have conflicting needs and hold different views about how forests should be managed. So, in reality, the national standards are not only different in response to natural circumstances, but also because of different stakeholder dynamics. This is always within a range that FSC International finds acceptable,

Box 1. International general indicators

As the FSC forest certification started to grow rapidly after 1996 (from 10 million hectares in 1998 to 107 million in 2008, and to 190 million hectares in 2016), members became concerned about the increased diversity among national standards and certification bodies' standards. They also saw increased risks of abuse of FSC's good name in the loose supply chains and in the certification of tropical monoculture plantations combined with the use of highly hazardous pesticides.

Inconsistent interpretation of the P&C by different national Standard Development Groups (SDGs) is a challenge for FSC. For example SDGs in neighbouring countries may come up with different indicators for forest management in the same ecosystem. Significant variations in ecological and social indicators for similar ecosystems or social regimes could lead to the lowering of certification requirements. In an attempt to harmonise the interpretation of the P&C, a major revision of the P&C Version 4 began in 2009. In 2012, the FSC International membership approved the P&C Version 5 (FSC-STD-01-001 V5-0). Among other changes, this introduced "scale, intensity and risk" (SIR) as a new concept in the FSC system. A further step was the development of "International Generic Indicators" (IGIs). It was decided to postpone the transfer of national standards from P&C V4 to V5 until these indicators were agreed. This happened in March 2015.

The IGIs are meant to:

- ensure a more consistent application of the P&C worldwide
- improve the quality of national forest management standards
- support a faster and more efficient development and approval process for national standards
- replace the interim standards of certification bodies in countries that lack approved national standards.

1 See the certification reports at www.info.fsc.org, and the list of countries with FSC certificates at https://ic.fsc.org/en/facts-figures

as the national draft standards need approval by the Board of FSC International after they are endorsed by the national Boards, and reviewed by a special policy and standards committee.

The development of national standards – past and future

The national membership in roughly 50 countries usually follows the FSC *Asociación Civil* A.C. chamber structure and decision-making culture.[1] National members are normally coordinated by FSC national offices, which can play either a direct or an indirect role in the process of drafting national standards. National offices are usually directly involved in managing the process through:

- identifying stakeholders to be included in the Standard Development Groups (SDG) and consultation processes;
- developing and distributing information about certification and national (and, in few cases, regional) forest stewardship standards;
- promoting and initiating the formation of a national SDG;
- raising the funds necessary to support the work of developing the standard;
- communicating progress and problems between stakeholders, members and the FSC Secretariat;
- communicating with other national SDGs to facilitate the harmonization of standards within and between regions.

When they take an indirect role, national offices may just observe the establishment of an SDG that has balanced representation from economic, environmental and social interests, which communicates directly with FSC International.

Standard Development Groups (SDG) members are usually 2 or 3 experts per chamber, appointed by and from the national membership, and endorsed by FSC International. Their key function is to help the different interest groups to reach a consensus on indicators for each of the global P&C and, through a consultative process, develop a draft FSC national standard on behalf of the entire national membership. They derive from the P&C indicators for each criterion, in accordance with the local ecological, social and economic circumstances. Their work is often moderated by an independent facilitator.

The consultative process should involve as many stakeholder groups as possible, including those that may not fully agree with or endorse the concept of certification. All FSC members in an area should be contacted. The consultation should also include, as far as possible, perspectives from different levels. The inclusion of international, national, regional and local stakeholder groups will help to ensure that these perspectives are represented, and to build trust in the process and ownership for the standard. Stakeholders involved should also cut across professional, ethnic, age, gender, educational and economic differences. Special efforts should be made to include stakeholder groups that are often excluded from decision-making processes, which may include marginalized social and ethnic groups, women, youth, rural communities, land owners, loggers and foresters. FSC places particular importance on including people whose livelihoods depend on forests.

Bowler et al.'s (in press) observation in New Zealand confirms what other authors (e.g. Synnott, 2005; Cashore et al., 2007; Conroy, 2007; McDermott, 2012) describe for other countries and constituencies: certified plantation management operations take collective action in standard development processes to influence the

1 In exceptional cases, FSC International accepts an additional chamber (e.g. for Indigenous Peoples or forest-managing communities) at the national level.

current and future requirements of standards, in this case related to derogations for pesticide use. Bowler et al. (in press) conclude that "the higher engagement in negotiations with FSC, the higher likelihood that a firm withdraws from a certification if they are unable to gain the exemptions that they seek." FSC experienced this already in its early days. Synnott, the first director of FSC reflects:

> [T]he success of individual FSC National Initiatives can be measured not only by the degree of consensus they have developed around the national standards, but also by their ability to develop a constructive dialogue among the national forestry stakeholders, even when these interests had a history of conflict. (…) depended heavily on a very few individuals with the right mix of enthusiasm, persistence and coordinating skills, and with the right back-up. (Synnott 2005, p.33)

Ensuring consistency

In order to ensure the consistency and integrity of standards in different regions, FSC International must endorse each set of national standards as meeting all the requirements established to ensure the credibility of the certification process (contained in FSC-STD-60-002 and FSC-STD-60-006).[1] These requirements refer to both the content of the standards and the process used to draw up them up, and include compatibility with the P&C, local field testing, a consultative design process, and compatibility with local circumstances (see box).

After preliminary feedback from FSC International, the Standard Development Groups (SDGs) proposes a final draft to the national board of directors and membership for approval, and then to the Board of FSC International for final approval. Once a national forest stewardship standard has been endorsed by FSC, all certification bodies must use this standard in their certification processes in that country.

In the absence of national indicators developed by an FSC SDG, certification bodies, by applying transparent and inclusive stakeholder procedures, must adapted their generic indicators to national conditions.[2] Today, FSC has endorsed one or more national forest management standards in 30 countries, and one regional Congo Basin standard. More than 90 per cent of all FSC certified forest area is based on national FSC national standards.

In the past, it was not unusual for the process of agreeing a set of national indicators to take four years or more. In the future, this process should be faster now that the International Generic Indicators (IGIs) are in place.

The central role of indicators

The main intention of all forest stewardship standards is to minimise the negative impacts of forestry on forests and people as far as possible, while securing the financial viability of forest operations. But within this overarching aim, the national indicators for some FSC criteria have been different from country to country,

1 FSC indicator development is governed by FSC standards and policies, but also by external rules such as the ISEAL Code for Standard-Setting (ISEAL, 2014). According to these standards, members and other stakeholders are engaged in identifying the need for a new standard; in discussing, improving and promoting FSC standards; and are formally consulted about the various steps of standard development, field testing and review. Overdevest and Zeitlin (2014) describe ISEAL as having a new meta-organizational role which "may be important in an otherwise anarchic world of competing standards, by serving a virtual meta-center which does not specify first-order standards but instead sets second-order standards for their assessment".

2 The generic indicators set by certification bodies so far will be replaced by the Interim National Standards, which are based International Generic Indicators and adapted to the local conditions during the next few years.

Box 2: The consultative process and multiple standards

The design of the consultative process must include a mechanism for reaching decisions and resolving disputes, preferably through a dispute-resolution committee. In the absence of other local mechanisms, the FSC International Dispute Resolution Committee serves as the default mechanism for such disputes. The design of the consultative process should also include a "learning process" approach, in which new knowledge is incorporated into the implementation and redesign of the consultative process.

One of the first major decisions to be made is about the scope of the forest management standard. In some countries, the FSC national membership has decided to develop more than one forest management standard, for example with different sets of indicators (all within the P&C framework) for plantation forest management and for natural forest management, or for different eco-geographical zones in large countries. Canada, for example, has four standards: for the boreal forest region, for British Columbia's forests, for the maritime forest region, and for small and/or low-intensity managed maritime forests. There can also be standards for certain types of key forest species, like the Colombian bamboo and the Bolivian Brazil nut.

There is also an option for developing regional standards, covering comparable forest ecosystems across different countries. A slightly different case is the development of sets of indicators for low-intensity forest management standards and/or for small forest operations, for which FSC might allow less demanding documentation requirements. Nevertheless, all indicators for these different standards are developed within the framework of the global P&C.

and region to region, according to differences in forest ecosystems, legislation, the intensity of forest management, culture and stakeholder expectations. An obvious example is Principle 1, which requires that forest management respects all relevant national and local laws, regulations and international conventions to which a country is signatory. There are considerable differences between forest laws from country to country; for example, regarding public access rights to publicly or privately owned forest, or the rights to use non-timber forest products. There can also be differences between the FSC P&C and national laws; for example, if FSC national indicators suggest that forest owners grant certain use rights to local communities, but this is not required by national laws. Such conflicts between national laws and regulations and the FSC P&C are evaluated for certification on a case-by-case basis, by the certifiers and the affected parties. Such differences, driven by different circumstances, will continue to exist in future national standards.

Differences can also arise in countries where stakeholders are accustomed to intense plantation forest management with short rotations, and have a different understanding about the use of exotic species and the need to apply pesticides and fertilizers compared to those from regions with large areas of unevenly aged natural forest managed under low-intensity systems. Table 1 highlights this via the extremely different approaches to criteria 6.6 and 6.9 of the FSC standards for natural forest management in Germany, and for plantation management in New Zealand.[1] However, applying the FSC International Generic Indicators (IGIs) will allow for less diversity in such instances, and it will be interesting to see how this will work out in practice.

The comparison illustrates that there can be a different acceptance of the use of pesticides

1 The full list of national standards is available at: https://ic.fsc.org/en/certification/national-standards

Table 1. Examples of differences between national indicators for the same FSC criteria, Germany and New Zealand

German FSC Standard for natural forest management (2012)1	National indicators	New Zealand FSC Standard for plantation forest management (2013)2
FSC criterion 6.6 **Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. WHO Type 1A and 1B [the most hazardous pesticides] shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.**		
Fertilization to increase productivity is not applied. Liming is permitted when soil analyses recommend compensation.	6.6.1	Forest managers shall demonstrate a commitment to the goal of avoidance and minimization of chemical pesticide use and the promotion of environmentally optimal methods of pest management.
In principle, chemical biocides and biological control agents are not employed. Exceptions are official pest-control orders (see Principle 1).	6.6.2 (for New Zealand, also 10.7.1)	An integrated pest management plan shall form an essential part of the management plan.
Germany has more indicators related to the training of forest workers, which includes the handling of pesticides, under other criteria.		New Zealand has 14 more indicators and related verifiers striving to reduce any negative impacts of the application of chemicals.
FSC criterion 6.9 **The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.**		
Tree species that are not part of natural forest associations (including exotic species) are positioned as single trees or small groups to an extent which does not jeopardize the long-term development of the stands into natural forest associations. 6.9.1.1 If the proportion of tree species that are not part of natural forest associations exceeds 20% of the planned stocking goal for the specific forest management unit, the forest enterprise shall professionally confirm that the development is not a risk to the natural forest plant association. 6.9.1.2 Such proof is not necessary for a nurse crop that is not part of natural forest associations, if at most 20% of the stocking unit is taken over as temporary mixture.	6.9.1	Forest managers shall comply with any applicable regional pest management strategy including where this identifies a wilding species as a pest.
Positioning of tree species that are not part of natural forest associations (including exotic species) in high conservation areas (Principle 9) is only feasible insofar as it is explicitly permitted by the respective environmental sector planning.	6.9.2	Forest managers shall have in place a Wilding Prevention Decision Support System.
On afforestation sites the proportion of tree species that do not belong to the natural forest association is limited to 20% in impermanent mixture.	6.9.3	Prior to planting of exotics, forest managers shall use the system in 6.9.2 to assess the risk of wilding spread.
	6.9.4	Where the risk is high, the forest manager will not plant without implementing ongoing control procedures.
	6.9.5	In the absence of a species being identified in the regional pest management strategy, the forest manager shall remove "wildings" in adjoining properties before seed production where: the adjoining property owner is agreeable to any wilding control activities required on his or her land, and wildings are clearly identified as the progeny of species planted within the plantation area; and wilding spread has occurred from plantations after the Standard becomes operative or from first certification.
	6.9.6	The enterprise shall monitor and/or carry out research to evaluate the potential invasiveness and/or other adverse ecological impacts of the species in the local area.

1 See: http://ic.fsc.org/download.fsc-std-deu-02-2012-german-natural-and-plantations.265.htm
2 See: http://ic.fsc.org/download.fsc-std-nzl-01-2012-new-zealand-plantations-en.1112.htm

and of exotic species in two different national standards. In New Zealand, non-native species can be used in plantations, and the management of such species becomes an issue only if they are regarded as a pest (i.e. escaping from the planted area). The German national standard requires forest management to approximate the composition of tree species and the structure and dynamics of natural forests, and to utilise natural processes as much as possible, resulting in reliance on natural processes and consequently rejection of pesticides through a limit of a maximum of 20 per cent of the area for reforestation with non-native species.

Note that these indicators refer to the Principles & Criteria (P&C V4), as the national transition processes for P&C V5 and IGI-adapted indicators are still ongoing. The indicators in the example do not completely reflect the corresponding criteria, as there are many cross-cutting issues in the P&C V4. As such, indicators on one topic can sometimes be found under several different principles. For example, the requirement to "maintain or enhance biodiversity" is clearly spelled out in Principle 6, but also depends on criteria in Principles 5, 7, 8 and 9. Another example, shown in Table 1, is evaluating how a forest operation handles the application of pesticides. This evaluation has to consider the training of forest workers dealing with the pesticides (Principle 4), national legislation (Principle 1), and the monitoring of negative ecological or social impacts. Because in P&C V5 the former "Plantation Principle 10" (see below) became an integral part of the other principles, it can be expected that in New Zealand in the future two separate standards will be developed for natural forests and plantations, while for German forests the related indicators will not change much.

Broader critique

Over the years there has been general criticism on voluntary certification schemes (VCS) in general and of FSC in particular. It has been suggested that defining, requiring and enforcing of sustainable forest management (SFM) should be left to governments, as voluntary action is inadequate (see also Castka and Corbett, 2016 for the role of governments in voluntary certification). The FSC response is that it recognizes the essential role of governments, and that the rule of law is an essential element of sustainable development: that FSC was initiated in response of failure of the world's governments to agree on a legally binding framework for SFM (UNCED-Rio 1992): that it does not seek to replace government leadership but to provide an alternative for producers and consumers as long as governments around the globe do not guarantee SFM. We also notice that in some countries, the FSC approach to SFM has inspired forest law reforms, and that governments are using FSC (and often PEFC) as elements for standard setting for ecolabels and for green/sustainable public procurement.

Some critics see FSC certification as greenwash for companies with unacceptable practices. As FSC is an organization set up to halt deforestation and forest degradation, its activities obviously concentrate on that purpose. For companies producing and/or trading products with wood origin, FSC therewith contributes substantially to minimizing the environmental footprint of these products. It is also requiring, in all stages of production and trade, application of core ILO conventions and essential health and safety conditions for workers. Beyond that, with its Policy for Association, it can remove certificates from companies who do not violate the rules of the scheme directly but which are in other places involved in activities seen as negative to forests and the people who live in them.

FSC does not favor any specific management and ownership model. A large part of FSC certified areas are government owned, and either run by government agencies or private concession holders. FSC offers group certification for smallholders and is supporting

community certification. The only conditions are that the property and/or use rights are clearly documented and undisputed, also not in terms of customary rights.

Besides such critique on the very existence of VCS, there is obviously critique on the specific requirements of the scheme and on how these requirements are validated and corrective action is taken. Some critics have specific concerns about FSC certifying primary forests and/or plantations. As regards primary forests: FSC has special requirements, as part of this High Conservation Value approach, that such forests do not lose out on biodiversity. FSC is against the conversion of (semi)natural forests into plantations, and does not legitimize this with certification if such conversion has taken place after 1994. However, it does see an important role for plantations and sees opportunities to improve the environmental and social qualities and services through certification.

Positions about plantation management reflected in the P&C

Plantation management was antithetical to the vision of some early NGO supporters, who envisioned the FSC as a tool to radically transform forest management into more naturalistic, locally-based production systems (McDermott, 2003). Others, however, viewed the FSC as a tool to rapidly tackle tropical forest loss, and argued that plantation management would take pressure off natural forests (Elliott, 1999). The FSC responded by creating a separate Principle 10 (P10) expressly focused on plantations, thereby focusing the plantation debate on a single principle and preventing it from stalling the rest of the standard-setting process. Principle 10 was endorsed two years after the other nine principles, reflecting conflict over whether and how plantation products should qualify for an FSC label (Auld, 2008; McDermott, 2011, p.8).

Triggered by a FSC general assembly motion requesting FSC to more clearly address how plantations can be managed in the spirit of the principle to maintain and enhance biodiversity, in 2004 FSC stakeholders started working in a number of thematic working groups on the "Plantation Policy Review" (http://plantations.fsc.org/). Some of the answers developed in long multi-stakeholder processes are the introduction of the SIR concept and the better integration of the "Plantation Principle" in all other principles.

From a more global perspective, the German government aid agency GIZ in 2005 refers to FSC in describing "The impacts of forest certification are not limited to the certified enterprises. The whole process of agreement and binding implementation of standards has institutional impacts on organizations, behaviour and culture throughout the entire sector, and beyond this in society it-self" (Burger et al 2005). And Mirjam Ros-Tonen (2004) provides a summary in the findings of an international congress on "Globalization, Localization and Tropical Forest Management in the 21st Century":

> Certification has had many effects that cannot be measured in hectares or premiums. It has given a greater voice to indigenous groups who have been historically left out of the forest debate. Certification has made a tremendous contribution to creating space for broad participation and continuous adaptation in forest management and conservation efforts. Regional standard-setting groups have brought together industry, the environmental community and local communities in an unprecedented way. Hundreds of companies, communities and forest landowners have reinvented their businesses, enhanced their products and established new partnerships on the coattails of the certification movement. Several strategic issues need to be dealt with if this new tool is to be developed effectively in the future. Originally designed to respond to unsustainable logging in the tropics, certification has been much more successful in the temperate forest areas.

Box 3: Recommendations for other multi-stakeholder voluntary certification schemes

- Take your time with stakeholder engagement – in general, the more diverse the positions the stakeholders represent, the more time the process will take.
- Do not measure success solely on the basis of degrees of consensus, but include the ability to develop and maintain constructive dialogue – this may depend on having "the right mix of enthusiasm, persistence and coordinating skills, and with the right back-up" (Synnott, 2005).

Conclusions

The FSC International Generic Indicators (IGIs) were developed to orient the Standard Development Groups (SDGs) in each country and help them to revise and transfer their existing indicators, resulting in the improved alignment of indicators between different countries. Once the transfer process is complete in each country, the P&C V5 will be used for certification audits. According to current work plans (June 2016), the last countries will turn to P&C V5 by 2018–2019. In March 2016, Portugal became the first country to establish a forest management standard based on P&C V5, and have it approved by FSC International.

As FSC applies this approach for the first time, we cannot predict fully what complications the national standard setting procedures will face, and how it will impact on the readiness of forest managers/owners to (continue to) work with FSC certification. For that reason, FSC has decided to review of the IGIs and their impacts as early as 2018, to agree on possible changes from 2020. Subsequent reviews and revisions of the FSC P&C will occur in a five-year cycle, and will include full stakeholder engagement.

The characteristics of forests and forest stewardship are the result of a large range of factors, and these differ widely from one region to another. Yet the FSC P&C for forest stewardship are applicable worldwide, not any particular country or region, and lack

quantitative absolute indicators for certain criteria that are appropriate for the stakeholders in one country but may not be seen as acceptable in another country. However, all criteria within the FSC P&C strive towards reducing the negative impacts of forest management interventions and promoting responsible forestry.

With the proactive engagement of diverse stakeholder groups, at international and national levels, the FSC P&C helps to ensure that these many different interests and opinions regarding forest management are all considered via consultative processes which result in robust, nationally applicable standards.

References

Bowler, K., Castka, P., & Balzarova, M. (In Press). Understanding firms' approaches to voluntary certification - evidence from multiple case studies in FSC certification. *Journal of Business Ethics*.

Burger, D., Hess, J., & Lang, B. (Eds.) (2005). *Forest Certification: An innovative instrument in the service of sustainable development?* Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH, Eschborn, Germany

Cashore, B., Auld, G., Lawson, J. & Newsom, D. (2007). The Future of Non-State Authority on Canadian Staples Industries: Assessing the Emergence of Forest Certification

http://www.policyandsociety.org/archive/vol26no1/vol26no1_cashore_auld_lawson_newsom.pdf

Castka, P., & Corbett, C. J. (2016). Governance of eco-labels: Expert opinion and media coverage. Journal of Business Ethics, Vol.135, Issue 2, pp 309-326

Conroy, M.E. (2007). *Branded! - How the 'certification revolution' is transforming global corporations.* New Society Publishers ISBN: 9780865715790

FSC (2009). *Strengthening Forest Conservation, Communities and Markets. The Global Strategy of The Forest Stewardship Council.* FSC International Center GmBH, Bonn. (Also available at https://ic.fsc.org/preview.global-strategy-report.a-39.pdf).

FSC (2014). *Statutes* (*revised version*). FSC AC, Oaxaca. (Also available at https://ic.fsc.org/preview.fsc-statutes.a-4805.pdf).

FSC (2016a). *Guideline for Standard Developers for Addressing Risk of Unacceptable Activities in Regard to Scale and Intensity*. FSC-GUI-60-002 V1-0 D1-3 EN. FSC International, Bonn, Germany. (Also available at https://ic.fsc.org/preview.scale-intensity-and-risk-sir-guideline-for-standard-developers-fsc-gui-60-002-v1-0.a-5216.pdf).

FSC (2011). Success stories: Benefits that FSC certification has brought to forests and communities (https://ic.fsc.org/en/our-impact/success-stories-01).

ISEAL (2014). *Setting Social and Environmental Standards – ISEAL Code of Good Practice. Version 6.0.* ISEAL Alliance, London. (Also available at http://www.isealalliance.org/sites/default/files/ISEAL%20Standard%20Setting%20Code%20v6%20Dec%202014.pdf).

Karmann, M. & Smith A. (2008). *FSC reflected in scientific and professional literature. Literature study on the outcomes and impacts of FSC certification.* FSC International https://ic.fsc.org/download.fsc-reflected-in-scientific-and-professional-literature-literature

McDermott, C. L. (2012). Trust, legitimacy and power in forest certification: A case study of the FSC in British Columbia. *Geoforum, 43*(3), 634-644.

McDermott, C. L. (2011). FSC Certified Plantations and Local Communities workshop: Overview paper. *Plantations and communities: Key controversies and trends in certification standards.* James Martin Senior Fellow, Oxford Centre for Tropical Forests University of Oxford. https://ic.fsc.org/en/resources/case-studies/plantations-communities

Overdevest, C. & Zeitlin, J. (2014). Assembling an Experimentalist Regime. In: *Leveling the Playing Field: Transnational Regulatory Integration and Development* (Eds László Bruszt, Gerald A. McDermott) Oxford University Press

Ros-Tonen, M. A. F. (2004). *Final Report: Congress on Globalisation, Localisation and Tropical Forest Management in the 21st Century*. Amsterdam Research Institute for Metropolitan and Int. Development Studies, Amsterdam, Netherlands.

Synnott, T. (2005). *Notes on the Early Years of FSC*. FSC, Bonn. (Also available at https://ic.fsc.org/download-box.797.htm).

WWF (2015). What certification system can you trust? http://wwf.panda.org/about_our_earth/deforestation/forest_sector_transformation/forest_certification/

9

Designing a labelling system for biocultural heritage-based products

Krystyna Swiderska, Aroha Mead, Graham Dutfield and Alejandro Argumedo

9 Designing a labelling system for biocultural heritage-based products

Krystyna Swiderska, Aroha Mead, Graham Dutfield and Alejandro Argumedo

Abstract:

Although labelling and certification schemes exist for ecological and fair trade products, there is no such scheme that seeks to benefit producers and at the same time specifically protect biological and cultural diversity. A certification system promoting unique biodiversity-based products could be based on the strong overlap between areas of high biological and cultural diversity, and growing evidence that cultural values play a critical role in conserving biodiversity. The interaction between a particular culture, traditional knowledge, and biodiversity and landscape (i.e. 'biocultural heritage') is a source of creativity for developing such products. This paper reviews experiences with the Potato Park's informal trademark, the use of Geographical Indications (GIs) and the Maori Organics label. It shows that existing schemes such as GIs and collective trademarks can be hard for indigenous producers to access, while indigenous schemes can be effective in conserving biodiversity. It presents an alternative 'Biocultural Heritage Indication' (BCHI) labelling system which is being developed to ensure wide and easy access by indigenous peoples and protect biocultural diversity.

Keywords: biocultural heritage, indigenous labelling, trademarks, indications

Biocultural products of the Potato Park.

Credit: ANDES

Why develop a label to protect biocultural heritage-based products?

Biocultural heritage-based products and services, such as traditional foods, herbal teas, personal care products, crafts and guided tours, can provide a source of income and generate incentives for conserving biological and cultural diversity. Tourists and local people with disposable income are often willing to pay a premium for high quality local products provided they carry a guarantee of origin and authenticity. But such guarantees are often lacking. While labelling and certification schemes exist for ecological and fair trade products, there is no such scheme that explicitly seeks to protect both biological and cultural diversity. Some existing intellectual property tools such as collective trademarks and geographical indications (GIs) could be used to protect collective rights over biocultural products, but they are difficult for indigenous peoples to access as registration procedures are bureaucratic and designed for businesses, and enforcement is often difficult and costly (Argumedo, 2013; Pant, 2015). Furthermore, their main goal is to promote trade, rather than protect biological and cultural diversity (Dutfield, 2011). IIED, the University of Leeds and Asociacion ANDES (Peru) are therefore developing a new labelling scheme for biocultural heritage-based products, which aims to be easily accessible to indigenous peoples worldwide.

Much research has shown that cultural and spiritual values act as important incentives for biodiversity conservation (Pilgrim and Pretty *eds.*, 2010). For example, although much crop diversity has been lost, indigenous farmers still maintain traditional varieties because of their cultural values and preferences (IIED *et al.*, 2008). Spiritual values play a key role in conserving wild biodiversity through sacred sites such as forests and mountains. Many indigenous communities share the same basic cultural values that guide all aspects of life: reciprocity (equal exchange) in society and with nature; equilibrium (balance in society and with nature); and solidarity and a collective spirit. Similarly, their holistic worldview places conservation at the heart of development. The Andean 'ayllu' concept for example, divides the world into three realms: humans and domesticated species, wild species, and the sacred and ancestors. Sumaq Causay (well-being) is achieved through balance between these three ayllus (Asociacion ANDES and the Potato Park, 2015). Cultural values and beliefs also promote biodiversity-based innovation by indigenous communities (Wekesa *et al.,* 2016).

Box 1: Glossary of Key Terms	
Geographical Indications (GIs)	Names that link a product with a particular geographical area or territory and production process (often the name of the area or place). Like trademarks, GIs are set up to protect intellectual property.
Trademarks	Similar in function to GIs, but link a product with a trade origin, which is likely to be a company rather than a place.
Labelling	Marks or logos that offer guarantees to consumers but do not seek to protect intellectual property and do not necessarily entail third party attestation. Also a broad term for all types of product labelling
Certification	Similar to labelling but entails third party attestation.
Intellectual Property Rights (IPRs)	Legal rights over inventions, artistic or literary works, distinctive marks, designs, place names, and other practical expressions of mental outputs that have actual or potential commercial value.
IPR-based labelling tool	Labelling schemes that seek to protect IPRs (eg. GIs and trademarks)
Biocultural Heritage	Inter-linked traditional knowledge, biodiversity, landscapes, cultural and spiritual values and customary laws of indigenous peoples and local communities. See: www.bioculturalheritage.org
Biocultural Heritage Indication (BCHI)	A graphical sign or label to indicate that a product or service is derived from biocultural heritage, guaranteeing its origin and authenticity.

Ceremony to the spirit of the potato, the Potato Park.

Credit: ANDES

Yet across the world, cultural diversity is being lost at an unprecedented rate, and with it cultural values and traditional knowledge for biodiversity conservation and sustainable use. UNESCO estimates that up to 90% of languages (an indicator of cultural diversity) will be lost by the end of this century (UNESCO, 2003). Thus, we are facing a double extinction crisis: biological and cultural. Key drivers of cultural change include modernisation, loss of traditional lands and sacred sites, erosion of traditional governance and integration with western markets (IIED *et al.*, 2009). Conventional market mechanisms designed to create economic incentives for biodiversity conservation can undermine cultural incentives for conservation – hence there is a need for new market mechanisms that seek to balance economic and cultural incentives, and are designed by or with indigenous peoples.

The Potato Park's Collective Trademark

The Potato Park is a biocultural heritage territory of over 9000 hectares, near Pisaq, Cusco Peru, which is managed collectively by an Association of 5 communities based on Andean customary laws. It conserves about 650 varieties of potato (about 1400 different types according to traditional classification) and a diversity of other Andean crops and agro-ecosystems, at about 3500 to 5000 meters above sea level. It has established a number of economic collectives (micro-enterprises) producing biocultural heritage-based products and services. In early 2010, the Potato Park tried to register a Potato Park Collective Trademark but was unable to do so, despite external support, because of the bureaucratic requirements of INDECOPI, the national IPR authority (Argumedo, 2013). Applicants

have to be legally registered organisations and submit their statutes of association indicating the name of their leader. However, the name on the statutes of association changed as one community was no longer a member of the Potato Park, and it was not possible to change the statutes of association within the 60 days required, as that requires another lengthy legal process, so the application for the Potato Park trademark was rejected. This experience highlights some of the difficulties facing indigenous applicants, in addition to their often remote rural location, language barriers, and the need to register each product separately.

However, the Potato Park has used its collective trademark informally since 2005 on its products and services – e.g. herbal teas, potato shampoo, creams, traditional weaving, eco-tourism. In 2010, a survey was conducted in the Potato Park to assess the impacts of the trademark (Argumedo, 2013). Analyses of the responses revealed that the collective mark has brought tangible monetary benefits. 70 per cent of participants said that the mark results in both higher prices and increased sales, the biggest market being visitors to the Potato Park (for educational tourism/eco-tourism). 60 percent of participants noted that the mark allows for market differentiation and ensures that products are better known for their quality and source, which contributes to higher sales. The mark has helped to build the reputation of the Park and attract visitors to engage in other services and activities. Use of the trademark also strengthened collective identity and pride in the Potato Park, and hence social cohesion for the management of biodiversity and landscapes. Ten percent of revenues from all products sold with the Potato Park trademark are invested in a communal fund, and redistributed at the end of each year according to an inter-community agreement for equitable benefit-sharing which is based on customary laws. Remaining revenues are shared with the poorest people in the park such as widows and orphans.

The Potato Park trademark has also strengthened customary laws that promote conservation, since these were used to guide the development of internal rules for use of the trademark. However, despite being guided by the three fundamental Andean customary principles of equilibrium, reciprocity and duality, evaluations carried out by ANDES and the communities found that the original internal regulations developed to satisfy the INDECOPI requirements could have been improved, to better reflect the biocultural heritage of the communities.

As the Potato Park's experience shows, labelling of biocultural heritage-based products can benefit livelihoods and promote biodiversity conservation even without formal registration. Registration would enable producers to take legal action in the event of misuse of their label, but can be very difficult for indigenous peoples.

Have Geographical Indications benefited biodiversity and traditional producers?

Experience with the use of Geographical Indications (GIs) has also highlighted limitations for indigenous peoples, small producers and biocultural heritage in Southern countries. In Mexico, the GI for 100% blue agave tequila has been commercially very successful, but its narrow focus on only one variety has led to the loss of biodiversity (Dutfield, 2011). In Europe, GIs have been particularly successful for products with well established markets. Experience in India highlights difficulties that can arise for less well known products, and the need to invest marketing, monitoring and enforcement, once the GI is obtained.

GIs such as Darjeeling Tea have benefited corporations which have received government support for monitoring and enforcement. But small producers have not benefited or received government support in many cases, e.g. for Navarra rice (a threatened traditional variety) where a farmer had to pay the costly registration fee (Pant, 2015). In this case, the GI has not led to economic benefits for traditional farmers as Navarra rice is expensive to produce, and the profit margins are low, and although the ayuverdic health industry uses it to produce medicinal oil, it is not buying Navarra rice from GI registered producers. The case of Feni, an alcoholic drink produced in Goa, the state-supported registered GI holder has made no attempt to register many small producers, and the GI's standardised production requirements could put at risk diverse cultural practices. In the case of Kota Doria Sarees, UNIDO and the State government provided support to establish a weavers' association and for marketing and raising awareness of the GI. Traditional weaving practices were revived as a result of the GI. However, a study found that the increased revenues have gone to a few master weavers/ traders and have not reached the women who are the actual weavers (Pant, 2015).

Key features of the Biocultural Heritage Indication

Given the limitations of existing IPR-based labelling tools, and building on the experience of the Potato Park's trademark, a 'Biocultural Heritage Indication' is being developed. The indication will be designed to be widely and easily accessible for indigenous people in rural areas, e.g. through a simple internet-based application system in local languages. Its basic aim will be to conserve biological and cultural diversity and enhance the capacity of indigenous people and local communities to generate income from biocultural heritage. Beyond this, there could be other benefits, such as enhancing recognition and protection of indigenous peoples' rights over their traditional knowledge and biocultural heritage, and strengthening local innovation (Dutfield *et al.*, 2015).

The indication seeks a culturally appropriate approach to marketing that harnesses goodwill towards indigenous peoples and their "traditional lifestyles". It will emphasise and authenticate the way that cultural and spiritual values, local knowledge, innovations and practices, and the local environment including ecosystems, biodiversity and landscapes, are all closely linked. Together, they imbue products with a unique character. However, to harness this goodwill, consumers need to be aware of what biocultural heritage means – hence the concept needs to be actively promoted alongside the Indication.

The indication will be a graphical sign containing the term 'Biocultural Heritage', accompanied by the name of the relevant indigenous group, community or territory, and could be used alongside existing indigenous labels, to provide an independent guarantee. It could be applied to goods and services which embody or express biocultural heritage and to those which may not do so, but whose sale supports biocultural heritage or at least does no harm. The aim of the scheme is to ensure that as much of the market value as possible is captured locally, through "full benefit capture", rather than "benefit-sharing". Well-made local goods that are trusted as being authentic or are imbued with positive associations are likely to attract good prices and decent revenues can flow from the sale of quite small volumes.

Key design questions to be addressed

A consultation document for designing the Biocultural Heritage Indication (Dutfield *et al*, 2015) has identified a number of design questions that need to be addressed. Should the scheme be a label or a certification? While certification gives firmer guarantees for consumers, complying with detailed requirements is likely to be burdensome for small organisations, especially for a range of

products. Labelling may be more appropriate in this case, as it places more responsibility on the producers to ensure compliance, although some independent oversight will still be needed.

Should the label be trademark protected? A collective trademark can be owned by a legally registered community-based organisation. This would provide stronger protection against unauthorised copying or sale of products through trademark infringement remedies, but trademarks would need to be acquired in each country where indigenous communities use the indication and renewed at least every seven years.

Which organisation should manage, monitor and review the scheme? Of key importance is that indigenous people are directly involved in running the scheme and feel that it is their scheme rather than one imposed by others. It could be an indigenous organisation or one which is trusted by indigenous peoples or which directly involves them (e.g. on a steering committee or board). The scheme must be institutionally sustainable: in other words, it should not be overly dependent on the active engagement of a small number of individuals working in a personal or voluntary capacity. It would also need to be financially stable, requiring continuous financial support to allow for monitoring, evaluation and review, site visits and field research.

What would the organisation do? It could provide independent monitoring of the Indication to ensure it supports biocultural heritage, manage payment of renewal fees (to keep registered trademarks in force), assess the impacts and effectiveness of the label, and monitor markets including preventing improper use by third parties. A key question is whether or not it is feasible to have a single organisation entrusted with setting up and overseeing the scheme globally, which also monitors and reviews its implementation. If a legal trademark approach is chosen, another important role for the organisation would be to file trademark applications to officially register the Biocultural Heritage Indication.

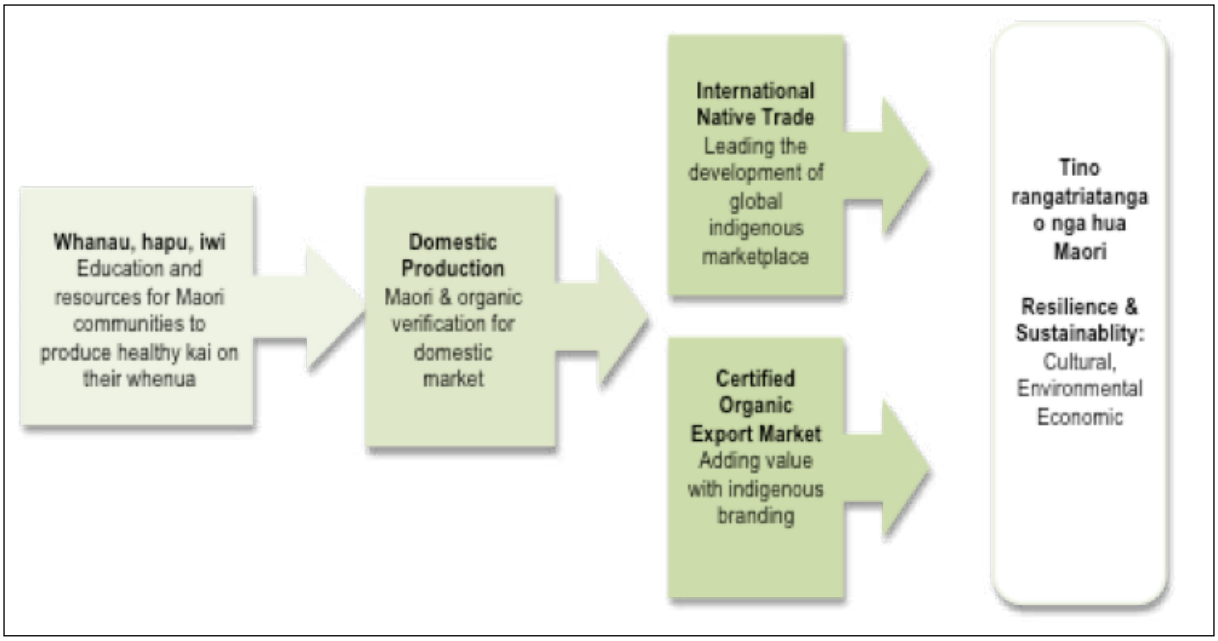
Misuse by authorised users needs to be regulated by the organisation managing the scheme. Misuse can be deliberate or inadvertent, so the first step on being made aware of the situation should be to take a non-confrontational approach and consult with the concerned community or group. However, continued misuse needs to be prevented because it will erode the credibility of the scheme and will be detrimental to all users. Arguably, a light touch monitoring of proper use of the Indication is preferable, and withdrawal of the right to use the mark should be seen as a last resort measure, with the option to appeal.

A consultation process is being held to obtain feedback on these and other key questions, such as how the scheme will ensure positive outcomes for biological and cultural diversity[1]. Responses to date have highlighted the importance of ensuring the participation of indigenous peoples and local communities in managing the scheme for local ownership, and have suggested the establishment of local monitoring committees. They also highlighted the need to balance easy access to the indication with rigour to prevent unauthorised use. To this end, it was suggested that the indication should be trademark protected in at least three countries and that a website should be established listing all authorised users. While local or national markets should be prioritised initially to minimise the use of intermediaries, direct links to global markets could also be established via internet marketing.

Hua Parakore – A Maori Organics Verification and Validation System

The Maori Organics label provides an example of how a local verification and validation system

1 The consultation has been extended until September 2016 – we are eager to hear from indigenous peoples and people with experience with indigenous labelling systems: www.surveymonkey.com/r/BCHIsurvey



for a biocultural heritage indication could work to ensure economic, cultural and environmental goals are met. In July 2011, 'Hua Parakore' was launched as an indigenous Maori verification and validation system for food and product production by 'Te Waka Kai Ora' the National Maori Organics Authority of Aotearoa New Zealand. The establishment of the brand fulfilled a mission of Te Waka Kai Ora (established in 2001) to draw on Maori cultural values to promote community-based food production as a long-term vision for Maori economic, social and cultural development. The brand was established through a consultative process, informed by research, focus groups, case studies and consideration of other national organic standards such as the NZSA 8410.2003 New Zealand Standard for Organic Production, Biogro, Assure Quality and Demeter, as well as global initiatives such as the Slow Food Movement.

> *"Hua Parakore is an integrity based process about authenticating Maori seed, Māori grown, Māori verified, Māori marketed and Māori exported. Hua Parakore is the Maori point of difference."*[1]
>
> Percy Tipene, Chairman, Te Waka Kai Ora

1 'Hua Parakore official website: https://tewakakaiora.wordpress.com/huaparakore/

Hua Parakore was developed to have a continuum of entry points so cultural, social, environmental and economic outcomes could be realised by whanau (families), hapu (sub-tribal communities) and Iwi (Tribes).

While based on Maori values, Hua Parakore is also a food sovereignty initiative restoring to families and communities the production and selling of traditional foods, grown without chemicals, pesticides, nanotechnology and genetically modified organisms. It is a locally owned and managed verification system which uses a self- evaluation process to demonstrate the implementation of a production system that upholds Maori cultural principles of mana whenua (local indigenous communities) and is a practice of mana motuhake (independence).

Validation and Verification Process

There are three stages to the Hua Parakore validation and verfication process based on self-evaluation. These are:

Stage One: Kakano/seed

Open to all members of Te Waka Kai Ora including individuals, families, communities, schools and organisations. Kakano members

are able to publically support and promote the aspirations of Hua Parakore. Kakano members receive Hua Parakore information resources.

Stage Two: Tipu Ranga/the growing seedling
Members commit to making the transition to a Hua Parakore production system. Producing a healthy product is a process of neutralising all toxins. Both land and people are given the time and support to go through the process of transformation. Tipu Ranga landowners work through the self- evaluation process to develop and implement their Hua Parakore management plan. This process is supported by community elders and Hua Parakore planning resources, farmers and regional officers.

Stage Three: Hua Parakore
Formal recognition is bestowed upon landowners when they achieve Hua Parakore. The use of the Hua Parakore mark is collectively awarded at a formal gathering of community and Te Waka Kai Ora representatives where all present are satisfieded that Hua Parakore status has been achieved. The Hua Parakore mark denotes certified organic status in Aotearoa New Zealand with access to international markets through Native Trade and certified organic pathways.

Early indicators show that stronger links have been made between Hua Parakore producers and the wider organic sector, which has resulted in knowledge exchange of indigenous knowledge and Western organic practices, and that the initial market responses to Hua

Parakore were promising. One pilot farm reported that "Since obtaining the Hua Parakore certification we have used the mark on our Biofarm yoghurt products while in Australia recently, in fact we obtained distribution in the Australian market on the strength of our Maori Organic Certification" (Skelton and Carney, 2010). As of November 2015, nearly 30 growers had enrolled in the scheme. They range from small vegetable growers to a dairy farm that produces BioFarm yoghurt, one of the leading organic yoghurt brands in New Zealand.

Conclusions and Next Steps

Existing Intellectual Property Rights (IPR) based labelling schemes such as collective trademarks and geographical indications can be very burdensome for indigenous peoples to access and in many cases have not delivered benefits for biodiversity and livelihoods. Our two examples of how indigenous schemes can be effective in conserving biodiversity highlight the importance of establishing an alternative indigenous labelling system, designed by indigenous peoples, that is easily accessible to indigenous producers worldwide. The experience of the Potato Park's informal trademark shows that indigenous labelling can be effective for increasing revenues and economic incentives, while strengthening

collective identity and social cohesion needed for conservation. The Maori Organics label provides further evidence of how indigenous labelling , based on self-regulation can contribute to economic, environmental and cultural goals and promote access to foreign as well as domestic markets.

The proposed Biocultural Heritage Indication (BCHI) will build on the basic idea of a geographical 'indication' which links a product to a particular territory and production process, and recognises group rights as opposed to individual rights. It will allow indigenous peoples to define the criteria for use of the label themselves, based on customary laws, with emphasis on self-evaluation and local monitoring. However, some independent oversight will be required to ensure compliance. This could be based on a set of biocultural heritage indicators developed by indigenous peoples. The BCHI could complement existing indigenous labels at local and national levels, providing an independent guarantee of quality and authenticity, and enable many more communities to make use of indigenous labelling. It could be a powerful tool to raise awareness of the holistic indigenous worldview – where biodiversity and culture are inextricably linked – but would require parallel efforts to enhance understanding of the term 'biocultural heritage'.

Financial support will be needed for managing and monitoring the scheme and supporting marketing by indigenous producers. After the consultation process, an international workshop could be convened to design the biocultural heritage indication scheme with indigenous representatives and experts. The next step would be to design the graphic sign itself – this could be done by an indigenous designer. At the same time, we hope that the experiences and ideas presented in this paper will inspire other indigenous peoples to develop their own labelling strategies to protect and promote their inter-linked biological and cultural diversity.

References

Argumedo A. (2013). *Collective trademarks and biocultural heritage: Towards new indications of distinction for indigenous peoples in the Potato Park, Peru*. http://pubs.iied.org/16528IIED.html

Asociacion ANDES and the Potato Park. (2015). *Biocultural Heritage Innovations in the Potato Park. SIFOR Qualitative baseline study, Peru.* http://pubs.iied.org/G03917.html

Carney G. & Takoko M. (2010). *Hua Parakore Verification System*. Ministerial Briefing, July 2010

Dutfield G. (2011). *Intellectual property tools for products based on biocultural heritage: A legal review of geographical indications, trademarks and protection from unfair competition*. IIED London. http://pubs.iied.org/16506IIED.html

Dutfield G., Argumedo A., Swiderska K. (2015). Designing an effective biocultural heritage indication labelling system. Consultation document. http://pubs.iied.org/14655IIED.html

Hutchings J., Tipene P., Carney G., Greensill A., Skelton P. and Baker M. (2012). Hua Parakore: an indigenous food sovereignty initiative and hallmark of excellence for food and product production. MAI Journal, Vol. I Issue 2.

IIED, ANDES, Fundacion Dobbo Yala, Ecoserve, Centre for Indigenous Farming Systems, Herbal and Folklore Research Centre, Centre for Chinese Agricultural Policy, Kenya Forestry Research Institute (2009). Protecting community rights over traditional knowledge. Implications of customary laws and practices. Key findings and recommendations. IIED London. http://pubs.iied.org/14591IIED.html

Pant R. (2015). Protecting and promoting traditional knowledge in India: What role for Geographical Indications? IIED London. http://pubs.iied.org/16576IIED.html

Pilgrim and Pretty (Eds) (2010). Nature and Culture. Rebuilding lost connections. Earthscan.

Reider R. (2015). *Maori Organic Kai*. Element Magazine. New Zealand Herald. http://m.nzherald.co.nz/element-magazine/news/article.cfm?c_id=1503340&objectid=11547402

UNESCO (2003). Language, vitality and endangerment. Ad Hoc Expert Group on Endangered Languages submission to International Expert Meeting, Paris, 10-12 March 2003.

Wekesa C., Leley N., Ndalilo L., Amur A., Uchi S., Swiderska K. (2016). Smallholder Innovation for Resilience. Partner's workshop and policy dialogue. Watamu, Kenya coast. http://pubs.iied.org/pdfs/14665IIED.pdf

10

Do commodity certification systems uphold indigenous peoples' rights? Lessons from the Roundtable on Sustainable Palm Oil and Forest Stewardship Council

Marcus Colchester

10

Do commodity certification systems uphold indigenous peoples' rights? Lessons from the Roundtable on Sustainable Palm Oil and Forest Stewardship Council

Marcus Colchester[1]

Abstract:

Governments' failure to adequately regulate natural resource use to protect environmental values and human rights has led to the development of 'voluntary' certification systems for several commodities. Two systems that have paid most attention to indigenous peoples' rights are the Forest Stewardship Council and the Roundtable on Sustainable Palm Oil. This article briefly reviews the effectiveness of these two schemes to uphold indigenous peoples' rights with respect to: the certification standards adopted, especially on land and consent; indigenous peoples' participation in scheme governance and standard-setting; the accountability of scheme members to affected indigenous peoples; mechanisms to provide redress for violations of rights; and the barriers or incentives for indigenous producers to market certified products.

Certification standards have responded to the evolution of internationally accepted rights of indigenous peoples and pioneered the adoption of Free, Prior and Informed Consent. On the ground, results are more equivocal. Schemes differ in the extent they include indigenous peoples in governance and standard-setting. FSC has a body to ensure indigenous engagement. RSPO has few indigenous members. Both have accountability procedures but their effectiveness is contested. Gaining redress through the grievance procedures has been difficult, although some cases show remedy is possible. Overall, the politics of scheme governance and economies of scale mean large companies dominate markets for certified products, despite concerted efforts to simplify procedures to certify small producers.

Certification schemes seek to go beyond the law but are not above the law and have to operate within national legal frameworks that diminish indigenous rights. Consequently, they cannot fully uphold or remedy rights violations. Ultimately, national legal reforms are necessary to secure indigenous rights. Meanwhile, certification systems provide some, albeit compromised, protection of rights and scope for redress of violations. To maximise their effectiveness, they need to be more rigorous in upholding their own standards.

Keywords: Certification, indigenous peoples, RSPO, FSC, land rights, consent

1 Senior Policy Advisor, Forest Peoples Programme, 1c Fosseway Business Park, Moreton-in-Marsh, GL56 9NQ, England, marcus@forestpeoples.org

Introduction

International awareness of the way State-led development causes unacceptable damage to tropical rainforests and undermines the rights of indigenous peoples grew dramatically during the 1980s (Myers 1985; Caufield 1986). Early campaigns, of what are now known as transnational advocacy networks (Keck & Sikkink 1998), included exposure of the social and environmental destruction being underwritten by international financial institutions, like the World Bank, and United Nations (UN) agencies, such as road-building in the Amazon, dams in India and transmigration in Indonesia (Rich 1985; Kalpavriksh1985; Colchester 1986). Meanwhile, global campaigns against the relentless logging of South East Asian forests by corporations, at the expense of local communities and indigenous peoples, exposed the collusion between State bureaucracies and private companies driven by the global timber trade (Hong 1986; Colchester 1989; Nectoux & Kuroda 1989; SAM 1990; Dauvergne 1997).

It was the dream of conservation bodies and environmental NGOs that, just as international laws had been agreed to establish binding standards upholding human rights and banning slavery and genocide, so international legal agreements could be crafted to prohibit the worst excesses of trade and investment. Key expressions of this growing global awareness were the concept of 'sustainable development' (Brundtland 1987) and the UN Conference on Environment and Development in 1992, at which nations signed the Convention on Biological Diversity and the Framework Convention on Climate Change (Grubb et al 1993).

Parallel to these developments, by the mid-1980s, the UN Centre for Trade and Development had accepted that environmental sustainability considerations should be taken into account in international commodity trades. Provisions to this effect were written into the inter-governmental agreement setting up the International Tropical Timber Organisation (ITTO) in 1983 (Hpay 1985). During the late-1980s, ITTO thus became an active forum at which civil society groups called for regulation of the tropical timber trade and pressed for the adoption of standards not just to restrain overharvesting of timbers but also to insist on legality and respect for indigenous peoples' rights (Colchester 1990).

However, producer countries, led by Malaysia, strongly resisted efforts to prohibit trade in illegal timbers, demand respect for indigenous peoples' rights, and assure sustainable livelihoods for forest peoples. They even blocked pilot schemes to assess the practicality of labelling timbers as to their site or country of origin, so allowing them to be traced through the supply chain (FoE &WRM 1992; Gale 1998).

Moreover, aware that it was unfair to single out tropical timbers, when equally egregious environmental and social problems were associated with logging in boreal and temperate forests, NGOs built up international campaigns to target boreal forest logging (Dudley, JeanRenaud & Sullivan 1995) and later sought to expand the mandate of the ITTO to include temperate and boreal timbers, a position welcomed by tropical timber-producing nations but rejected by northern governments (Mankin 1998).

By the early 1990s, it was already clear to NGOs involved in ITTO that their efforts to transform the timber trade through inter-governmental agreements and regulatory reform were unlikely to be successful, even though they had raised awareness of the human rights and social dimensions of the global forest crisis (Humphrys 2008). It was this realisation that gave rise to the initiative to set up the Forest Stewardship Council (FSC), which was formally inaugurated through an international conference held in Toronto in 1993. Through open membership to CSOs, individuals and companies, FSC set out to agree:

a 'multi-stakeholder' system of governance and consensus-based decision-making; adoption of voluntary standards for forest stewardship and timber trading; mechanisms for independent assessment; accreditation of certification bodies and; mechanisms to ensure transparency, accountability and redress (Elliott 2000). This initiative, which purposefully excluded government representatives, was later copied by similar schemes to certify the responsible or sustainable production of marine resources, palm oil, soy, biofuels, beef, sugar, cotton, shrimp and agricultural produce in general (Chao, Colchester & Jiwan 2012).

Indigenous rights in FSC and RSPO standards

At the time FSC came into being, many participating NGOs envisioned a radical change in forestry practice through a switch from the large-scale, timber-dominated industry that was destroying forests and abusing rights to small-scale, community-based production systems that would accommodate multiple landscape values and be based on social justice (WRM 1989; 1992; Dudley, Jeanrenaud & Sullivan 1995).

This vision provided impetus for the inclusion of indigenous peoples' rights in the FSC's early standard-setting process,[1] which actually began before the Toronto meeting. By this time, through the procedures of the UN and International Labour Organisation (ILO), a concerted movement of indigenous peoples and supportive organisations had already spent well over a decade pushing for the adoption of international norms respecting indigenous peoples' rights, based on recognition of the right of all peoples to self-determination (Falk 1988; Hanum 1990; Niezen 2003; Manela 2007).

One early, albeit partial, expression of this push was ILO's revised Convention 169 on Tribal and Indigenous Peoples, adopted in 1989 (Colchester 1989; MacKay 2003). This was followed by the adoption, in 1993, by UN Human Rights Commission of the draft UN Declaration on the Rights of Indigenous Peoples (UNDRIP). Although, it was to be a further 14 years before the revised UNDRIP was endorsed by the UN General Assembly, the draft shaped international discourse about indigenous peoples and strongly influenced human rights jurisprudence at the UN treaty bodies (MacKay 2005, 2006, 2009, 2011, 2013, 2105) and regional human rights systems (MacKay 2001; Braun & Mulvagh 2003; FPP 2009).

It has thus been clearly established under international law that indigenous peoples enjoy collective rights, as peoples, to: self-determination; survival; subsistence; sovereignty over natural resources; self-governance; self-representation; self-identification; ownership and control of the territories, lands and resources they have traditionally owned, occupied or otherwise used; exercise of their customary law; and control of their intellectual property and cultural heritage. No developments should be carried out on their lands, or measures passed which may affect their rights, without their 'Free, Prior and Informed Consent' (FPIC).

Drawing on these emerging principles of international law, FSC's first Principles and Criteria (P&C) thus required operators to recognise indigenous peoples' customary rights to own, control and manage their lands and forests, and required that both operations by others on their lands, and compensation for the application of their traditional knowledge in management, be subject to the 'free and informed consent' of the peoples' concerned (FSC 1994). Building on lessons learned, these requirements were gradually strengthened. In 2006, FSC issued Guidance on how provisions related to indigenous peoples' rights should be affirmed in national interpretations (FSC 2006). Later iterations of the Generic P&C

1 The early meetings setting up FSC did not actually include Indigenous Peoples directly.

made it clearer that operators should not just recognise and respect indigenous peoples' rights but should demonstrably identify and uphold them (FSC 2012). FSC also developed FPIC Guidelines (FSC 2013), which are now in the process of being reviewed.

As the FSC standard has evolved, in parallel to changes in international law, FSC has also sought to ensure that the standard requirement for the legality of all operations takes into account these advances by requiring compliance with relevant nationally ratified treaties and conventions. The standard also recognises that compliance with specific P&C 'may require compliance with international law even when the conventions have not been ratified nationally' (FSC 2012:4). However, an attempt by FSC's Board to ensure compliance with relevant ILO Conventions and thus the requirement that 'the legal and customary rights of indigenous peoples be legally recognised and respected' (FSC 2002) was considered impractical and was not incorporated into later iterations of the P&C. A major shortcoming of FSC P&C is that they do not require FPIC prior to the issuance of concessions over IP lands, only prior to management (FSC 2012).

Members' concerns, about the environmental impacts of forestry operations, have also strengthened standards in ways that provide additional protection of communities' and indigenous peoples' rights. In 1996, FSC adopted requirements for operators to identify, and then maintain or enhance, High Conservation Values (HCV), which include areas crucial for environmental services, meeting basic needs, and cultural identity, all of which need to be identified through participatory engagement with communities (Brown et al. 2013).

RSPO, which was set up in 2004, benefited greatly from FSC's decade of experience with certification and many of the requirements in the FSC standard were adopted into RSPO P&C (RSPO 2005). However, from the point of view of indigenous peoples, the palm oil sector differs in some important ways from forestry. In most countries, palm oil operations are applied in the agricultural sector, not in areas designated as forests and subject to forestry laws. Natural forest logging, at least in many tropical forests and where done in accordance with forestry laws, only results in the selective extraction of timbers from forests. Although seriously disruptive of local livelihoods and welfare, some indigenous peoples find they can accommodate these impacts without major adjustments to their ways of life. By contrast, oil palm estates, like timber plantations, require large-scale conversion of lands and forests to industrial monocrops and accord long-term tenures or permanent ownership to the operators. Such dramatic transformations of land use require major changes in communities' ways of making a living and imply permanent cultural changes. The land laws usually have the effect of legally extinguishing prior rights in land or convert customary lands into individually-owned properties, subject to the vagaries of land markets.

To try to accommodate this reality in ways consistent with international human rights law, from the outset RSPO P&C include provisions for just land acquisition, as well as requiring recognition of legality including relevant international laws, customary rights to lands, self-representation and recognition of FPIC. RSPO P&C prohibits any land acquisition without FPIC and any clearance of HCVs, after 2005. From the outset, RSPO P&C had clear indicators requiring operators to engage with indigenous peoples and local communities to carry out participatory mapping in order to establish the extent of customary rights prior to agreements about acquiring lands (RSPO 2005, 2013). RSPO also evolved a Guide to FPIC in 2008 (FPP 2008), which was revised in 2015 (RSPO 2015).

From Principles to Practice

How effective have these standards been in changing the way businesses deal with indigenous peoples? Experience has been very mixed. In the case of FSC and the Saami, a traditionally reindeer-herding people of Scandinavia, after protracted negotiations, large-scale timber corporations in Sweden agreed not only to allow Saami herds seasonal access to their management units but also that at least 10% of forests should be retained as old growth, to ensure reindeer could browse pendent lichens during harsh winters (Johansson 1998). However, medium- and small-scale timber operators, who control some 50% of Swedish forests, rejected such standards, fell out with FSC and even successfully prosecuted the Saami in the courts for trespass (Colchester, Sirait & Wijardjo 2003).

In Canada, the experience has also been somewhat positive. Due to the indigenous peoples' strong regional and national organisations and capacity to engage with FSC, (sub-)national interpretations have clearly upheld indigenous peoples' rights (Collier 2002; FSC-BC 2002; Colchester, Sirait & Wijardjo 2003). The standards have taken pains to clarify how the FSC standard applies in the context of Canadian laws and have ensured that, by and large, FSC-certified operations do take some additional measures to recognise indigenous peoples' rights and give them a voice in forest management decisions.

In 2014, FSC launched a new initiative in Canada to strengthen Aboriginal Peoples' rights. As Brad Young, Executive Director of the National Aboriginal Forestry Association, noted: "Free, prior and informed consent is seen as one of the key principles of international human rights law to protect our people from destruction of our lives, culture and livelihood. FSC is the only forest certification system to implement and rigorously apply free, prior and informed consent to their forest management standards" (FSC 2014). The same year, certification bodies suspended an FSC certificate of Resolute, one of Canada's leading timber companies, which was in conflict with the Grand Council of the Cree in northern Quebec, for persistently failing to comply with P&C requirements (Greenpeace 2014).

By contrast, Indonesia has been a problematic test case for FSC, which has struggled to adjust its system to national realities. One detailed review, carried out for FSC in 2003, found that Indonesian national policies and laws, in effect, denied indigenous peoples' rights to control and manage their customary lands and forests, be represented through their own institutions, exercise their customary law and reject timber operations on their lands. Despite the fact that only 10% of forests had been formally gazetted, the Government assumed all forests (covering some 70% of the national territory) were State Forest Areas void of rights. About half this area had been, arguably illegally, leased out to loggers, without any consultation with indigenous peoples let alone their consent. The study showed that some of these timber operations had been FSC-certified, without the development of a national interpretation and even where communities' rights had been ignored in the hand-out of concessions. It revealed that forest gazettement had not been done, and consent procedures had not been complied with. However, companies were nevertheless being certified and required to comply with consent requirements merely as 'Corrective Action Requests', placing communities in a very weak position to insist on changes to operations in ways that gave them real control over their lands and forests (Colchester, Sirait & Wijardjo 2003).

Despite a historic Constitutional Court judgment in 2012 which recognised that, where indigenous peoples' territories overlap forests, these should not be considered State Forest Areas, and despite official recognition that some 50 million people in 33,000 administrative

villages inhabit forests, on the ground there has been very little done to formally recognise communities' rights (Colchester, Anderson & Chao 2014). Yet, almost half a million hectares of Indonesian forests have been FSC certified, many overlapping communities' customary lands. A recent study by the Corruption Eradication Commission reveals that about 80% of timber production in Indonesia dodges formal oversight by the forestry administration (KPK 2015).

Interim findings from field tests of FPIC compliance show that in practice FSC certificate holders are not required to recognise the full extent of indigenous peoples' customary rights and often only obtain partial community consents prior to timber extraction. The procedure is thus not fully upholding indigenous rights (Linforth, van der Vlist & Auger-Schwartzenberg 2015).

Whereas FSC's scope potentially applies to the management of all forests worldwide, RSPO's application is shaped by the fact that 85% of globally traded palm oil is produced in just two countries, Malaysia and Indonesia. Yet, despite this, processes to define national interpretations in Malaysia and especially Indonesia have done little to engage with national indigenous peoples' organisations and have been deficient in clarifying how RSPO P&C as voluntary standards can be applied in ways that conform with, and yet go beyond, the limitations of national law. Thus in Malaysia, where State laws only weakly recognise indigenous peoples' customary rights (Nicholas 2000; Doolittle 2004; Bulan 2012), companies continue to insist that land development in accordance with national laws is all that is required to comply with RSPO P&C.

In Indonesia, despite adoption of the Generic RSPO P&C in 2005, their review and adoption with little change in 2007 and then a national interpretation in 2008, so few companies had adhered to the basic requirements of the P&C by 2012 that the RSPO had to set up a special compensation regime to allow companies to retrospectively make remedy for areas of critical biodiversity (HCV1-3) cleared without a prior HCV assessment. In 2015, RSPO agreed a procedure whereby these companies should also compensate communities, including indigenous peoples, for any clearance of HCVs 4-6 between 2005 and 2014 (RSPO 2015).

Since 2006, detailed NGO legal and field research in Indonesia showed that the government procedure for allocating leases of land to palm oil plantations had the effect of permanently extinguishing indigenous peoples' rights to their lands, yet most indigenous communities agreeing to compensation payments from oil palm companies thought they were accepting companies to temporarily occupy their lands (Colchester et al 2006). The national interpretation adopted two years later incorporated no measures to address this major loophole. Asked why companies did not inform communities during land acquisition that this would have the effect of permanently extinguishing their rights, a company employee responded: 'Oh, but they'd never sign if we told them that!' (Anonymous planter in West Kalimantan to author 2009)

A wide-ranging review by NGOs of 17 different palm oil developments in Philippines, Thailand, Malaysia, Indonesia, Democratic Republic of Congo, Cameroon and Liberia showed that even prominent RSPO member companies are failing to adhere to the RSPO P&C with respect to indigenous peoples (Colchester & Chao 2013; see also Colchester & Chao 2012). The studies detailed how land grabs continue, communities are not being enabled to represent themselves through institutions of their own choosing, crucial information is not being shared, participatory mapping is not being carried out and, where compensation is being paid, lands are being acquired from individuals, ignoring collective rights and customary systems of land tenure and transfer. Underlying these

problems is the fact that governments hand out concessions, and companies accept them, without regard to indigenous peoples' rights to their lands and FPIC (more recent studies show this problem recurring in Colombia (EIA 2015), Peru (FPP 2015a), and Liberia (FPP 2015b; SDI 2016; SesDev 2016)). Despite the clear requirements of RSPO P&C to respect indigenous peoples' rights, land-grabbing based on imposed concessions remains the norm.

All this raises the question, why are FSC and RSPO certifying continuing violations of indigenous peoples' rights? This requires a more detailed answer than can be accommodated here but points to a major weakness in both systems: companies directly pay the Certification Bodies (CBs), which audit their operations (Counsell & Lorass 2002), yet CBs have enormous discretion in interpreting the standards and are weakly accountable (EIA 2015).

Certifying small producers

If the original vision of many NGOs engaging in the FSC was to shift forestry in favour of community management, they have been disappointed. It became clear early on that community-based operations needed a lot of technical and financial assistance to demonstrate reasonable levels of forest management and compliance with FSC's quite onerous requirements (e.g. Stocks & Hartshorn 1993). Even though real environmental and social gains could be demonstrated through community management (e.g. Snook 2005), the initial and then recurrent costs of compliance and paying for audits were hard for small enterprises to bear. Although FSC's earliest certificates were for community forestry operations, for multiple reasons - economies of scale, company domination of national interpretations, the importance attached by FSC's board to reaching production targets by area and volume, as well as the obstacles to community compliance – already by 2000 90% of FSC certified forests were run by companies, individuals and public bodies, not communities (Thornber & Markopoulos 2000; Robinson & Brown 2002; Counsell & Lorass 2002).

FSC pioneered numerous measures to encourage the certification of community forestry. It pooled lessons through a Social Working Group, it actively recruited members for the Social Chamber, and in 1998 it established a system for Group Certification, whereby small-scale producers could group together to be certified, thereby reducing transaction costs. Within four years FSC could boast certification of 1 m ha. of community forests in 7,500 operations in 23 countries (Colchester, Apte, Laforge, Mandondo & Pathak 2003). In 2004, FSC also adopted a simplified set of requirements to make it easier to certify Small and Low-Intensity Managed Forests [SLIMF] (FSC 2004). Despite all these efforts, community forests comprise a declining proportion of FSC certifications. By 2016, although FSC certified community forests now cover over 4 m ha., they make up only 2.16% of the total 187 m ha. of FSC certified forests (FSC 2016). By comparison, the Rights and Resources Initiative estimates that about 15% of forests worldwide are currently under communities' and indigenous peoples' ownership and / or management.[1]

Again learning from the FSC experience, in RSPO, in 2005 NGOs took the initiative to pass a membership resolution setting up the RSPO Task Force on Smallholders with the aims of pooling lessons, directly involving smallholders, adjusting the P&C to accommodate their realities, and developing mechanisms for scheme and group certification. Initial surveys showed that between 10 and 30 % of palm oil production was coming from smallholdings (Vermeulen & Goad 2006). A survey by NGO members of RSPO identified major problems faced by Indonesian smallholders in getting fair prices for their land, labour and palm fruits.

1 http://www.rightsandresources.org/en/resources/tenure-data/tenure-data-tool/

Indonesian smallholders also noted that they lacked an autonomous organisation to represent their interests and set about creating SPKS (*Serikat Petani Kecil Sawit* – Union of Oil Palm Smallholders) (Colchester & Jiwan 2006), which now has active chapters in several provinces around Indonesia.

Meanwhile the Task Force developed simplified standards for the certification of Scheme Smallholders (ie those contractually bound to specific mills), adopted in 2009, and for the group certification of independent smallholders (ie those free to choose to which mills they sell fruits), adopted in 2010 (Colchester 2011). The Task Force also called for the setting up of a special fund to help smallholders to get organised, improve productivity and get certified. By 2014, RSPO's Smallholder Support Fund (RSPO 2014), which is allocated a percentage of RSPO's gross revenues, already had assets of approximately US$6 million (RSPO 2014), a sum which increases annually, as income currently exceeds expenditure.

Like FSC and despite these efforts, RSPO has struggled to get smallholders certified. It was only in 2015 – after 5 years of delays – that RSPO agreed a simplified procedure for independent smallholders to carry out HCV assessments in existing plantings. An equivalent procedure is still lacking for new plantings. Clearly, certifying competing independent growers has not been a high priority for an organisation dominated by large corporations. Consequently, although by February 2016, RSPO had certified 2.8 m ha. producing 13.3 m tonnes of Certified Sustainable Palm Oil (CSPO) (RSPO 2016a), comprising an estimated 21% of globally traded palm oil (RSPO 2016b), only about 12% of this CSPO comes from certified smallholder schemes, contractually linked to large estates and mills. Less than 0.4% CSPO comes from group certifications of independent smallholders (Julia Majail pers. comm. 2 March 2016).

Despite good intentions and valiant efforts by some, certification acts as a barrier to smallholder access to markets and favours large-scale producers, thus skewing markets in favour of large businesses.

Participation in scheme governance and standard setting

One aim of multi-stakeholder processes is to ensure the direct involvement of affected parties so they can have a say in decision-making based on 'balanced' representation. The assumption is questionable, not least because it gives equivalent voice to very diverse players, thus elevating, for example, distant retail companies and investors to the same status as rights-holders, such as indigenous peoples, who under international law are the ones who should actually control the lands and forests in contention. The risk is that these processes, may not only disguise existing power inequalities but also exacerbate them by reinforcing mainstream discourses, disqualifying alternatives and excluding alternative ways of achieving sustainable development (Cheyns & Riisgaard 2014; Cheyns 2014).

Be that as it may, FSC set out from the start to balance decision-making by creating diverse chambers of members from economic, environmental and social sectors with the aim that no one chamber could dominate another. Indigenous peoples found themselves pigeon-holed as members of the 'social' chamber, to which they objected, noting that their interests in forests are social, environmental and economic. When this issue came to the fore, as Canada began its process of developing national interpretations, it was resolved that indigenous peoples should occupy a fourth chamber, a measure that led to the relatively successful outcomes in Canada, as noted above. At the international level, after several years of negotiation, FSC was persuaded by indigenous peoples, in 2013, to adopt a Permanent Indigenous Peoples' Commission, in direct

communication with FSC Secretariat and Board.[1]

However, such practices are far from general in FSC. In Malaysia, for example, indigenous peoples have struggled to be heard in FSC-sponsored processes and have opted to leave when, for example, they were prevented from even discussing the way the gazettement of forests as Permanent Forest Estate led to the extinguishment of indigenous rights (and see Yong 2002).

RSPO has also encountered serious challenges to the inclusion of indigenous peoples in decision-making. Given that few indigenous peoples are traditionally engaged in the global palm oil trade,[2] they have not mobilised to join RSPO and only get embroiled in its procedures when they find RSPO member companies have secured concessions to establish plantations on their ancestral lands. The result is that, with only a few exceptions, indigenous peoples' interests have been projected into RSPO via intermediary organisations not by the peoples themselves.

This reality places RSPO in a quandary. Indigenous peoples and local communities are not members of RSPO, do not participate in its governance system (with the partial exception of smallholders, some of whom are indigenous), yet are indubitably 'primary stakeholders' in terms of land. Moreover, as noted below, the majority of complaints against RSPO members derive from land disputes.

In 2014, the RSPO Board sought to remedy this glaring gap by commissioning a review of the potential to reach out to indigenous peoples and local communities through intermediary organisations, such as NGOs, trades unions, religious bodies and others. However, although a detailed survey was carried out and an action plan developed and agreed by the Board (FPP 2014), RSPO delayed acting on the proposal for over 18 months. It remains to be seen if RSPO can match FSC in improving indigenous peoples' participation in scheme governance.

Accountability and Redress

It is a norm of human rights law that violation of a human right gives rise to a right of reparation for victims of that violation. Such remedy can take the form of restitution, compensation, rehabilitation, satisfaction and / or guarantees of non-repetition. The UN Guiding Principles on Business and Human Rights encourage companies to use non-judicial mechanisms to complement state-based judicial processes and note that such systems should be: accessible, predictable, equitable, transparent, and provide for continuous learning and dialogue. Importantly, they should also be 'rights-compliant', meaning they should ensure outcomes and remedies accord with internationally-recognised human rights (Jonas 2014).

Both FSC and RSPO have adopted procedures which allow parties to file complaints and seek redress but the extent to which these non-judicial procedures satisfy human rights requirements is contested. The main aim of their procedures is dispute resolution rather than to remedy human rights abuse.

FSC has two main levels for complaints. Complainants are expected to first address their grievances through the CB assessing company performance and then, if not satisfied, to Accreditation Services International, which reviews CB performance. These complaints are not listed on either FSC or ASI websites. There is widespread dissatisfaction among indigenous peoples about this process and the perceived failure of FSC to uphold community rights transparently (van der Vlist & Richert

1 FSC also has a permanent staff member, Social Policy Manager, charged with communicating with communities. RSPO lacks any such post.

2 A partial exception is Nigeria where palm oil trading commenced in the pre-colonial era (Robinson, Gallagher & Denny 1965)

2014). Some complaints do get escalated as challenges to companies' continued membership ('association') of FSC and these are listed on the FSC website. Relatively few such complaints concern violation of the rights of indigenous peoples and none has been filed by indigenous peoples themselves. In the case of the plantation company Bosques Cautin, in Chile, the company was accused by Agrupacion de Ingenieros Forestales para el Bosque Nativo of making racist remarks towards the Mapuche indigenous people of the area. FSC took the case very seriously and required the company to apologise. This case is still ongoing (FSC 2016). In another case, Greenpeace International alleged a series of non-compliances by the logging company SODEFOR in the Democratic Republic of Congo, including violations of human rights and traditional rights. Although the Complaints Panel upheld core elements of the case and the certificate remained suspended, the Panel could reach no conclusion on the allegation of human rights abuse as there was insufficient evidence (FSC CP 2012). The case highlights the problem that such non-judicial processes face: they often lack the resources to undertake field verification.

An instructive case where field verification did take place, concerns another complaint by Greenpeace International against the logging company Danzer and the actions of its subsidiary operation, SIFORCO, in the Democratic Republic of Congo. The company was required to undertake remedial actions to compensate the Yaliskia communities for losses. In this case, FSC asked Forest Peoples Programme (FPP) to undertake a field investigation to check if the company had fulfilled the remedial requirements. FPP found that several promised clinics and schools had not been completed and identified weaknesses in the manual on avoiding community conflicts, developed by the company to avoid recurrence. Underlying this weak performance were non-compliances in mapping community lands and ensuring operations were subject to FPIC. Danzer was required to take further actions to bring itself into compliance. Although Danzer sold SIFORCO, it agreed to a further field investigation by FPP both of SIFORCO and its newly acquired operation in the Republic of Congo, to the north. This time FPP found that compensatory buildings had been constructed and the manual had been revised to align with FSC requirements, including with respect to lands and FPIC (Nelson & Kipalu 2014).

In 2014, Global Witness filed a complaint against the Vietnam Rubber Group (which had FSC certified operations in Vietnam) for serious violations of community rights in its operations in North East Laos. FSC upheld the complaint, finding VRG had indeed taken land without due compensation, without FPIC, and required the company 'to fully compensate stakeholders that were inadequately compensated for their losses, to ensure that all companies have carried through an environmental impact assessment and to make additional significant long term contributions to the conservation of key biodiversity areas or protected areas negatively affected by the conversion activities.' VRG has been dissociated from FSC until it undertakes these actions (FSC 2016c).

RSPO started to receive complaints about violations by members in 2006 but only formally established a functioning Complaints Panel in 2010. It has since been inundated by increasing numbers of complaints, a majority of which relate to land disputes with indigenous peoples. In Malaysia, where customary law is recognised as a source of rights, hundreds of cases of land disputes have been filed in the courts. By contrast, in Indonesia, despite the fact that there are some 4,000 land disputes registered by the National Land Bureau, very few cases have been taken to the courts as laws do not uphold indigenous peoples' rights and judiciary lacks independence (BPN 2012). Consequently, with the support of NGOs, numerous complaints have been filed with the RSPO Complaints Panel against RSPO member companies (Colchester

2010). By January 2016, RSPO has registered 56 complaints filed with RSPO since 2010, two thirds of which pertain to Indonesia and 41% being about violations of FPIC (RSPO 2016).

Like FSC, the strong emphasis of RSPO CP has been to encourage dialogue and dispute resolution, and some complainants contend this has been at the expense of making judgments about the merits of the complaints (Lomax 2014; Jonas 2014). RSPO has also adopted a Dispute Settlement Facility which seeks to provide mutually agreed mediators to help sort out conflicts between communities and companies. In addition, several cases have been addressed through the Compliance Advisor Ombudsman (CAO) of the International Finance Corporation, a member of RSPO.

Two additional requirements of RSPO do render member companies more accountable. The first is the New Plantings Procedure, adopted in 2010, by which companies post on RSPO's website audited summaries of their Social and Environmental Impact Assessments, HCV Assessments and (ongoing) FPIC procedure 30 days before any land clearance. This gives communities a slim chance to challenge companies before their lands are cleared. RSPO procedures also make any certification of a company's operation conditional on there not being major problems with any of the same corporate group's other majority-owned operations. The measure is meant to prevent companies 'greenwashing' their profile by having a single, model operation disguise wider non-compliances.

Overall, there has been a great deal of frustration among communities and NGOs with RSPO's procedures. Complaints Panel procedures have been tardy, unclear and un-transparent while decisions have been inconsistent and have not upheld the RSPO standard (Lomax 2014; Jonas 2014). From the point of view of communities, the complaints process is complicated & bureaucratic and only accessible with the support of local or international NGOs. Yet, there have been gains, as some Complaints Panel decisions and CAO procedures have upheld complaints. Some communities have got their lands back. Some have secured agreed compensation for losses and damages. Additional areas have been set aside for livelihoods and conservation. Benefit-sharing, infrastructural provisions and smallholdings have been increased in some places. And sometimes interim gains are also valued such as: the temporary freezing of land clearance; formal recognition of the legitimacy of community concerns; increased publicity, making community concerns more visible; getting the company to the negotiating table with communities and their advisors; and improvements in companies' standard operating procedures (Lomax 2014).

Since the critical review of the complaints panel procedure (Jonas 2014) and the endorsement of the report's main recommendations by RSPO Board of Governors, there are a few signs that RSPO's complaints system is becoming more independent, better resourced and more agile, transparent and professional. In March and May 2015, in response to a detailed complaint by FPP showing that Indonesia's largest palm oil company, Golden Agri-Resources (GAR), was taking land without proper FPIC, the RSPO Complaints Panel concluded that GAR was in violation of RSPO P&C (FPP 2015c) and ordered GAR to halt clearing or acquiring any land until the complaint had been addressed (FPP 2015d). The ruling applies to 18 of GAR's concessions totalling some 300,000 ha. GAR is now engaged in a long drawn out process to make remedy to the affected indigenous peoples and local communities. On the other hand, a weak ruling on the case of Golden Veroleum Limited in Liberia (FPP 2016a) and long delays in reaching a judgment about the way Wilmar International acquired a lease over Minangkabau lands in West Sumatra after the community had expressly asked the company not to (FPP 2016b), are examples of the

continuing frustration communities experience in getting redress through the RSPO Complaints Panel (RSPO 2016c).

These examples show that the RSPO and FSC complaints procedures still have a long way to go before they can be considered fully compatible with UN requirements.

Ways forward

> In the end, the acquisition of [Indian] land in North America is a story of power, of the displacement of the weak by the strong; but it was a more subtle and complex kind of power than would have been necessary to seize land by force. It was the power to supplant Indian legal systems with the English legal system, the power to have land disputes decided by English officials using English law rather than Indian officials using Indian law. The threat of physical force was always present, but most of the time it could be kept out of view, because most of the time it was not needed.
>
> Stuart Banner, 2005, *How the Indians Lost their Land*:82-83

Systems to improve the way resources are produced and traded through voluntary standards and certification have been adopted because inter-governmental processes have resisted binding, global obligations. Yet, although certification systems seek to go voluntarily beyond the limitations of national law, they are not above the law and have to be framed by national laws. Therein lies the dilemma for indigenous peoples. They want certification systems and companies to respect their rights based on their own customs and laws, but the companies being certified are authorised to use indigenous peoples' lands and forests based on hegemonic legal systems that deny or diminish these rights.

FPIC is advocated as an adaptable process that can help equalise these relations by seeking to shift the locus of decision-making from companies and governments to indigenous peoples, based on their own norms and systems of representation and in accordance with customary law (Doyle 2015). Inter-cultural commercial relations inevitably require some compromise - the creation of 'Middle Ground' (White 1991; Colchester & MacKay 2004). An acceptance of legal pluralism can further help engender equitable, intercultural engagement (Colchester & Chao 2013). However, once FPIC gets articulated and adjudicated through soft law P&C and non-judicial complaints procedures, the autonomy of indigenous peoples becomes heavily constrained and only with the greatest resolve and with strong NGO support are positive outcomes possible (Afrizal 2015). Moreover, such resolve is all too easily subverted by bribery and skulduggery (Colchester & Chao 2013; Foster 2015).

The experience of indigenous peoples in FSC and RSPO is by no means wholly negative but it is compromised, not just by multi-stakeholder standard-setting and external audits, but also by the wider normative frameworks in which they are embedded. Ineluctably, conflict resolution mechanisms, such as the IFC's CAO and the RSPO and FSC Complaints Panels, require indigenous peoples' to seek settlement within normative systems that are not their own, with the result that solutions are made that may, at best, mitigate rather than fully resolve conflicts (Balaton-Chrimes & Haines 2015).[1]

The fundamental problem is that forestry, land and plantation laws deny indigenous peoples'

1 In their insightful analysis of IFC CAO, Balaton-Chrimes & Haines describe such processes as 'depoliticising development' but to my eye such procedures are highly political exactly because they impose 'a subtle kind of power' over indigenous peoples' lands.

rights to own, control and manage their lands and forests. Instead national laws tend to treat indigenous peoples' territories as State lands and State forests and give preferential access to corporations. States use their power to enforce these arrangements when indigenous peoples resist.

For example, after long delays, RSPO upheld a complaint that RSPO member IOI Group's subsidiary IOI-Pelita had taken over customary lands in Sarawak without consent and ruled IOI must provide remedy to affected Dayak communities in line with P&C, despite a High Court ruling that formally these rights had been extinguished when the disputed area was designated a protected forest before being de-gazetted and licensed to IOI (Colchester, Jalong & Wong 2013). However, notwithstanding, RSPO has been unable to oblige IOI to make such remedy and conflict resolution is now being mediated by local government. While the details of the negotiations are confidential to the parties, it is known that the offers are not based on recognition of the indigenous peoples' rights, as the government insists these were extinguished.

Another example comes from Wilmar subsidiary, PT Asiatic Persada, which had taken over indigenous lands in Jambi, Indonesia, without consent or compensation. After a long-running dispute and efforts by CAO to mediate a solution, Wilmar called in the local mobile police brigade, who drove the indigenous peoples off their lands at gun point, while PT AP operatives bulldozed their houses into the nearby creeks (Colchester et al 2011). After further complaints and during mediation by CAO, Wilmar then sold off the concession. The situation remains unresolved, yet Wilmar remains a certified member of RSPO.

Ultimately, these kinds of abuses can be ended only by national legal reforms which uphold indigenous peoples' rights and end the colonial concession system designed to facilitate the take-over of native lands by foreign companies (Birmingham & Martin 1985; Stoler 1985; Pourtier 1989; Bryant 1997; Li 2015a, 2015b). In the meantime, indigenous peoples may decide that certification systems are better than nothing (Lomax 2014). Even so, more can be done. Certification schemes should better enforce their standards and penalise members for violations. They should also ensure more direct indigenous participation in all their activities.

References:

Afrizal (2015) Third-Party Interventions in Terminating Oil Palm Plantation Conflicts in Indonesia: a structural analysis. *Sojourn: Journal of Social Issues in Southeast Asia* 30(1):141-172.

Balaton-Chrimes, Samantha & Fiona Haines (2015) The Depoliticisation of Accountability Processes for Land-Based Grievances, and the IFC CAO, *Global Policy* 6(4):446-454.

Banner, Stuart, 2005, *How the Indians Lost their Land: Law and Power on the Frontier,* Harvard University Press, Cambridge Mass..

Birmingham, David, & Phyllis M. Martin (Eds.) (1983) *History of Central Africa*. Vol 2, Longman, London.

BPN, 2012, Presentation to RSPO Roundtable Meeting in Kuala Lumpur, November 2012.

Braun, Treva & Lucy Mulvagh (2008) The African Human Rights System: a guide for indigenous peoples, Forest Peoples Programme, Moreton-in-Marsh.

Brown, E., N. Dudley, A. Lindhe, D.R. Muhtaman, C. Stewart, & T. Synnott (eds.) (2013) *Common guidance for the identification of High Conservation Values*. HCV Resource Network.

Brundtland, Gro H. (1987) *Our Common Future*, Oxford University Press, Oxford.

Bryant, Raymond (1997) *The Political Ecology of Forestry in Burma 1824-1994,* University of Hawaii Press, Honolulu.

Bulan, Ramy (2011) Legal Pluralism in Sarawak: an approach to customary laws on their own terms under the Federal Constitution, In: Marcus Colchester & Sophie Chao (eds.) *Divers Paths to Justice: legal pluralism and the rights of indigenous peoples in Southeast Asia*, Forest Peoples Programme and Asia Indigenous Peoples Pact, Chiang Mai:40-65.

Caufield, Catherine (1986) *In the Rainforests*, University of Chicago Press, Chicago.

Chao, Sophie, Marcus Colchester & Norman Jiwan (2012) *Securing rights through commodity roundtables? A comparative review*, Forest Peoples Programme, Moreton-in-Marsh.

Cheyns. E. (2014) Making 'minority voices heard in transnational roundtables: the role of local NGOs in reintroducing justice and attachments, *Agric. Hum. Values* 31:439-453).

Cheyns, E. & L Riisgaard (2014) The exercise of power

through multi-stakeholder initiatives for sustainable agriculture and its inclusion and exclusion outcomes *Agric. Hum. Values* 31:409-423;
Colchester, Marcus (1986) The Struggle for Land: tribal peoples in the face of the Transmigration Programme. *The Ecologist* 16 (2/3):8998.
Colchester, Marcus (1989) *Pirates, Squatters and Poachers: the Political Ecology of Dispossession of the Native Peoples of Sarawak.* Survival International and INSAN, Kuala Lumpur. 2 editions.
Colchester, Marcus (1989) Indigenous Peoples and the International Labour Organisation. *Interights bulletin* 4(3):4345.
Colchester, Marcus (1990) The International Tropical Timber Organisation: kill or cure for the rainforests? *The Ecologist* 20(4):166173.
Colchester, Marcus, Tejaswini Apte, Michel Laforge, Alois Mandondo & Neema Pathak (2003) *Bridging the Gap: Communities, Forests and International Networks. Synthesis Report of the Project 'Learning Lessons from International Community Forestry Networks',* CIFOR Occasional Paper No. 41, Bogor.
Colchester, Marcus, & Fergus MacKay (2004) *In Search of Middle Ground: Indigenous Peoples, Collective Representation and the Right to Free, Prior and Informed Consent.* Forest Peoples Programme. Moreton in Marsh.
Colchester, Marcus, Norman Jiwan, Andiko, Martua Sirait, Asep Yunan Firdaus, A. Surambo & Herbert Pane (2006) *Promised Land: Palm Oil and Land Acquisition in Indonesia – Implications for Local Communities and Indigenous Peoples.* Forest Peoples Programme, Sawit Watch, HuMA and ICRAF, Bogor.
Colchester, Marcus, & Norman Jiwan (2006) *Ghosts on our own land: oil palm smallholders in Indonesia and the Roundtable on Sustainable Palm Oil.* Forest Peoples Programme and SawitWatch, Bogor.
Colchester, Marcus (2010) *Palm Oil and Indigenous Peoples of South East Asia: land acquisition, human rights violations and indigenous peoples on the palm oil frontier,* Forest Peoples Programme, Moreton-in-Marsh and International Land Coalition, Rome.
Colchester, Marcus (2011) *Oil Palm Smallholders and the RSPO: towards certification and sustainable production.* Roundtable on Sustainable Palm Oil, Kuala Lumpur.
Colchester, Marcus, & Sophie Chao (eds.) (2011) *Oil Palm Expansion in South East Asia: trends and implications for local communities and indigenous peoples,* SawitWatch and Forest Peoples Programme, Bogor.
Colchester, Marcus, Patrick Anderson, Asep Yunan Firdaus, Fatilda Hasibuan & Sophie Chao (2011) *Human rights abuses and land conflicts in the PT Asiatic Persada concession in Jambi: report of an independent investigation into land disputes and forced evictions in a palm oil estate*, Forest Peoples Programme, SawitWatch and HuMa, Moreton-in-Marsh, Bogor and Jakarta.
Colchester, Marcus & Sophie Chao (eds.) (2012) *Divers Paths to Justice: Legal Pluralism and the Rights of Indigenous Peoples in South East Asia,* Asian Indigenous Peoples Pact and Forest Peoples Programme, Chiang Mai.
Colchester, Marcus, Thomas Jalong & Wong Meng Chuo (2012) *Sarawak: IOI-Pelita and the community of Long Teran Kanan,* Forest Peoples Programme, Moreton-in-Marsh.
Colchester, Marcus & Sophie Chao (Eds.) (2013) *Conflict or Consent? The Oil Palm Sector at a Crossroads*, Forest Peoples Programme, Moreton-in-Marsh: http://www.forestpeoples.org/sites/fpp/files/publication/2013/11/conflict-or-consentenglishlowres.pdf
Colchester, Marcus, Norman Jiwan & Emilola Kleden (2014) *Independent review of the social impacts of Golden Agri Resources' Forest Conservation Policy in Kapuas Hulu District, West Kalimantan*. Available at: http://www.forestpeoples.org/sites/fpp/files/publication/2014/01/pt-kpc-report-january-2014final.pdf
Colchester, Marcus, Patrick Anderson & Sophie Chao (2014) *Assault on the Commons: Deforestation and the Denial of Forest Peoples' Rights in Indonesia.* Forest Peoples Programme, Moreton-in-Marsh.
Counsell, Simon, & Kim Terje Lorass (2002) *Trading in Credibility: the myth and reality of the Forest Stewardship Council,* Rainforest Foundation UK, London.
Dauvergne, Peter (1997) *Shadows in the forests: Japan and the tropical timber trade in Southeast Asia.* MIT Press, Los Angeles .
Doolittle, Amity (2004) Property and Politics in Sabah, Malaysia: Native Struggles over Land Rights, University of Washington Press, Seattle.
Doyle, Cathal (2015) *Indigenous Peoples, Title to Territory, Rights and Resources: the transformative role of free, prior and informed consent*, Routledge, London
Nigel Dudley, Jean-Paul Jeanrenaud, Francis Sullivan (1995) *Bad Harvest: The Timber Trade and the Degradation of Global Forests,* Routledge, London.
EIA (2015a) *Mapiripán: Between Water and Oil Palm,* Environmental Investigation Agency, London. https://www.youtube.com/watch?v=6q2RU_8RRTc
EIA (2015b) *Who Watches the Watchmen*? Auditors and the Breakdown of Oversight in RSPO, Environmental Investigation Agency, London.
Elliott, Chris (2000) *Forest Certification: a policy perspective*, CIFOR, Bogor.
Falk, Richard (1988) The Rights of Peoples (in particular indigenous peoples), In: Crawford, James (ed.) (1988) *The Rights of Peoples*, Clarendon Press, Oxford:17-38.
Foster, George K. (2015) Combating Bribery of Indigenous Leaders in International Business, *Columbia Journal of International Law* 54: 59-115.
FoE & WRM (1992) *The International Tropical Timber Agreement: Conserving the Forests or Chainsaw Charter? A critical review of the first five years' operations of the International Tropical Timber Organization,* Friends of the Earth and World Rainforest Movement, London.
FPP (2008) *RSPO and FPIC: a guide for companies*, RSPO, Kuala Lumpur
FPP (2009) *Land Rights in Africa: a guide for indigenous peoples,* Forest Peoples Programme, Moreton-in-Marsh.
FPP (2014) *Intermediary Outreach and Engagement in Producing Countries: Status Assessment and Outreach Plan*, RSPO, Kuala Lumpur.
FPP (2015a) Complaint letter to RSPO. http://www.forestpeoples.org/topics/palm-oil-rspo/news/2015/12/indigenous-peoples-organisation-feconau-and-indigenous-community-p
FPP(2015b) *Hollow Promises: an FPIC assessment of Golden Veroleum and Golden Agri-Resource's palm oil project in south east Liberia*, Forest Peoples

Programme, Moreton-in-Marsh, England.
FPP (2015c) Retrieved at: http://www.forestpeoples.org/topics/agribusiness/news/2015/03/forest-peoples-programme-complaint-against-golden-agri-resources--0
FPP (2015d) Retrieved at: http://www.forestpeoples.org/topics/palm-oil-rspo/news/2015/05/expansion-indonesia-s-largest-palm-oil-company-frozen-disobeying-r
FPP (2016a) Retrieved at: http://www.forestpeoples.org/topics/agribusiness/news/2016/03/sdisesdevfpp-letter-expressing-dissatisfaction-rspo-complaints-pane
FPP (2016b) Retrieved at: http://www.forestpeoples.org/topics/agribusiness/news/2016/02/maninjau-resolution-0
FSC (1994) FSC International Standard: FSC Principles and Criteria for Forest Stewardship, FSC-STD-01-001 EN, Forest Stewardship Council, Bonn.
FSC (2002) *FSC Certifications and the ILO Conventions.* Forest Stewardship Council, Working Document, Oaxaca.
FSC (2006) FSC Guidance Document on Principles 2 and 3: Guidance on Interpretation. FSC-GUI-30-004. Forest Stewardship Council, Bonn.
FSC (2012) Guide to the Revised Principles and Criteria (FSC STD-01-001-V5-0 D5-0), Forest Stewardship Council, Bonn.
FSC (2013) *FSC guidelines for the implementation of the right to free, prior and informed consent (FPIC),* Forest Stewardship Council, Bonn.
FSC (2014) Forest Stewardship Council (FSC) launches leading initiative to Strengthen Aboriginal Peoples' Rights in Canadian Forests, http://www.bloomberg.com/article/2014-01-27/a65iL7zOJpSM.html
FSC (2014) Processing Complaints in the FSC® Certification Scheme FSC-PRO-01-008 (V2-0) EN, Forest Stewardship Council, Bonn.
FSC (2016) FSC Facts & Figures, February 4, 2016, Forest Stewardship Council, Bonn.
FSC (2016b) International Generic Indicator FSC-STD-60-004 V1-0 EN, Forest Stewardship Council, Bonn.
FSC (2016c) Retrieved at: https://ic.fsc.org/en/stakeholders/dispute-resolution/current-cases/bosques-cautin
FSC (2016d) Retrieved at: https://ic.fsc.org/en/stakeholders/dispute-resolution/archived-cases/vietnam-rubber-group-vrg
FSC CP (2012) Clarification of Complaints Panel recommendations regarding the Greenpeace complaint against SODEFOR in the Democratic Republic of Congo, Forest Stewardship Council, Bonn.
Gale, Fred P. (1998) *The Tropical Timber Trade Regime.* MacMillan Press, London.
Greenpeace International (2014) Resolute complaint
Grubb, Michael, Matthias Koch, Abby Munson, Francis Sullivan & Koy Thomson (1993) *The Earth Summit Agreements: a guide and assessment,* Earthscan, London.
Hanum, Hurst, (1990) *Autonomy, Sovereignty and Self-determination: the accommodation of conflicting rights*, University of Pennsylvania Press, Philadelphia.
Hong, Evelyn (1986) *Natives of Sarawak: Survival in Borneo's Vanishing Forests*, Institut Masyarakat, Penang.
Hpay, Terence (1986) *The International Tropical Timber Agreement: its prospects for tropical timber trade, development and forest management*, IIED, London.
Humphrys, David (2008) *Logjam: Deforestation and the Crisis of Global Governance*, Cambridge University Press, Cambridge.
Johansson, Olof (1998) Reindeer Herding and Forestry in Northern Sweden: a case study about conditions, problems and possible solutions regarding the relationship between forestry and reindeer-herding, ms.
Holly C. Jonas (2014) *A Review of the Complaints System of the Roundtable on Sustainable Palm Oil: Final Report*. Natural Justice: Sabah, Malaysia. http://www.rspo.org/news-and-events/announcements/a-review-of-complaints-system-of-the-rspo-final-report
Keck, Margaret E. & Kathryn Sikkink (1998) *Activists Beyond Borders: Advocacy Networks in International Politics*, Cornell University Press, New York.
Kalpavriksh (2005) The Narmada Valley Project – Development or Destruction? *The Ecologist* 15(5/6): 265-298
KPK (2015) *Preventing State Losses in Indonesia's Forestry Sector: an Analysis of Non-tax Forest Revenue Collection and Timber Production Administration*, Directorate of Research and Development, Corruption Eradication Commission, Jakarta.
Li, Tania Murray (2015a) *Social Impacts of Palm Oil in Indonesia: a gendered perspective from West Kalimantan*, CIFOR, Bogor
Li, Tania Murray (2015b) *Infrastructural violence and the monopoly system in Indonesia's oil palm plantation zone*, presentation to CIRAD, Montpellier, http://www.msh-m.tv/spip.php?article642
Linforth, Vanessa, Leo van der Vlist, Mathieu Auger-Schwartzenberg (2015) Safeguarding rights in the forest: Free, prior and informed consent requirements in the Forest Stewardship Council forest management standard. Paper presented to the XIV WORLD FORESTRY CONGRESS, Durban, South Africa, 7-11 September 2015.
Lomax, Tom (2014) *Asserting community land rights using RSPO complaint procedures in Indonesia and Liberia,* International Institute for Environment and Development, London.
MacKay, Fergus (2001) *A Guide to Indigenous Peoples' Rights in the Inter-American Human Rights System*. Forest Peoples Programme, Moreton-in-Marsh.
MacKay, Fergus (2003) *A guide to indigenous peoples' rights in the International Labour Organisation*, Forest Peoples Programme, Moreton-in-Marsh.
MacKay, Fergus (2005) *Indigenous Peoples and United Nations Human Rights Treaty Bodies: A Compilation of Treaty Body Jurisprudence.* Volume I: 1993 – 2004. Forest Peoples Programme. http://www.forestpeoples.org/sites/fpp/files/publication/2010/09/unjurisprudencecompsept05eng.pdf
MacKay, Fergus (2006) *Indigenous Peoples and United Nations Human Rights Treaty Bodies: A Compilation of Treaty Body Jurisprudence. Volume II: 2005-2006.* Forest Peoples Programme. http://www.forestpeoples.org/sites/fpp/files/publication/2010/09/unjurisprudencecompvol206eng.pdf
MacKay, Fergus (2009) *Indigenous Peoples and United Nations Human Rights Treaty Bodies - A Compilation of UN Treaty Body Jurisprudence and the Recommendations of the Human Rights Council. Volume III: 2007-2008.* Forest

Peoples Programme. http://www.forestpeoples.org/sites/fpp/files/publication/2010/08/unjurisprudencecompvol30708eng.pdf
MacKay, Fergus (2011) *Indigenous peoples and United Nations human rights bodies Volume IV 2009-2010 - A compilation of UN treaty body jurisprudence and the recommendations of the Human Rights Council.* Forest Peoples Programme. http://www.forestpeoples.org/sites/fpp/files/publication/2011/02/ips-and-human-rights-bodies-jurisprudence-2009-2010.pdf
MacKay, Fergus (2013) *Indigenous Peoples and United Nations Human Rights Bodies - A Compilation of UN Treaty Body Jurisprudence and the Recommendations of the Human Rights Council. Volume V: 2011-2012.* Forest Peoples Programme. http://www.forestpeoples.org/sites/fpp/files/publication/2013/01/cos-2011-12.pdf
Mackay, Fergus (2015) *Indigenous Peoples and United Nations Human Rights Bodies - A Compilation of UN Treaty Body Jurisprudence, the Reports of the Special Procedures of the Human Rights Council and the Advice of the Expert Mechanism on the Rights of Indigenous Peoples. Volume VI: 2013-2014.* Forest Peoples Programme. http://www.forestpeoples.org/sites/fpp/files/publication/2015/06/cos-2013-14.pdf
Manela, Erez (2007) *The Wilsonian Moment: Self-Determination and the International Origins of Anticolonial Nationalism*, Oxford University Press, Oxford.
Mankin, W.E. (1998) *Entering the Fray. International forest policy processes: an NGO perspective on their effectiveness*. Policy that works for forests and people series no. 9. International Institute for Environment and Development, London.
Myers, Norman (1985) *The Primary Source: Tropical Forests and Our Future*, Norton, London.
Nectoux, Francois & Yoichi Kuroda (1989) *Timber from the South Seas: an analysis of Japan's Tropical Timber Trade and its Environmental Impact,* WWF International, Gland
Nelson, John & Patrick Kipalu (2014) Final report by FPP to FSC to document completion of the roadmap towards the re-association of Danzer, Forest Peoples Programme, 25 July 2014, Ms.
Nicholas, Colin (2000) *The Orang Asli and the Contest for Resources*, IWGIA, Copenhagen.
Niezen, Ronald (2003) *The Origins of Indigenism: Human Rights and the Politics of Identity.* University of California Press, Berkeley.
Pourtier, Roland (1989) *Le Gabon: L'Etat et Developpement*, L'Harmattan, Paris.
Rich, Bruce M. (1985) The Multilateral Development Banks, Environmental Policy, and the United States, *Ecology Law Quarterly* 681.
Robinson, D. & L. Brown (2002) *The SLIMFs Initiative: a progress report, Increasing Access to FSC Certification for Small and Low Intensity Managed Forests*, FSC, Oaxaca.
Robinson, Ronald, John Gallagher & Alice Denny (1965) *Africa and the Victorians: the official mind of imperialism,* MacMillan and Co., London.
RSPO (2005) Principles and Criteria for Sustainable Palm Oil, Roundtable on Sustainable Palm Oil, Kuala Lumpur.
RSPO (2013) Principles and Criteria for Sustainable Palm Oil, Roundtable on Sustainable Palm Oil, Kuala Lumpur.
RSPO (2014) Financial Statement for the Year ended 30 June 2014, Roundtable on Sustainable Palm Oil, Kuala Lumpur.
RSPO (2014b) Smallholder support fund. Retrieved from; http://www.rspo.org/certification/smallholders/support-fund 17 July 2016.
RSPO (2015) *Free Prior and Informed Consent Guide for RSPO Members,* Roundtable on Sustainable Palm Oil, Kuala Lumpur.
RSPO (2016a) Certified Growers. Retrieved from: http://www.rspo.org/certification/certified-growers
RSPO (2016b) Retrieved at: http://www.rspo.org/news-and-events/news/rspos-physical-certified-sustainable-palm-oil-hits-record-sales-for-january-2016
RSPO (2016c) Retrieved at: http://www.rspo.org/members/complaints
SAM (1990) *Battle for the Rainforests*, Sahabat Alam Malaysia, Penang.
SDI (2016) *Respecting Rights? Assessing Oil Palm Companies Compliance with FPIC Obligations. A case study of EPO and KLK LIBINC Estate in Grand Bassa, Liberia.* Sustainable Development Institute and Forest Peoples Programme, Moreton-in-Marsh.
SesDev (2016) *Respecting Rights? Assessing Oil Palm Companies Compliance with FPIC Obligations.* A case study of Maryland Oil Palm Plantation in south-eastern Liberia. Social Entrepreneurs for Sustainable Development and Forest Peoples Programme, Moreton-in-Marsh.
Snook, Laura K. (2005), Sustaining mahogany: research and silviculture in Mexico's community forests, *Bois et Forets des Tropiques* 285 (3):55-65.
Stocks, A. & Hartshorn, G. (1993) The Palcazu project: Forest management and native Yanesha communities, *Journal of Sustainable Forestry* 1(1): 111-135.
Stoler, Laura Ann (1985) *Capitalism and Confrontation in Sumatra's Plantation Belt 1870-1979*, University of Michigan, Ann Arbor.
Thornber, Kirsti & Matthew Markopoulos (2000) *Certification: its impacts and prospects for community forests, stakeholders and markets.* IIED, London.
van der Vlist, Leo & Wolfgang Richert (2014) *Dispute resolution and settlement for biomass certification schemes – A mapping exercise of needs and potentials*, Ecole Polytechnique de Lausanne Research Paper, Lausanne.
Vermeulen, Sonia & Nathalie Goad (2006) *Towards better practice in smallholder palm oil production,* IIED, London
WRM (1989) *Penang Declaration*, Sahabat Alam Malaysia, Penang.
WRM (1992) *Rainforest Destruction: Causes, Effects and False Solutions*, World Rainforest Movement, Penang.
White, Richard (1991) *The Middle Ground: Indians, Empires, and republics in the Great Lakes Region, 1650-1815.* Cambridge University Press, Cambridge.
Yong, Carol (2002) The Malaysian timber certification scheme and the FSC, In: Simon Counsell and Kim Lovass (ed.), 2002, *Trading in Credibility*, Rainforest Foundation-UK, London.

Photo Credits

CHAPTER ONE:
Page 10: Mystic Forest 1: Credit: Jessen-14

CHAPTER TWO:
Page 25: Mystic Forest 3: Credit: Zavrsnica-1-28
Page 42: Sourced from Tim Healy, AQUATERRE

CHAPTER THREE:
Page 45: Fresh palm oil fruit from truck.— Photo by kampee_p / DepositPhotos
Page 50: large-scale oil palm plantation on Tripa peat swamp forest. Photo credit: Denis Ruysschaert
Page 56: Orangutans trapped into forest blocks within plantations have to be rescued and trans-located. Photo credit: Denis Ruysschaert

CHAPTER FOUR:
Page 59: Brazilian coffee farmer at coffee plantation— Photo by tiagoz / DepositPhotos
Page 64: BCI_cotton_Mozambique. Supplied by authors.
Page 64: UtZ_coffee drying_Brazil. Supplied by authors.
Page 66: RSPO_Indonesia. Supplied by authors.
Page 69: Views of palm oil plantations— Photo by goinyk

CHAPTER FIVE:
Page 73: Deforestation of hillside by clearcutting mature Eucalyptus forest for timber harvest— Photo by PiLens/ DepositPhotos
Page 88: Sourced from Tim Healy, AQUATERRE

CHAPTER SIX:
Page 91: Sourced from Tim Healy, AQUATERRE
Page 106: Fishing boat in Newfoundland. Credit: Danna J Leaman

CHAPTER SEVEN:
Page 109: Collecting Jiaogulan Gynostemma pentaphyllum in Bac Kan province Viet Nam. Credit: TRAFFIC Tung Pham
Page 116: Group discussion and training in sustainable harvesting in Xuan Lac commune of Bac Kan province of Viet Nam; Credit: TRAFFIC/Nguyen Thi Mai
Page 119: Haritaki (*Terminalia chebula*) collector, Dhondo Kala Titkare, Dhage Wadi village, Bhimashankar, India. Credit: Amit Kotiya/TRAFFIC
Page 122: Training in sustainable harvest, Xuan Loc commune, Viet Nam. Credit: Nguyen Thi Mai/TRAFFIC

CHAPTER EIGHT:
Page 125: Healthy coniferous trees in forest of old spruce, fir, larch and pine trees in wilderness area with alpine pasture in the foreground. Sustainable industry, ecosystem and healthy environment concepts. Photo by zlikovec. DepositPhotos
Page 135: Credit: 2014_ICCOMMS_PERU_PEO_community_(c)FSC GD_… Irrgang_0057
Page 137 top: Sourced from Tim Healy, AQUATERRE
Page 137 bottom: Credit: 2014_ICCOMMS_SPAIN_GA_(c) FSC GD_Juan

CHAPTER NINE:
Page 139: UNESCO World Heritage Batad Rice Terrace Cluster in Ifugao, Philippines. It's also listed as a Globally Important Indigenous Agricultural Heritage System by the FAO. Credit: Raymond Aquino Macapagal, BA, MFCC, MWHCPD. Assistant Professor & Coordinator of European Studies. Center for International Studies
Page 140: BC products. Supplied by authors.
Page 142: Ceremony to the spirit of the potato, the Potato Park. Credit: ANDES Peru
Page 147: Traditional crafts group/weavers in the Potato Park. Credit: ANDES Peru

CHAPTER TEN
Page 149: Agricultural Areas For Planting Oil Palm. © Aspire4740 | Dreamstime.com

NOTE: Every effort has been made to credit images with their source and photographer. Should we not have correctly done so or missed doing so, please contact the authors of the particular paper.

Commission on Environmental, Economic and Social Policy (CEESP)

Mandate 2013–2016

Vision

- A world where equity is at the root of a dynamic harmony between peoples and nature, as well as among peoples.
- A world of diversity, productivity and integrity of natural systems.
- A world in which production and consumption patterns are sustainable.
- A world where cultural diversity is intertwined with biological diversity and together generate abundant and sustainable livelihoods opportunities.

Mission

To contribute to the IUCN Mission by providing insights and expertise and promoting policies and action to harmonize the conservation of nature with the crucial socioeconomic and cultural concerns of human communities—such as livelihoods, human rights and responsibilities, human development, security, equity, and the fair and effective governance and equitable sharing of natural resources.

Objectives and strategic approaches

CEESP undertakes its Mission primarily through engaging its Members' policy and field-based expertise to:

1 Identify, analyse and learn from policies and practices at the interface between conservation of nature and the crucial socioeconomic and cultural concerns of human communities, with particular attention to indigenous peoples and local communities.

2 Advance innovative applied research and provide timely responses to environmental and social crises identified by CEESP members, IUCN Members, Secretariat, Commissions and partners in the field—such as poor or ineffective governance of natural resources, food insecurity, loss of bio- cultural diversity and climate change.

3 Foster a holistic approach to nature conservation across IUCN, embracing complexities and promoting dialogue and collaborative learning based on cultural and social values and on knowledge and experience from diverse regions, communities, genders and ages.

4 Influence the values, policies and practices of public, private and civil society institutions and organizations regarding the conservation of nature, the promotion of bio-cultural diversity and the sustainable and equitable use of natural resources and to promote, demonstrate, articulate and link effective and equitable field-based and policy solutions in these areas.

5 Enhance the capacity of IUCN and contribute to implementing the IUCN Programme by collaborating with the IUCN Secretariat, Commissions and IUCN Members bridging the experience and skills of experts and scientists from diverse cultures.

Programme priorities

CEESP's work is focused on the following programme priorities, incorporating the diverse perspectives and experiences of the CEESP membership:

1 Development and promotion of a conservation ethic that supports diverse knowledge systems and values, delivers rights-based and equitable conservation with improved governance of natural resources and tangible livelihoods benefits, and links biological diversity with the cultural dimensions of nature conservation with a focus on the rights of indigenous peoples and local communities.

2 Increased use of rights-based approaches to natural resource management and governance that promotes social and cultural equity, indigenous peoples' self-determination, community governance, sustainable livelihoods and human security.

3 Nature-based solutions to global challenges—such as climate change, conversion of forests and farmland to monocrops, including biofuels projects, food insecurity, poverty, inequitable economic and social development—that are underpinned by economic policies that reinforce sustainability, social equity and environmental integrity.

4 Enhanced capacity of civil society, governments and the private sector to ensure corporate social and environmental accountability and reduce the negative impact of industries on climate, bio- cultural diversity and food security.

In addition to its own membership, CEESP has formal arrangements with three other IUCN Commissions to deliver jointly aspects of the above priorities relevant to those Commissions, namely the World Commission on Protected Areas (WCPA), the Species Survival Commission (SSC), and the Commission on Environmental Law (CEL).

Structure and organization

Membership. The Commission has a diversified membership in terms of disciplines, cultures, languages, geographical regions, age and gender, which brings diverse perspectives and experiences to bear in debating, analysing and promoting the issues of concern to its vision and Mission. Membership includes some of the world's foremost

conservation and sustainable development practitioners, natural and social scientists, and traditional community leaders. Experts from major conservation and development organizations and young professionals with proven capacities in sustainable development at the community, national and international levels also provide valuable insights into the work of the Commission. Membership is voluntary and by invitation or through application with the support of two existing Commission members. The broad scope of the Commission requires the extension and strengthening of capacity through increased membership, strategic partnerships, active fundraising and network mobilization.

Knowledge Baskets

The term knowledge basket is a metaphor for working in a holistic way, valuing ethical respectful and reciprocal relationships as well as investing in the human social and cultural dimensions of environmental knowledge.

IUCN Natural Resource Governance Framework (NRGF) is a knowledge basket with the overarching goal of setting standards and guidance for decision-makers to make better and more just decisions on the use of natural resources and the distribution of nature's benefits.

People in Nature (PiN) knowledge basket, formerly known as Human Dependence on Nature (HDN), promotes learning amongst participants to improve our understanding of how nature contributes to local livelihoods and well-being.

TSEAPRISE CEESP Theme on Social and Environmental Accountability of the Private Sector (TSEAPRISE)

OBJECTIVE: enhanced capacity of civil society, governments and the private sector to ensure corporate social and environmental accountability and reduce its impact on climate change.

CEESP Theme on Culture and Conservation (TCC)

Objective: improve knowledge, policy and practice through linking cultural and biological diversity.

CEESP Theme on Environment, Conflict and Security (TECS)

OBJECTIVE: focuses on the intersection between environmental governance, environmental change and conflict and how this impacts on multiple dimensions of security.

CEESP Theme on Environment, Macroeconomics, Trade and Investment (TEMTI)

OBJECTIVE: provide practical and enabling information, and relevant policy options on issues lying at the intersection between economics and environmental and social sustainability.

CEESP Theme on Governance, Equity and Rights (TGER)

OBJECTIVE: promote better understanding and action on the practice and theory of governance of natural resources, equity, and human rights.

CEESP Theme on Sustainable Livelihoods (TSL)

OBJECTIVE: improve coherence and coordination among initiatives for biodiversity conservation, poverty eradication and sustainable livelihoods.

CEESP Emerging Leaders Network

OBJECTIVE: contribute to CEESP's work program and priority areas through intergenerational partnerships between established and emerging leaders and CEESP thematic and regional groups.

INTER-COMMISSION THEMES/ SPECIALIST GROUPS
CEESP – WCPA Theme on Indigenous Peoples, Local Communities, Equity & Protected Areas (TILCEPA)

OBJECTIVE: improved governance of protected areas through equitable sharing of costs and benefits and appropriate recognition of governance types.

CEESP - CEL Specialist Group on Indigenous Peoples, Customary & Environmental Law & Human Rights (SPICEH)

OBJECTIVE: focus on indigenous people and human rights & the intersection of customary and environmental laws.

CEESP – SSC Specialist Group on Sustainable Use and Livelihoods (SULi)

OBJECTIVE: promote both conservation and livelihoods through enhancing equitable and sustainable use of wild species and their associated ecosystems.

Specialist Group on Religion, Spirituality, Environmental Conservation and Climate Justice (Respecc)

OBJECTIVE: promote coordination of a global network of Faith-based organisations engaged in climate justice advocacy in the UNFCCC processes and environmental policy through IUCN and CBD

In addition to the themes and specialists groups above, CEESP has established taskforces on Biofuels, Bio-Cultural Conservation, REDD++ and Indigenous Peoples. CEESP is actively developing a global youth network together with other IUCN Commission Young Professional Groups, and fostering greater opportunities for intergenerational partnerships with CEESP and IUCN through the CEESP Youth and Intergenerational Partnership Group.

This journal is printed on 300gsm FSC Artcard and 126.6gsm FSC Matte Artpaper.

FSC MIX Paper FSC® C106263

The chapters in this issue of *Policy Matters* bring together a range of papers considering voluntary certification standards (VCS) – a relatively new form of private governance of global resource markets. VCS may have strong standards, implementation, and verification mechanisms, but we need to know more about their adoption, application, and impacts, particularly regarding protection of biodiversity and associated human livelihoods. The papers give us greater insight into the methods and challenges of evaluating these particular impacts, important in corporate social and environmental accountability.

CEESP, the IUCN Commission on Environmental, Economic and Social Policy, is an inter-disciplinary network of professionals whose mission is to act as a source of advice on the environmental, economic, social and cultural factors that affect natural diversity and to provide guidance and support towards effective policies and practices in environmental conservation and sustainable development.