Certifications and Ecolabels of Forest Products: - A Bibliography



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A Bibliography

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Introduction

Forests are destructed every day to supply low cost timber and wood products to the world. The price for this destruction is escalating climate change, biodiversity loss and community displacement. As much as 80% of the world's forests have been destroyed or irreparably degraded. Logging companies are cutting down the forests. Agri-business is also responsible for forest destruction as forests are cleared or burned to make way for cattle ranches, palm oil or soya plantations. Destruction of the forest adds to climate change because forests trap carbon and help stabilise the world's climate. As forest is cut down, millions of indigenous people lose their habitat. Some of the world's most rare animals and plants are losing their habitats and many face extinction.

Forest certification was introduced in the early 1990s to address concerns of deforestation and forest degradation and to promote the maintenance of biodiversity. Forest certification is very successful in raising awareness and disseminating knowledge on a holistic sustainable forest management concept, embracing worldwide economic, environmental and social issue. The environmental benefits of forest certification are more evident than the financial benefits.

Forest certification is a voluntary process whereby an independent third party (the "certifier") assesses the quality of forest management and production against a set of requirements ("standards") predetermined by a public or private certification organization. Forest certification and associated labelling is a way of informing consumers about the sustainability of the forests from which wood and other forest products were produced. These forest management certification standards address a wide range of economic, social, environmental and technical aspects of forest management, including the well-being of workers and of families living in and around the forest area subject to certification. It is a market mechanism to promote the sustainable use and management of forests and to identify "sustainably produced" products for the consumer.

Many institutes, research scientist, NGOs, international and national organisations have undertaken study to identify, measure, practice, implement, and evaluate whether forest certification is enhancing forest sustainability or not. Research articles focus on measuring and evaluating the impacts of forest certification on sustainable forestry through better ecological, social, or economic processes.

In order to fill the information gap on the subject "**Certifications and Ecolabels of Forest Products**" the CERC-ENVIS Resource Partner has collected information from secondary sources. It is bringing out in an annotated bibliography. This bibliography will be useful as background information in research projects, as reference tools and information tools. It will make readers aware of recent research on the subject to facilitate the writing of reports or publications.

It will be a good collection for libraries. It will make librarians or information officers aware of existing material on the subject. It covers the research articles, peer reviewed research papers, general articles and books indexed from 2000 to 2019.

We welcome comments and suggestions from users to enable us to improve.

Regulatory intersections and Indigenous rights: lessons from Forest Stewardship Council certification in Quebec

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The goal of this study is to better understand the qualities of regulatory interaction and its effects through the analysis of two case studies involving the Forest Stewardship Council's (FSC) requirements for free and informed consent during the period 2012 to 2015 in Quebec. The first case describes events related to the transfer of FSC certificates from the forest industry to the Quebec government, proposed as a result of the introduction of the new forest policy regime in 2013. The second case describes a contested FSC certificate in the Lac-St-Jean region, spearheaded by an Indigenous nation, over the issue of free and informed consent. Both cases are documented through secondary data. Results reveal that forestry certification acted as a catalyst, obliging parties to more clearly define their positions on the application of Indigenous rights, but also creating dissonance within the regulatory system. Pathways of regulatory interaction were characterized by mutual influence, negotiation, and readjustment.

Keywords: Forest Certification, Indigenous Rights, Regulatory Interaction, Private Regulations, Public Regulations, Forest Stewardship Council

Profitability of Forest Certification – Case Study Analysis

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Economic Alternatives, Issue 4, 2019, 607-614p.

ISSN: 1312-5281

Forest certification plays an important role in supporting and ensuring sustainable forest management. By November 2017, the FM FSC certified state hunting and forestry enterprises are 72 in number, part of which are included in group certificates

of the respective state owned enterprises in whose territory they are located. Certified forest area in Bulgaria in November 2017 is 1 315 594 ha. These numbers are growing very fast at the moment.

The main objective of the study is to analyze and evaluate the profitability of introducing the FSC certificate for sustainable forest management. In this respect a case study analysis is carried out at Yundola and Petrohan, which are Training forest enterprises at the University of Forestry -Sofia. These two forest enterprises and adjacent state forest and hunting forest enterprises are considered in this case as model forest areas, including certified and subject to certification forest enterprises and typical forest areas with coniferous and deciduous forests**.**

Keywords: Sustainable Forest Management, Forest Certification, Profitability, FSC, Logging, Woodworking, Certification

Low-level retention forestry, certification, and biodiversity: case Finland

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ISSN: 2192-1709

In managed forests, leaving retention trees during final harvesting has globally become a common approach to reconciling the often conflicting goals of timber production and safeguarding biodiversity and delivery of several ecosystem services. In Finland, the dominant certification scheme requires leaving low levels of retention that can benefit some specific species. However, species responses are dependent on the level of retention and the current low amounts of retention clearly do not provide the habitat quality and continuity needed for declining and red-listed forest species which are dependent on old living trees and coarse woody debris. Several factors contribute to this situation. First, the ecological benefits of the current low retention levels are further diminished by monotonous stand wise use of retention, resulting in low variability of retention habitat at the landscape scale. Second, the prevailing timber-oriented management thinking may regard retention trees as an external cost to be minimized, rather than as part of an integrated approach to managing the ecosystem for specific goals. Third, the main obstacles of development may still be institutional and policy-related. The development of retention practices in Finland indicates that the aim has not been to use ecological understanding to attain specific

ecological sustainability goals, but rather to define the lowest level of retention that still allows access to the market. Authors conclude that prevailing retention practices in Finland currently lack ecological credibility in safeguarding biodiversity and they should urgently be developed based on current scientific knowledge to meet ecological sustainability goals.

Keywords: Sustainable Forest Management, Forest Certification, Forest Biodiversity, PEFC, Forest Ecosystem,

The role of voluntary forest certification in solving the problem of minimizing the impact on the environment in the process of logging

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IOP Conference Series: Earth and Environmental Science, Volume 315, Issue 7, 2019, 7p.

Conservation of forest biodiversity is a global challenge. These goals are the main objectives of voluntary forest certification. This article presents the results of the activities of one of the enterprises of the Krasnoyarsk Territory, Russian Federation, aimed at sustainable forest management and biodiversity conservation. The company is certified by the PEFC RUSSIA system and is guided by their requirements and recommendations. In order to minimize the environmental impact, adjustments were made to the process of logging. The change in the technological process made it possible to reduce the damage of the soil and undergrowth of trees. As a result of research activities of the enterprise, it should be admitted that during logging negative effects on forest ecosystems dominate, a significant transformation of the natural environment takes place. However, with the help of certain organizational measures, this damage can be minimized. Voluntary forest certification systems are designed to reduce the impact of the activities of enterprises and promote the best management of forest resources. To simplify the use of certification requirements, an algorithm for minimizing the impact on the environment through the tools of voluntary forest certification has been proposed.

Keywords: Sustainable Forest Management, Forest Certification, Forest Biodiversity, PEFC, Forest Ecosystem

The impact of application of FSC Chain of Custody certification on global wood products trade

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European Journal of Wood and Wood Products, Volume 77, Issue 4, 2019, 633–643p.

ISSN: 0018-3768|1436-736X

FSC Chain of Custody (CoC) certification effectively proves that the timber being used originates from sustainably managed forests, and a large number of wood products have been FSC CoC certified. This paper examines the impacts of the application of FSC CoC certification on the international trade of wood products. The analysis is conducted using the Heckscher–Ohlin–Vanek model, where the number of FSC CoC certificates is used to describe the level of application, and is included as an explanatory variable for national net export of wood products. The results show that the application has had significant and positive impacts on the net export of sawnwood, particleboard, plywood, wood furniture and fibreboard, while it has had significant and negative impacts on the net export of roundwood. The present findings imply that more sawnwood, particleboard, plywood, wood furniture and fibreboard in the global market have been FSC CoC certified than roundwood and veneer sheet in meeting the demand for legal products. Therefore, it is necessary to encourage more companies to apply FSC CoC certification to roundwood and veneer sheet.

Keywords: FSC Chain of Custody, FSC, Forestry, Partnership, Forest Certification, Wood, Certification, Standard

The Dilemma of Maintaining Intact Forest through Certification

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Frontiers in Forests and Global Change, Volume 2, Article 72, November 2019, 8p.

ISSN: 2624-893X

Intact forests are natural and often extensive forests free from apparent anthropogenic degradation. Intact forests have important intrinsic and societal values, making their protection a high conservation priority. They are, however, vulnerable to

being lost and degraded due to high opportunity costs and a lack of positive incentives to their preservation. Market-based mechanisms, such as voluntary certification, might provide a means to conserve intact forests while maintaining income through sustainable forest uses. Yet possibilities to ensure strict protection of large areas of intact forests through certification remain limited as long as premiums from certification are bound to the units of forest products that are sold. Authors explore challenges for incorporating intact forests into certification processes, and of maintaining intact forests within forest management units. To circumvent these challenges, it might be necessary to create a form of compensation payment scheme to overcome the foregone costs of intact forest preservation. Alternatively, certification systems might need to consider permitting some degree of regulated extraction in exchange for recognition and implementation of stringent forest preservation. This will require a re-evaluation of the way intactness is treated within current certification standards and the requirements for forestry within intact forests. Eventually, intact forest conservation and socially and economically viable forest management can only be reconciled on the landscape scale.

Keywords: Land Sharing Land Sparing, Protected Areas, REDD+, Forest Management, FSC, Sustainable Intensification, Boreal Forest, Tropical Forest

Forest Certification: More than a Market-Based Tool, Experiences from the Asia Pacific Region

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Over the last 25 years, the global area of certified forests has grown rapidly and voluntary forest certification has become recognized as an effective tool to engage international markets in improving sustainability within forest management units. However, the bulk of this growth has occurred in North America, Northern Europe, Australia, and New Zealand, with relatively limited uptake in the tropics. Since its creation, forest certification has been largely understood as a “market-based” mechanism, in contrast to government-led policies and regulations. Through the experience of the Responsible Asia Forestry and Trade (RAFT) partnership in the Asia Pacific region, we find that the framing of forest certification as voluntary and market-based, and as a mechanism to overcome governance failure, has created an artificial dichotomy. In this dichotomy, voluntary certification and regulatory measures to promote sustainable forest management are conceived of and pursued largely independently. We argue that it is more constructive to view them as complementary

approaches that share a common goal of increasing sustainability across the forestry sector. In practice, forest certification interacts with conventional governance institutions and mechanisms. Understanding these interactions and their implications, as well as additional possibilities for interaction, will help in realizing the full potential of forest certification.

Keywords: Sustainable Forest Management, Voluntary, Market-Based, Regulatory, Forestry, Partnership, Forest Certification

Fraud and misrepresentation in retail forest products exceeds U.S. forensic wood science capacity

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Fraud and misrepresentation in forest products supply chains is often associated with illegal logging, but the extent of fraud in the U.S. forest products market, and the availability of forensic expertise to detect it, is unknown. Authors used forensic wood anatomy to test 183 specimens from 73 consumer products acquired from major U.S. retailers, surveyed U.S. experts regarding their forensic wood anatomy capacity, and conducted a proficiency-testing program of those experts. 62% of tested products (45 of 73) had one or more type of fraudulent or misrepresented claim. Survey respondents reported a total capacity of 830 wood specimens per year, and participants' identification accuracy ranged from 6% to 92%. Given the extent of fraud and misrepresentation, U.S. wood forensic wood anatomy capacity does not scale with the need for such expertise. Authors call for increased training in forensic wood anatomy and its broader application in forest products supply chains to eliminate fraud and combat illegal logging.

Keywords: Forest Products, Forensic Wood, Forest Management, Forest Product Market, Wood, Ecolabel, Mislabelling, Forest Products Supply Chain

Differences in forest management practices in Primorsky Krai: Case study of certified and non-certified by Forest Stewardship Council forest concessions

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The Forest Stewardship Council (FSC) aims to promote environmentally responsible forest management globally. However, quantifiable evidence of effects of FSC on forest management practices is lacking. FSC has been present in the Russian forestry arena for over 20 years. In this case study, we compare ecological indicators of forest management in FSC-certified and non-certified companies in Primorsky Krai of the Russian Far East. Those indicators include percent of forest cover loss and gain on forest concessions managed by three certified and three non-certified companies. We also interview a range of stakeholders involved with forest management or in forest policy planning in Russia to provide context for this case study. Results indicate no difference between certified and non-certified companies with regard to forest cover loss from 2008 to 2015 or forest cover gain from 2000 to 2012. Stakeholder interviews reveal that while forest certification is viewed positively and considered an efficient mechanism to improve forest management, the stakeholders doubt its ability to stimulate quantifiable changes in forest management practices in Russia and the Far East specifically. Authors focus on Primorsky Krai because of its unique geographic location, where its neighbors China and Japan significantly influence Primorsky Krai's export market.

Keywords: Forest Stewardship Council, Forest Certification, Sustainable Forest Management, Russia, Primorsky Krai, Forest Cover Loss

Scientists say sustainable forestry organizations should lift ban on biotech trees

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Science, August 23, 2019

This article discusses about Forest Stewardship Council (FSC) or an equivalent organization. These nonprofits certify that forests are managed sustainably, and one common requirement is no genetically modified (GM) trees. The organizations say that since their inception, they have banned GM trees as a precaution against uncertain environmental risks. Scientists have long countered that hundreds of field trials and

other research over the years since have proved the technology as safe as traditional breeding. A big problem with the ban is that managers of certified forests will not be able to plant GM trees that could, for example, better resist pests and drought. A tree biotechnologist at Syracuse University in New York says the ban unfairly besmirches the reputation of trees modified by genetic engineering or gene editing. Thorsten Arndt, a spokesperson for PEFC, says the certification requirements are reviewed every 5 years, with the next update scheduled to be completed in 2023. “Anyone who wants to change the standard to say we'd like to have GMOs can participate in our process.”

Keywords: Forest Stewardship Council, Forest Certification, Sustainable Forest Management, Biotech Trees, Certification

Compliance with Environmental and Social Legislation in Certified Forestry Companies

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The objective of this study was to evaluate the contribution of the FSC forestry certification system to improve the forestry sector, in terms of compliance to environmental and social laws and improvements in working conditions resulting from the certification process. Thirty-seven auditing reports from five Brazilian forestry companies were evaluated, throughout the 2006-2013 period. Non-compliance and observations were analyzed and organized into categories, which identified the main performance issues found in certified forestry organizations. 301 instances of non-compliance and 138 observations of audit reports were verified, where 48 and 57%

respectively were linked to the two principles studied. For obtaining and/or maintaining the certificate it is necessary for all violations to be resolved. Therefore, it was concluded that forest certification contributes to the advancement of the forestry sector in Brazil, in relation to compliance with legal, social and labor issues.

Keywords: Forestry Certification, FSC, Sustainability, Forest Management, Certified Forest Companies, Certification

The impacts of forest certification for Chilean forestry businesses

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Forest Policy and Economics, Volume 92, July, 2018, 82-91p.

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Forest certification, under both the Forest Stewardship Council (FSC) and the PEFC-endorsed Chilean CERTFOR schemes, has been widely adopted in both the native and plantation forestry sectors in Chile. This study of the impacts of forest certification on Chilean forestry businesses is based in-depth interviews with 72 actors representing a diversity of roles and perspectives in the Chilean forestry sector.

The impacts of certification have been greatest in the plantation forestry sector, and for larger businesses. These impacts include the cessation of deforestation for plantation establishment, rehabilitation of natural ecosystems, greater benefits to local communities, and the development of a positive dialogue between forestry businesses and their stakeholders. However, certification has not resolved some long-standing conflicts between forestry businesses and other actors, notably in relation to Indigenous peoples' land claims and workers' rights.

Both certification schemes in Chile have promoted legal compliance; FSC certification is encouraging improvements beyond legal compliance, and deepening the changes initiated by CERTFOR. The results illustrate how certification can contribute to effective hybrid governance regimes, but also of the limits of certification in addressing deeply-entrenched social conflicts. Nevertheless, the impacts of certification for Chilean forestry businesses and their stakeholders have largely been positive.

Keywords: Forest Certification, Forest Land, Forest Stewardship Council, Certification, FSC, Standards, CERTFOR schemes, Certification impacts, CERTFOR, Chile Forest Governance

Is Forest Certification Necessary, an Analysis of Substantive Practices and Public Participation?

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The decision to adopt forestry certification is a critical one for many companies. Certification can result in increased costs that are not always compensated when products come to market. However, certification has been shown to result in substantive improvement in sustainable forest practices in areas with limited forest practices regulations. Thus, forest certification may offer a landowner the opportunity to demonstrate their commitment to sustainability through two methods. In areas where there is a lack of protective measures generated by the state, certification offers landowners an opportunity to comply with a higher level of protection found in the certification scheme. In areas where the legitimacy of the state government is uncertain or weak, then certification may provide additional validation of the company's commitment to sustainable practices.

The substantive and procedural components of California state forest practices rules along with the Forest Stewardship Council's certification (FSC) system were compared to demonstrate the decision environment encounter by companies considering forest certification. Six substantive practices were selected to demonstrate sustainable practices. Procedural legitimacy, the fairness of public participation was the measure of the quality of governance of the two systems.

The results showed that California exceeds the most of substantive forest practices, only buffering riparian areas when compared with the Pacific Coast Standards for FSC Certification. Both systems have a formal public notification and review of complaints; however, the sovereign power of the state ultimately allows complaints to be evaluated by an independent judiciary that is not available in a private system.

Keywords: Forest Certification, Forest Land, Timber Harvest Plan, Forest Stewardship Council, Certification, FSC, Standards

Forest certification map of Europe

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Forests cover nearly 40% of European land, with different country percentage and patchy distribution. The European forestry sector highlights that forest areas have different ownership: private (by firms, individual, or organizations) and public (State, communities or municipalities). The number of forestry holdings, size of landholding, and ownership types influence and drive forest management, governance and various other socio-economic linked issues. Moreover, forest owners determine management objectives and policies which influence the application of Sustainable Forest Management (SFM) practices. Several tools were developed to promote SFM, including forest certification. Numerous forest certification schemes are present across the world but the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC) are those prevalent? However, a map of certified forests is lacking, although mapping would be essential to locate the percent-age of forest that are certified to be sustainably managed. The study mapped forest certification across 43 European states, according to 499 FSC and 284PEFC reports and assessed the proportion of certified forest area on public and private land and the rate of increase. This research was carried out collecting information on European certified forest companies/owners and locating geo-graphically their forests at sub-national level (regions, NUTS 2). The database of the Joint COST Action FACESMAP/UNECE/FAO was an important data source. At European level, about 6% of the forest is certified under FSC scheme, while about seven percent under PEFC scheme. As forest certification is a useful tool to manage forests aiming at the integration of economic, eco -logical and social sustainability, the knowledge of the location and area of certified forest in Europe could be important in motivating decision makers to increase these sustainably managed areas.

Keywords: Forest Policy, Sustainable Forest Management, Forest Certification, Forest Owners, Forest Management, Programme for the Endorsement of Forest Certification, PEFC, Standards

Quality management and certification in sustainable forest management (SFM): The case study of Russia

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Sustainable Forest Management is a main part of the Global Sustainable Management. The main instruments for the implementation of the concept of Sustainable Forest Management are Forest Certification and Forest Quality Management. In the article authors investigated the essence, content and principles of Sustainable Forest Management as a key element of the formation and implementation of the Sustainable Development of the Society and its adaptation in the case study of post-communist countries like Russia. Also specific of Forest Certification and Forest Quality Management in Russia was investigated. The obtained result laid the foundation for the review and systematization of the interests of key players in the domestic forest industry, the prerequisites and limitations for the implementation of the Sustainable Forest Management Concept. For this purpose, the authors carried out situational analysis, interviewing, content analysis of media texts. In the article are analyzed 7 top-forestry Russian enterprises and also Russian timber industry complex generally. Based on the results of the study, the interests and priorities of the parties participating in the development of the national concept of sustainable forest management have been identified and systematized. This allowed us to identify incentives and prerequisites, problems and limitations, as well as prospects and directions for the development of forest certification in the territory of the Russian Federation. Based on the research results, it is concluded that Quality Management and Forest Certification are considered by all stakeholder groups as a key tool for ensuring Sustainable Forest Management by the case study of Russia.

Keywords: Quality Management, Forest Certification, Forestry in the Russian Federation, Sustainable Development, Sustainable Forest Management, Certification

Understanding Sustainable Forest Management Certification in Slovakia: Forest Owners' Perception of Expectations, Benefits and Problems

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Forest certification as a voluntary verification tool has been providing an independent assessment of sustainable forestry practices and thus confidence in sustainability benchmarks for over 20 years. Using either the international or national approaches and initiatives, two main forest certification systems, PEFC (Programme for the Endorsement of Forest Certification) and FSC (Forest Stewardship Council), have spread in a number of countries worldwide. The specifics of local conditions in the forestry sector have to be taken into account when implementing the certification context in a given country or a region. Apart from the natural conditions, institutional structure, or legislative framework, it is also the local and national stakeholders and their perception of this issue that provides the background for the implementation of the certification criteria. The main objective of this study is to examine the general understanding of the certification concept as an environmental, economic, and social tool, and to determine the incentives of forest owners in Slovakia for sustainable forest management (SFM) certification. In addition, the benefits and problems arising from participation in certification were identified and differences reflecting the ownership structure of forests, size of forest area, and participation in a particular certification programme were analysed.

Results indicate that certified forest owners, unlike non-certified, demonstrated a high level of understanding of the SFM certification concept. Certified entities mainly consider forest certification as their commitment to environmental responsibility and a tool for improving external company image, promoting sustainable utilisation of forest resources, and improving forest management practices. The main benefits are linked to the possibility to demonstrate forest management practices, a better understanding of the forest management concept, and improvement of forest management practices. PEFC users perceive more benefits following from certification, the most important are those associated with non-economic values, while FSC-certified forest owners perceive mainly economic benefits connected to market penetration, increased sales volume, and potential price premiums. The key problems associated with certification relate to duties to ensure compliance with certification criteria by contractors and administrative difficulties. Respondents reported minimum price premiums for the sale of their certified timber. Additionally, the findings of the study pointed out that a nationally developed certification system can better recognise the roles and objectives of forest certification in the context of forest policy.

Keywords: Sustainable Forest Management, Forest Certification, Certified Forest Owners, Certification Cost

Enhancing China's Green Procurement of Legal Forest Products

Mingming Sun and Ke Zhang

TRAFFIC Bulletin, Volume 30, Number 1, 2018, 23-27p.

The scope of China's Green Public Procurement (GPP) policy is currently limited to the purchase of goods and does not include other activities such as services or projects. It relies on two “lists”: Energy Conservation Products (ECP) and Environmental Labelling Products (ELP). While these lists have simplified implementation of the GPP, they provide inadequate incentives for other environmentally integrated and innovative services, projects and goods to enter the GPP market, such as legal and responsibly sourced forest products. Although China's GPP market has grown dramatically in recent decades, it still has huge growth potential considering the scope for future expansion on procurement and increasing demand for environmentally friendly products.

This article summarises eight key findings from research conducted by TRAFFIC and The Sustainability Consortium (TSC) in 2016, and provides initial recommendations to enhance China's GPP policy for forestry products. More specific content can be found in the research report.

Keywords: Certification, Eco-Labelling, Forestry, Forest, Timber, Energy ConservationProducts, Green Public Procurement, Sustainability

Rules for Use of SFI On-Product Labels and Off-Product Marks

Sustainable Forestry Initiative
2121 K Street, NW, Suite 750
Washington, DC 20037

Sustainable Forestry Initiative, 2015, 19p.

In this report Sustainable Forestry Initiative presents the standards for its forest certification and wood and paper product labels. The SFI program meets guidelines on environmental claims in product advertising and communication issued by the U.S. Federal Trade Commission and guidelines on environmental labeling and advertising issued by the Competition Bureau of Canada. It describes the rules for use of SFI On-Product Labels and Off-Product Marks. It details the SFI program which has three on-product labels: two Chain-of Custody labels and one SFI Certified Sourcing label. Graphic presentation of the different colours of SFI logo is depicted in detail.

Keywords: Certification, Eco-Labelling, Forestry, Forest, Sustainable Forestry Initiative, SFI, Sustainability

Forest certification: the challenge of measuring impacts

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Current Opinion in Environmental Sustainability, Volume 32, June 2018, 104-111p.

ISSN: 1877-3435

This article studies the forest certification in a broader set of forest governance institutions and innovations. It examines how certification has been practiced to date, before investigating whether, when, and how it has achieved its intended impacts. Doing so reveals a number of gaps in existing knowledge that stem from narrow conceptualizations of impacts, limitations of available data, and epistemological challenges inherent to particular research designs. As a corrective, we propose a three pronged approach to improving impacts research that involves collecting better data, expanding the indicators under observation, and affording a greater role to concept and theory building that draws on mixed-method research to highlight slow-moving, multi-level, historical processes that result in important, but often under-analyzed, impacts.

Keywords: Forest Certification, Ecolabel, Sustainable Forest Management, Forest, Forest Governance Institutions

Comparing management schemes for forest certification and timber-legality verification: Complementary or competitive in Indonesia?

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Journal of Sustainable Forestry, Volume 38, Issue 1, 2018, 68-84p.

ISSN: 1054-9811|1540-756X

Indonesian small-scale forest holders are facing a dilemma due to the implementation of a mandatory national timber-legality verification scheme and an internationally popular forest certification scheme. The problems arise from limited financial, technical, and administrative information concerning the most preferred scheme and the “imperfection of such a scheme” for long-term business needs. Using the Forest

Certification Assessment Guide (FCAG) this paper identifies the characteristics of four third-party forest certification schemes currently working in Indonesia, namely FSC, PEFC, LEI, and SVLK. An online questionnaire was used to survey a wide range of respondents about the future development of contested schemes and those preferred by small-scale forest holders. Our findings show that although FSC scheme obtained the highest score and is considered the best scheme according to the FCAG, small-scale forest holders prefer SVLK scheme, which had the lowest FCAG score because of its mandatory nature and available subsidies. Statements by the four schemes' proponents, which delegitimize other schemes, reveal they are in competition especially in winning market acceptance and local adaptability. Finally, we suggest proponents enhance aspects where their schemes are lacking and contrive a comparable certification scheme in order to induce willingness to be certified.

Keywords: Forest Certification Schemes, Timber-Legality Verification System, Comparison, FCAG, FSC, PEFC, IFCC, LEI, SVLK

Does eco-certification stem tropical deforestation? Forest Stewardship Council certification in Mexico

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Journal of Environmental Economics and Management, Volume 89, May 2018, 306-333p.

ISSN: 0095-0696

Since its creation more than 25 years ago as a voluntary, market-based approach to improving forest management, forest certification has proliferated rapidly in developing countries. Yet we know little about whether and under what conditions it affects deforestation. We use rich forest management unit-level panel data—including information on deforestation, certification, regulatory permitting, and geophysical and socioeconomic land characteristics—along with matched difference-in-differences models to identify the effect of Forest Stewardship Council (FSC) certification on deforestation in Mexico, the country with the third-highest number of FSC certifications in the developing world. We test for a variety of different temporal and subgroup effects but are unable to reject the null hypothesis that certification does not affect deforestation.

Keywords: Eco-label, Certification, Forest Cover Change, Mexico, Forest Stewardship Council, FSC, Ecolabel, Certification

Greenwashed Timber: How Sustainable Forest Certification has failed

Richard Conniff American non-fiction writer
Connecticut, Maine, USA

Yale environment 360, February 20, 2018

The Forest Stewardship Council was established to create an international system for certifying sustainable wood. But critics say it has had minimal impact on tropical deforestation and at times has served only to provide a cover for trafficking in illegal timber. Author has presented his opinion in this article. He discusses the “wood-mining” and the FSC label at times served merely to “greenwash” or “launder” trafficking in illegal timber. He also presented the case studies how a Chinese company marketing in the U.S. offered to put an FSC label on illegal wood in exchange for a 10% markup.

Keywords: Forest Certification, Codes of Conduct, Forest Stewardship Council, Sustainable Forestry Initiative, Sustainable Forest Management, Wood, Sustainable Forest

Estimating preferences for wood products withenvironmental attributes

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Forests, Volume 9, Issue 1, 2018, 41-50p.

ISSN: 1999-4907

Tropical deforestation and forest degradation are serious problems for the global environment, as a result, sustainable forest management and forest certification have become important. In this study, using a choice experiment, we investigated, on the demand side, consumers' preferences and willingness to pay (WTP) for certified wood products that attempt to address public concerns regarding deforestation and forest degradation. Specifically, we investigated how estimates of consumers' preferences and WTP were influenced by product attributes such as quality, certification, and price. To the authors' knowledge, few studies of this kind have been conducted, particularly in Japan. The study's main finding was that Japanese consumers were willing to pay a premium for certified wood products with attributes related to sustainable forest management, most preferred were products with attributes related to preserving biodiversity. These findings indicate that consumers are willing to pay a premium for products that contribute to solving the problems of deforestation and forest degradation.

Keywords: Wood Products, Choice Experiments, Sustainable Forest Management, Japan, Ecolabel, Certification

GPP/Ecolabel criteria for timber and timber products: Final Report

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European Commission

Directorate-General for Environment (European Commission), Dorcet: Efeca, Draft Proposal, 2018

ISBN: 978-92-79-92899-4

The objective of this study is to propose requirements for sustainability criteria for wood-based products produced from sustainably managed forests, consistent with the definition of sustainable forest management provided by the EU Forest Strategy, for use in the EU's common green public procurement (GPP) and EU Ecolabel criteria, including their assessment and verification procedures. The report presents the initial version of proposed criteria and the reasoning behind their selection, based on the results from the desk research stage of the project and the stakeholder consultation. It also provides background information on different approaches to defining sustainability in this context. It contains the proposed criteria for legality and sustainability for use in the common EU GPP criteria and their relevance to the EU Ecolabel.

Keywords: Eco-Label, European Union, Forestry Policy, Public Contract, Sustainable Forest Management, Wood Industry, Wood Product, Wood Production

Has Forest Certification Reduced Forest Degradation in Sweden?

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Land Economics, Volume 93, Number 3, August 2018, 390–112p.

ISSN: 0023-7639| 1543-8325

This paper estimates the effects of certification of nonindustrial private forest owners on forest degradation in Sweden—one of the countries with the largest total area of certified forests. We rely on official forest inventory data, information on certification status, and impact evaluation methods to identify the causal effect of certification on three key environmental outcomes. We find that certification has not halted forest degradation in that it has not improved any of the environmental outcomes. Moreover, for forest certification to have an effect, the standards should be tightened and the monitoring and enforcement of forest certification schemes strengthened.

Keywords: Sustainable Forest Management, Forest Certification, Forest Inventory, Forest Ecosystem, Forest Inventory

GPP: Ecolabel criteria for timber and timber products

Duncan Brack,
General Directorate for the Environment,
European Commission

August 2018, 130p.

ISBN /ISSN: 978-92-79-92899-4

The objective of this study is to propose requirements for sustainability criteria for wood-based products produced from sustainably managed forests, consistent with the definition of sustainable forest management provided by the EU Forest Strategy, for use in the EU's common green public procurement (GPP) and EU Ecolabel criteria, including their assessment and verification procedures.

Keywords: Environment Policy, Protection of the Environment, Public Procurement, Forestry, Eco-Label, European Union, Forestry Policy, Public Contract, Sustainable Forest Management, Wood Industry, Wood Product, Wood Production

Progress of forest certification in China

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Frontiers of Agricultural Science and Engineering, Volume 4, Issue 4, 2017,414-420p.

ISSN: 2095-7505|2095-977X

The Chinese Government is committed to forest certification as a market-based instrument to promote sustainable forest management. Forest certification includes a number of regulations, rules and policy paradigms related to certification and there are numerous challenges facing the uptake of forest certification in China. In particular, the ban on commercial logging in natural forests implemented by the Natural Forest Protection Program has resulted in little demand for forest certification of natural

forest management units. However, there are also certification opportunities, such as the certification of non-timber forest products that benefit local communities who depend on forests for the goods and services they provide. This paper provides an overview of progress in forest certification in China, including its development history, organizational structure, scheme documents, certification scopes and standards, accreditation, certification bodies and auditors, and certification logos. The paper also focuses on government support for the supervision and management of forest certification through policy incentives, including the potential government procurement and subsidy policies for certified forest products. Finally, the paper analyzes certified non-timber forest products as an example of the value of certification to promote sustainable forest management and how the concept of forest certification can be used to add value to forests and ensure they are responsibly and sustainably managed. In general, forest certification in China has a clear role in sustainable forest management, both for timber and non-timber forest products.

Keywords: China Forest Certification Scheme, Forest Certification, Government Support, Opportunities and Challenges, Sustainable Forest Management, Certification, Forest

Challenges for developing Forest Stewardship Council certification for ecosystem services: How to enhance local adoption?

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Ecosystem Services, Volume 28, Part A, December 2017, 55-66p.

ISSN: 2212-0416

The rise of ecosystem services (ES) as a conservation and management tool has changed the way forests are conceived, but so far its translation into management actions has been limited. In this paper, authors discuss the development of certification of forest ecosystem services (FES) from the perspective of those implementing it at the local level. Authors focus on the lessons that emerged from applying the Forest Stewardship Council (FSC) certification framework at selected sites in Chile, Indonesia, Nepal and Vietnam.

The results indicate a clear relationship between local and global levels in the development of FSC FES certification. Although the FSC already had a broad vision of ES, it was only through local-level learning within a specific pilot experiment that the vision evolved and resulted in more formal FES certification becoming part of FSC forest management certification. Authors also found that those sites where participatory approaches to management and decision-making were applied could work with an undefined vision of the future system, and still successfully design and implement management activities. However, overall the lack of specific vision and

detailed information about future FES certification was problematic in attracting market interest in FSC certified ES.

Keywords: Biodiversity, Conservation, Forest Management, Innovation, Payments for Ecosystem Services, Sustainability Transition, Forest Stewardship Council, Certification

Forest Management and Planning

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Cambridge: Academic Press, 2nd Edition, 2017, 362p.

ISBN: 978-0-12-809476-1

Forest Management and Planning, Second Edition, addresses contemporary forest management planning issues, providing a concise, focused resource for those in forest management. The book is intermixed with chapters that concentrate on quantitative subjects, such as economics and linear programming, and qualitative chapters that provide discussions of important aspects of natural resource management, such as sustainability. Expanded coverage includes a case study of a closed canopy, uneven-aged forest, new forest plans from South America and Oceania, and a new chapter on scenario planning and climate change adaptation.

Keywords: Sustainable Forest Management, Forest Certification, Carbon Sequestration, Forest Supply Chain Management, Forest Planning, Voluntary Set-Aside, Structural Connectivity, Functional Connectivity, Indicator for Biodiversity Conservation, Green Infrastructure, Certification, Critical Environmentalism, Forestry, FSC, Forest Stewardship Council

Sustainable Forest Management and Forest Certification

Prof. Dr. Fred Cubbage, Guest Editor
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Forests: A special issue on“Forest Economics and Human Dimensions” 31 Dec 2017

ISSN: 1999-4907

Forest certification is one of the best-known voluntary environmental programs designed to demonstrate corporate social responsibility. Forest certification has been termed a non-state market-driven governance mechanism, or as co-governance

among private sector, nongovernment organizations, and government stakeholders. About 466 million hectares (ha), or about 11% of the world's 3.9 billion ha of forests, were certified by 2016 under one of the two major systems of Forest Stewardship Council (FSC) or the Programme for Endorsement of Forest Certification (PEFC). While forest certification has become well established, scientific questions regarding its empirical impacts and effectiveness remain. Has forest certification improved forest management on the ground, improved social forestry processes, or enhanced economic returns compared to noncertified forests? These questions regarding the impacts of forest certification have been examined mostly through opinion surveys and secondary data such as summaries of audit reports, as well as some new mixtures of inventory data and surveys. Few field studies have been conducted, and even those have small samples, with little or no scientific matching of certification properties versus similar counterfactuals of non-certified properties. This Special Issue focuses on research that demonstrates how professionals, certified forest land managers, and scientists can identify, measure, practice, implement, and evaluate whether forest certification is enhancing forest sustainability. Research articles focused on measuring and evaluating the impacts of forest certification on sustainable forestry through better ecological, social, or economic processes.

Keywords: Forest Certification, Programme for Endorsement of Forest Certification, Forest Management Impacts, Forest Stewardship Council, Forest Management, PEFC, FSC, Certification

Mapping certified forests for sustainable management - A global tool for information improvement through participatory and collaborative mapping

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Forest Policy and Economics, Volume 83, October 2017, 10-18p.

ISSN: 1389-9341

There are currently no spatially explicit, openly accessible data available on forest certification below national level, so understanding the drivers of certification in the past, examining the scope for further certification and using this information for development of future sustainable forest management strategies is challenging. Hence, this paper presents a methodology for the development of a global map of certified forest areas at 1 km resolution in order to satisfy this information need. Validation of the map with certified areas in Russia showed reasonable results, but the lack of openly accessible data requires broadening the strategy for improving the global certification map in the future. Thus, the second aim of the paper is to present an online tool for visualization and interactive improvement of the global forest certification product through collaborative mapping, aiming at a range of stakeholders including third-party certifiers, green NGOs, forestry organizations, decision-makers, scientists and local experts. Such an approach can help to make more accurate information on forest certification available, promote the sharing of data and encourage more transparent and sustainable forest management, i.e. both producers and users can benefit from this online tool.

Keywords: Forest Certification, Mapping, FSC, PEFC, Citizen Science, Geo-Wiki, Ecolabel, Certification, Forest, Forestry Organisation, Sustainable, Forest Management

Forest Certification Perspectives in the Wood Products Supply Chain in Virginia, USA

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Forests, Volume 8. Number 10, 2017, 364p.

ISSN: 1999-4907

Participation among private forest owners, logging contractors, and wood products manufacturers in the forest certification sector remains low. Those that enroll are mainly large-acreage owners and specialized manufacturers. Little is known about certification perspectives across the supply chain and how they relate. Comparing what owners, contractors, and manufacturers think about certification would increase insight regarding sector growth. In this study, 2741 private forest owners, logging contractors, and wood products manufacturers in Virginia, U.S.A. were surveyed about their beliefs regarding the impact of certification on economic opportunities and image and the extent to which they think it positively affects the forestry sector and understand how to certify forestland. Co-orientation was used to map alignment and predictions between respondents. Owner and contractor responses were similar and

predictions about each other mostly accurate, but manufacturer responses and predictions were largely incongruent. Manufacturers generally aligned more so with contractors than owners but contractors identified slightly more with owners. Owners and contractors shared perspectives and a discernable identity, whereas manufacturers viewed certification in a less positive light. Implications for participation in forest certification focus largely on interrelationships of actor perspectives regardless of scale and emphasize the roles each can play in the forest certification sector.

Keywords: Sustainable Forestry, Private Forest Owners, Logging Contractors, Wood Products Manufacturers, Co-Orientation

Eco-label credibility and retailer effects on green product purchasing intentions

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Forest Policy and Economics, Volume 80(C), 2017, 200-208p.

ISSN: 1389-9341

Eco-labels offer an identifiable marketing tool to convey a product's environmentally friendly and socially desirable characteristics to final consumers. Furniture offers a prime example of the opportunities and challenges to the expansion of green products. This study examined how eco-label credibility and retailer type affect green purchasing intentions (GPIs). Data from a sample of final consumers collected across 124 cities in China were analyzed using a Bayesian approach. Consumers who purchase furniture at supermarkets exhibited a lower GPI compared with consumers at other furniture retailers, ceteris paribus. Consumer perceived credibility of eco-labels, past green purchase, awareness of green furniture, level of education, and whether there is an elder family member in household were all found to positively affect consumers' GPI. Eco-labels may bring market opportunities for green furniture manufacturers but these are limited by effective communication and product outlets. It is intrinsic for green furniture manufacturers to choose retailers with a positive reputation among final consumers to improve credibility and potentially expand market share.

Keywords: Eco-Labelling, Sustainable Forestry, Ecolabel, Wood, Paper Products, Ecolabel Furniture, Green Furniture, Furniture, Consumers, China, Education, Supermarkets

Revision of EU Ecolabel criteriafor furniture products, Final technical report

Shane Donatello, Hans Moons and Oliver Wolf
Edificio Expo, c/ Inca Garcilaso, 3, Sevilla, 41092 (Spain)

Luxembourg: Publications Office of the European Union, 2017, 126p.

ISBN 978-92-79-65450-3| ISSN 1831-9424

The technical and ecological criteria for EU Ecolabel furniture are presented together with supporting rationale and relevant stakeholder discussion. The scope for furniture products has been significantly expanded to now include non-wooden furniture. New criteria have been developed for wood, cork, bamboo, rattan, plastics, metals, textiles, leather, coated fabrics, polyurethane foams, latex foams and glass. Restrictions have also been introduced for the use of hazardous substances and mixtures during production processes. Emissions of formaldehyde and other VOCs are restricted by certain criteria where relevant to the furniture product. Criteria relating to the final furniture product have been set to ensure that products are easier to repair and dismantle into constituent materials at end-of-life. This publication is a Science for Policy report by the Joint Research Centre (JRC), the European Commission's science and knowledge service.

Keywords: Eco-Labelling, Sustainable Forestry, Ecolabel, Wood, Paper Products, Ecolabel Furniture Eco-Label, European Union, Forestry Policy, Public Contract, Sustainable Forest Management, Wood Industry, Wood Product, Wood Production

Low carbon timber policies in Europe: Status quo of procurement policies, and regional or national policy framework

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Low Carbon Policies in Europe Deliverable T2.1.1, July 2017, 74p.

This report aims to make a link between low carbon policies and wood policies at European, national and regional level. European Union developed the concept of Green Public Procurement 5GPP°, to support the use of environmental products in public procurement. How public authorities use GPP? Do public authorities are able to use GPP in their market? How can public authorities use the GP to get low timber products? This document answers these questions. The purpose the project CaSCo is to develop and disseminate appropriate strategies and instruments for low carbon timber.

Keywords: Environment Policy, Protection of the Environment, Public Procurement, Green Public Procurement Forestry, Eco-Label, European Union, Forestry Policy, Sustainable Forest Management, Wood Industry

Advancing SDG Implementation through Forest Certification

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International Institute for Sustainable Development, 9 December 2016

The article highlights that the forest certification programmes are coming to the fore as an effective way to secure action on multiple forest-related Sustainable Development Goals (SDGS) and targets.Forest certification stands out as an effective tool for achieving sustainable forest management mainly because it is based on coherent sets of requirements agreed to by all stakeholders.It has made a difference because it is connected to labeling schemes for products, and processing industry and consumers have encouraged forest managers to apply certification schemes.Forest Certification is an SDG Indicator and the only tool to mobilize processing industries, public procurers and consumers to promote sustainable forest. FSC has been active in the discussion on the SDG indicator for SFM, and is pleased that in this concrete way it can contribute to the 2030 Agenda.

While forest certification is not the only way to contribute to the forest related SDGs, it is the most reliable tool to date of ensuring that the right mechanisms are put in place. The stakes are high and the work needed to achieve our goals is great, but the benefits for future generations are well worth the effort.

Keywords: Biodiversity, Sustainable Consumption & Production, Conservation, Sustainable Use, Sustainable Development, Forest Certification, Indigenous & Community Forests, SFM, Forests & REDD

Handbook on Forest Certification

Manmohan Yadav
Associate Professor of Marketing, Indian Institute Forest Management
Bhopal, Madhya Pradesh

Delhi: TERI, 2016, 328p.

ISBN:9788179933008

Handbook on Forest Certification, a thorough research work, discusses in detail the concepts and approaches required to meet the desired international standards of forest certification. It covers those aspects of forest certification that are practised globally and need to be applied in the emerging context of forests in India. The book focuses on changing global perspective on forest resources, importance and need for sustainable management of forests, increasing consumer awareness, and dealing with preferences for certified forest products.

Drawing on a wealth of information provided by valuable studies across the globe, this book discusses sustainable forest management and forest certification and their impact on conservation and development of biodiversity. It is a comprehensive and detailed guide for forest managers, forest owners, practitioners, forest-based industries, academicians, students and researchers, consultants, and policy makers for the forestry sector in India and South Asia.

Keywords: Forestry, Forest Certification, Ecology, Forest Management

The role of forest certification for biodiversity conservation: Lithuania as a case study

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European Journal of Forest Research, Volume 135, 2016, 361-376p.

ISSN: 1612-4677|1612-4669

The Forest Stewardship Council (FSC) forest certification system is a globally widespread market-driven mechanism that aims at responsible use and governance of forests, and its application is growing. However, the extent to which forest certification contributes effectively to maintaining forest biodiversity is an unresolved issue. We assessed the role of FSC certification for forest biodiversity conservation in Lithuania's state forests. First, authorsanalysed the indicators related to biodiversity conservation at different spatial scales in the FSC standard used in Lithuania. By applying morphological spatial pattern analysis and habitat suitability modelling, authors explored the structural and functional connectivity of forest habitat patches of formally and voluntarily set-asides for biodiversity conservation. According to the Lithuanian FSC standard, active measures in forest management for biodiversity should be imposed at three spatial scales: 'trees in a stand', 'stands in a landscape', and 'landscape in an ecoregion'. The total area set aside for biodiversity was 18.6 %, including 4.9% voluntary set-asides. The quality of habitats in terms of forest stand age was low, only 9.4% of all set-asides constituted older forests. The proportions of voluntary set-aside area varied among the different state forest enterprises, and the results indicated a clear trend to set aside non-forest or low productivity forest habitats. Small (<1 ha) habitat patches formed a major part of all set-asides, including formally protected areas. FSC certification alone was not able to maintain structural and functional connectivity of forests for species at multiple spatial scales in Lithuania. By keeping a minimum standard of 5% forestland set aside for biodiversity, the state

forest enterprises certified according to the FSC can only satisfy forest species with small habitat requirements. To maintain biodiversity, place-based learning among stakeholders for representative functional green infrastructures in concrete landscapes and regions, combined with transparent knowledge about the net effect of pressures and responses on the state of biodiversity, are necessary.

Keywords: Sustainable Forest Management, Formally Protected Forest, Voluntary Set-Aside, Structural Connectivity, Functional Connectivity, Indicator for Biodiversity Conservation, Green Infrastructure, Certification, Critical Environmentalism, Forestry, FSC, Forest Stewardship Council

Timber certification as a catalyst for change in forest governance in Cameroon, Indonesia, and Peru

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Policy instruments targeting environmental, social, and economic sustainability cover both local and global geographies and stem from both the public and private sectors. These policy instruments do not work in silos but interact throughout the regulatory process. In this paper we discuss interactions between public regulations and private certification that affect how forests are managed in three tropical countries: Indonesia, Cameroon, and Peru. We show how the governance regime in each of the countries has evolved in response to environmental and social issues. We focus on the Forest Stewardship Council's forest stewardship certification as it is the main global certification scheme in the tropical region and look at its role in attaining sustainability in timber production. Case study results from Indonesia, Cameroon, and Peru indicate that certification influences all stages of the policy process: agenda setting and negotiation, implementation, and monitoring and enforcement.

Case study results from Indonesia, Cameroon, and Peru indicate that certification influences all stages of the policy process: agenda setting and negotiation, implementation, and monitoring and enforcement. Results also suggest that certification introduces positive changes in management practices and improves social and environmental performance. However, its influence in attaining broader-scale sustainability is limited by a low level of uptake, notably in tropical countries

where the costs of getting certified and maintaining certification are high and the certification criteria are rather complex, as well as by some of its inherent characteristics, as it can only solve problems at the forest management unit level.

Keywords: Certification, Environmental Issues, Forest Governance, Legality, Social Issues, Sustainable Forest Management, Tropics, Ecolabel

Understanding and Efforts of Furniture Industries Facing Eco-Labeling in Central Java and Yogyakarta-Indonesia

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International Journal of Technology, Volume 7, Number 5, 2016, 810-818p.

ISSN: 2087-2100

Forest destruction in Indonesia has become a very serious problem and global concern. Eco-labels aim to combat illegal logging, illegal trading, and forest conversion. Eco-labeling in the furniture industry is slower in Indonesia than in competing countries such as China and Vietnam, where China has reached more than 1000 Chain of Custody (CoC) certification industrial units and Vietnam 238 units, while Indonesia has achieved only 78 units. But eco-labeling is perceived as a pressure on the international trade of the furniture industry. This study examines how the furniture industry in Central Java and Yogyakarta understands eco-labeling and what efforts the industry is making. Eco-labeling has a positive impact on the industrial environment and sustainable forestry, and it increases credibility/corporate image, market share, and profit. But not all buyers demand eco-labeling, so some companies deal with eco-labeling either by applying for certification or by looking for buyers that do not require the eco-label. Buyers who do not require the eco-label result in companies having less motivation to seek CoC certification. Other views about eco-labeling in the industry are also counterproductive, producing further obstacles to eco-label certification. Eco-labeling is often understood as unfair competition from developed countries, implemented as a barrier to entry into trade, and as inconsistent with The General Agreement on Tariffs and Trade (GATT)/The World Trade Organization (WTO). Eco-labeling is often considered a new form of colonialism rather than an instrument of environmental management.

Keywords: CoC, Eco-label, Furniture, Sustainable Forest, Chain of Custody, Trade

Forest certification as a tool to support sustainabledevelopment in forest management

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Journal of Forest Science, Volume 61, Number 8, 2015, 359–368p.

ISSN: 1212-4834|1805-935X

The concept of sustainable development is currently known and used in many contexts across a wide range of industries. Nevertheless, specific approaches to achieving the strategy of sustainability can be found in the individual sectors. The beginnings of sustainable management in forestry go back to the mid-18th century. Currently, certification systems contribute to sustainable behaviour in forests. In the Czech Republic, this concerns in particular PEFC and FSC certification systems. Both these certification systems include two different processes, forest management certification and chain of custody certification, i.e. including the wood-processing companies, where only certified wood must strictly be used. This article aims to evaluate the importance of certification for sustainable development in forestry. Given the clear superiority of the PEFC system in the Czech Republic, this paper focuses on the potential benefits for PEFC certificate holders. To determine the benefits of PEFC certification for sustainable development, a questionnaire survey was chosen. Assessment of the benefits for sustainable development depends on the subjective assessment of certification holders. The results suggest that the beneficial effect on sustainable development in forest management is clear in the forest property area of over 500 ha.

Keywords: PEFC, FSC, Social Aspects, Sustainability, Benefits of the Certification, Forest Certification, Forest Management

Effects of forest certification on the ecological condition of Mediterranean streams

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Journal of Applied Ecology, Volume 52, Issue 1, 2015, 190–198p.

ISSN: 1365-2664

Forest certification, a proxy for sustainable forest management, covers more than 10% of the world's forests. Under forest certification, forest managers and landowners

must comply with environmental, economic and social management standards aiming to promote forest conservation. Despite an increasing area of certified forests, there is a dearth of data on how forest certification is affecting the conservation of forest ecosystems and associated habitats. Here, authors assess the effects of Forest Stewardship Council (FSC) certification, one of the largest certification schemes in the world, on the ecological condition of streams crossing Mediterranean evergreen oak woodlands.

Authors used the Stream Visual Assessment Protocol (SVAP) to compare the ecological condition of streams located in areas with 3 and 5 years of certification, in non-certified areas and in least disturbed streams. Forest certification positively affected the ecological condition of the surveyed streams, but its effects were only measurable after 5 years of certification. Streams with 5 years of certification had more continuous, dense and diverse riparian vegetation when compared to streams located in non-certified areas. Moreover, the condition of streams located in areas with 5 years of forest certification was similar to the condition of least disturbed streams.

Synthesis and applications. Forest certification promotes the ecological condition of streams occurring within Mediterranean evergreen oak woodlands. This mainly happens because in areas under forest certification, managers and landowners have to comply with management practices that require them to remove or reduce the main causes for stream degradation, allowing riparian habitats to recover. Within landscapes with large and increasing areas under forest certification, such as the Mediterranean cork oak woodlands, the positive effects of certification on the ecological condition of streams may spread across the hydrographic network in the medium to long term**.**

Keywords: Cork Oak, Forest Management, Forest Stewardship Council, Freshwater Habitats, Rapid Bio-Assessment Protocol, Riparian Vegetation, Stream Visual Assessment Protocol, Forest Certification

Social and Environmental Impacts of Forest Management Certification in Indonesia

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PLOS ONE, July 1, 2015

In response to unsustainable timber production in tropical forest concessions, voluntary forest management certification programs such as the Forest Stewardship Council (FSC) have been introduced to improve environmental, social, and economic performance over existing management practices. However, despite the proliferation of forest certification over the past two decades, few studies have evaluated its effectiveness. Using temporally and spatially explicit village-level data on environmental and socio-economic indicators in Kalimantan (Indonesia), authors

evaluated the performance of the FSC-certified timber concessions compared to non-certified logging concessions. Employing triple difference matching estimators, we find that between 2000 and 2008 FSC reduced aggregate deforestation by 5 percentage points and the incidence of air pollution by 31%. It had no statistically significant impacts on fire incidence or core areas, but increased forest perforation by 4 km^2 on average. In addition, authors found that FSC reduced firewood dependence (by 33%), respiratory infections (by 32%) and malnutrition (by 1 person) on average. By conducting a rigorous statistical evaluation of FSC certification in a biodiversity hotspot such as Indonesia, we provide a reference point and offer methodological and data lessons that could aid the design of ongoing and future evaluations of a potentially critical conservation policy.

Keywords: Forest Certification, Forest Management Impacts, Forest Stewardship Council, Forest Management, FSC, Certification

SFI New and Unimproved: Analysis of Revised Sustainable Forestry Initiative Standards

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ForestEthics, January 2015, 5p.

In January 2015 the Sustainable Forestry Initiative released updated standards for its forest certification and wood and paper product labels. Forest Ethics reviewed the new Sustainable Forestry Initiative (SFI) standards and concludes that changes to the revised SFI standards are superficial and will result in no improvements in the forestry practices of logging companies associated with SFI. Even those small changes that may appear to mark improvements are process-oriented (rather than outcome-oriented) and are rife with loopholes that will result in no increase in the social and environmental sustainability of products bearing SFI labels. This report evaluates the revised SFI 2015-2019 Standards & Rules released in January 2015.

Keywords: Certification, Eco-Labelling, Environmental Governance, Nongovernmental Organizations, Forestry, Forest, Sustainable Forestry Initiative, SFI, Sustainability

Eco-certification and coffee cultivation enhance tree cover and forest connectivity in the Colombian coffee landscapes

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Regional Environmental Change, Volume 15, Issue 1, January 2015, 25–33p.

ISSN: 1436-3798 | 1436-378X

Eco-certification of agricultural commodities offers an appealing option to promote more sustainable practices among small holders, increase agricultural value, and lift farmers out of poverty through better market access. This study evaluates whether coffee cultivation is associated with changes in forest cover and forest fragmentation and whether the Rainforest Alliance eco-certification program has led to enhanced tree cover and greater landscape connectivity in the Colombian eastern Andes. Based on satellite imagery, geo-referenced coffee parcels and a pair–case comparison, we show that coffee-growing regions have larger areas in forest, larger forest patches, and better connectivity among patches than non-coffee areas. These differences, however, do not seem to be accentuated over time, except for dense forest cover in the coffee-growing region. The latter has increased since the introduction of a certification program that requires protection of forest remnants and riparian vegetation. Moreover, certified farms in the study area have increased the amount of tree cover on their plots significantly more than non-certified ones. Our study design, therefore, detects additionality in the impact of certification on tree cover increase: in a region with overall increase in tree cover, certified farms contributed significantly more to that trend than non-certified farms. This study presents the first evaluation of the impacts of certification in cultivated landscapes at the ecosystem level, detectable by Earth observation satellites.

Keywords: Eco-certification, Impacts, Coffee, Colombia, Agroforestry, Remote sensing, Rainforest Alliance, Ecolabel

Analysis of Certified Wood Product Use in Commercial LEED Green Building Projects

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Wood and Fiber Science, Volume 47, Number 3, 2015, 270-282p.

ISSN: 0735-6161.

There is a growing demand for green building products within the United States. Because of this increased demand and interest in green products, the potential exists for wood product manufacturers to gain additional market share opportunities within the green building sector. The overall objective of this study was to use spatial analysis techniques to evaluate the growth of green building projects and the use of certified wood products (CWPs) within these projects. The focus of this study was on green building projects certified as part of the US Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) that obtained the certified

wood credit. Using spatial analysis techniques, this study was able to identify geographic areas in which wood products were used and awarded points toward green building certification. Results indicated a trend of commercial LEED-certified projects that obtained the certified wood credit being geographically concentrated with time. The study also identified various “hot spot” county clusters throughout the United States for commercial LEED-certified projects that obtained certified wood materials. A spatial econometric regression analysis resulted in significant explanatory variables such as population of a county; obtaining LEED credits in material reuse, recycled material content, composite wood and agrifiber products, and regional material; and the density of Forest Stewardship Council (FSC)-certified product manufacturers within 161 km. The results of the study are expected to help improve availability of wood products by indicating potential green building marketing regions for wood product producers.

Keywords: Green Building Certified Wood, LEED, Spatial Analysis, Spatial Econometrics, Certified Wood, Certification

Forest Certification in Bolivia: A Status Report and Analysis of Stakeholder Perspectives

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Forest Products Journal, Volume 64, Number 3-4, 2014, 80-89p.

ISSN: 0015-7473

Forest certification systems are voluntary, market-based initiatives to promote the sustainable use of forests. The assumption is that consumers prefer sustainably sourced wood products. One of the major drivers for the creation of forest certification was to prevent deforestation in tropical forests. However, after 20 years of certification, only 10 percent of the global forest area is certified, mostly in temperate regions. Only 2% of tropical forests have been certified, and deforestation proceeds at alarming rates in those same areas. Africa and Latin America are the only regions with a net loss of forest area in the 2000 to 2010 decade. In this article, the status of forest certification is analyzed, and challenges and opportunities are evaluated using the case of Bolivia. After an initial period of successful implementation of certification, the

area of Bolivian forest under certification has fallen sharply, and deforestation has actually increased in the 2000 to 2010 period, compared with the previous decade. This research uses qualitative research methods to uncover the reasons for the rapid initial growth of certification in Bolivia, its subsequent decline, and prospects for the future of certification in this South American country from the perspectives of people living and working in Bolivia's forestry sector. Participants concurred that a strong regulatory framework and international support were key factors to the initial success of certification in Bolivia. Benefits from certification commonly cited were improvement in the standard of living of timber-reliant communities, better markets for certified products, and an improvement in the image of the forest products industry.

Keywords: Forest Certification, Tropical Forest, Certification, Ecolabelling

What is the role for forest certification in improving relationships between logging companies and communities?: Lessons from FSC in Cameroon

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International Forestry Review Volume 16, Number 1, 2014, 14-22p.

ISSN: 1465-5489

Responding to pressure from international markets, environmental NGOs and donors, several logging companies in the Congo Basin have opted for voluntary certification schemes, such as the one proposed by the Forest Stewardship Council (FSC). The FSC scheme promotes forest management that is environmentally appropriate, economically viable and socially beneficial. The latter component, which is the focus of this paper, aims at the optimal integration of the local population in the forest management. We assess local organizations active around six FSC certified concessions in Cameroon and evaluate their legitimacy and effectiveness in building and maintaining a positive relationship between communities and logging companies. Results show that FSC certification plays a key role in the emergence of multi-stakeholder platforms that function as mechanisms of improved 'social exchange'. To some extent, such exchanges also contribute to less conflicting relations between logging companies and local communities, as well as reinforcing the social requirements of the forest law. Some shortcomings, however, remain, and we suggest logging companies should consider improving the balance of power between themselves and the communities, notably by reviewing the current top-down approach in establishing and managing discussion platforms.

Keywords: FSC, Forest Certification, Effectiveness, Multi-Stakeholder Platform, Cameroon, Law Enforcement, Forest Stewardship Council

An Examination of Forest Certification Status among Logging Companies in Cameroon

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International Scholarly Research Notices, Research Article, Volume 2014, Article ID 323014, 8p.

This paper assesses the level of interest, awareness, and adoption of ISO 14001 and Forest Stewardship Council (FSC) certification schemes among logging companies in Cameroon. Eleven logging companies located in Douala in the Littoral Region of Cameroon were assessed through a structured interview using an administered questionnaire which was mostly analyzed qualitatively thereafter. The findings indicated that none of the companies was certified for ISO 14001, however 63.64% of them were already FSC-certified. Four companies (36.36%) were neither FSC- nor ISO 14001 EMS-certified. Among the factors found to influence the adoption rate was the level of awareness about ISO 14001 and FSC certification schemes. The main drivers for pursuing FSC certification were easy penetration into international markets, tax holiday benefits, and enhancement of corporate image of the logging companies through corporate social responsibility fulfillments. Poor domestic market for certified products was found to be the major impediment to get certified. To make logging activities more environmentally friendly and socially acceptable, logging companies should be encouraged to get certified through the ISO 14001 EMS scheme which is almost nonexistent so far. This requires awareness creation about the scheme, encouraging domestic markets for certified products and creating policy incentives.

Keywords: Forest Certification, Logging Companies, Forest Management, FSC Certification, Certification

How effective is forest certification?

Steve Germishuizen
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Durban Area, South Africa

SA Foresty Online, May 12, 2014

This article gives critical look at forest certification systems and their impacts on the world's forests. It discusses about Forest Stewardship Council which turns 20-years-old. In South Africa, certification is synonymous with the FSC, but there is another certification system with global reach; the Programme for Endorsement of Forest Certification (PEFC). The PEFC, which endorses any forest certification standards that meet its criteria, has certified the largest area – about 250 million hectares in 30 countries. The article compares the FSC and PEFC which are both not-for profit NGO's

that have been formed to protect forests, as a response to the Rio Convention on Biological Diversity held in 1992. The Forest Stewardship Council mission is to promote environmentally sound, socially beneficial and economically prosperous management of the world's forests. Africa is suffering deforestation and forest degradation at twice the world rate, according to the United Nations Environment Programme with 90% of West African forests already wiped out. One of the biggest challenges facing the certification movement globally is the certification of small holders. This problem is well illustrated in South Africa where over 76% of the plantation estate is owned and managed by large companies and the government, who are categorized as large-scale growers.

Keywords: Forest Certification, Forest Stewardship Council, Forest Management, FSC Certification, Certification, the Programme for Endorsement of Forest Certification

Choose FSC® certified wood and paper: Discover the benefits for your business

Forest Stewardship Council
FSC Global Development, GmbH Charles de Gaulle Straße 5
53113 Bonn, Germany

Forest Stewardship Council, 2013, 18p.

Wood - when purchased from a sustainable source like FSC- is a great raw material. It is environmentally friendly and renewable. And there are many more reasons to prefer certified wood or paper. This report has been designed to support different players in the market to explain the benefits of certified wood, not only froman environmental and social perspective, but also from the perspective of companies, in particular industries. It presents the different case studies. It provides the information on nation and international regulations on wood. It details the green public procurement policies for sustainable wood-based products of different countries.

Keywords: Forest Certification, Codes of Conduct, Forest Stewardship Council, PEFC, Sustainable Forestry Initiative, Sustainable Forest Management, Wood, Sustainable Forest

Non-timber forest products certification in India: opportunities and challenges

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Environment, Development and Sustainability, Volume 15, Issue 3, June 2013, 567–586p.

ISSN: 1387-585X|1573-2975

Forest certification has emerged as a marketing tool for linking the good forest management practices with the environmentally conscious consumers. Its genesis can be attributed to the society's concern for the social and environmental significance of forests. Forest management certification when coupled with the chain-of-custody certification, then, the supply chain stages for such forest products can carry an ecolabel. Non-timber forest products (NTFPs) are of socio-economic and cultural importance for the forest dwelling communities, particularly for the tropical countries like India. India is home to an amazing diversity of plants, with over 46,000 plant species recorded to occur there. NTFP's availability, utilization, commercialization, exploitation, management practices, policies and tenure systems in different parts of India have high diversity and variability. There is concern, however, that collection methods for most of NTFP species are destructive and wild populations are declining as a result. Thus, the harvest of NTFPs is coming under increasing scrutiny from certification programmes, as it plays a key role in the sustainable management of forest resources and community benefit worldwide. Thus, the present research paper highlights the issues relevant to certification of NTFPs in India, based on more than a decadal experience in dealing with this subject at Indian Institute of Forest Management, Bhopal.

Keywords: Forest certification, Ecolabel, Non-Timber Forest Products, Sustainable, NTFP Management, Forestry, Forest Product, Certified Forest Products

Is Forest Certification a Hegemonic Force? The FSC and its Challengers

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The Journal of Environment & Development, Volume 21, Issue 4, 2012, 391-413p.

ISSN: 1070-4965 | 1552-5465

Certification initiatives are an innovative response to both a perceived governance gap in industry regulation and the demands made on industry by civil society groups. They develop criteria for sustainable practices along supply chains, monitor compliance, and reward acquiescent firms by mitigating reputational risks and differentiating products for environmentally conscious consumers. They seek to accomplish this with minimal cost to taxpayers, nominal disruption to trade, and trivial cost to the private sector in terms of fees or inefficiencies. This article examines the Forest Stewardship Council (FSC) certification scheme as an example of the move toward non-state, market-driven environmentalism. By utilizing a critical, Gramscian approach, it finds that while the FSC can be seen as embedded in, and furthering the agenda of, the neoliberal political economy, a close comparison to rival, producer-backed schemes exposes its anti-hegemonic underpinnings.

Keywords: Certification, Critical Environmentalism, Forestry, FSC, Gramsci, Hegemony, Market-Driven, Nonstate, PEFC, Forest Stewardship Council, Programme for the Endorsement of Forest Certification

Developing Guidelines for an Ideal Ecolabel for Wood and Paper Products inthe U.S.

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Master's Thesis, Master's Degree Program in Forest Resources, November, 2012, 92p.

The objective of this study is to suggest guidelines for such a standardized eco-label for wood and paper products in the U.S. Specifically, author seeks insights from the literature, by conducting systematic reviews and analyzing the literature on eco-labeling in North America as well as in Europe. Eco-labeling has long been a prominent part of the European market with the world's oldest eco-label, “Blue Angel”, in the markets since 1978 (Blue Angel 2012c), and thus lessons learned from European studies may provide important insights for the US market.

Keywords: Eco-Labelling, Sustainable Forestry, Ecolabel, Wood, Paper Products

2012

Forest Certification: Opportunity and Challenge for the Wood Pellet Industry

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BIOMASS Magazine, April 05, 2012

Forest certification standards are increasingly important in the pellet industry, but can be confusing to producers and customers alike. The use of wood for pellets, however, is causing concern among environmental activists, government agencies and competing sectors of the forest and paper industries. A study by a team of environmental organizations, including the National Wildlife Federation and the Southern Environmental Law Center, says the atmospheric impact of biomass production, at least in the short term, is not carbon neutral. But a number of studies argue otherwise. Pellets are an excellent supplement to coal in power plants and can reduce carbon emissions by about 15 percent without disrupting current power plants and industrial processes, according to the February study "Biomass Supply and Carbon Accounting for Southeastern Forests." With about half of the electricity in the U.S. produced by coal plants, a domestic switch to wood pellets represents another huge market opportunity. Producers should ensure that they know more about forest certification issues and applicable standards, claims and labels than their customers do, and that they are prepared to assure customers that their wood pellets are legally and sustainably sourced.

Keywords: Eco-Labelling, Sustainable Forestry, Ecolabel, Wood, Forest Certification, Wood Pellet Industry

2011

Certification of forests and wood products in Serbia in the context of new European Union legislations: Current situation, problems and challenges

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Glasnik Šumarskog Fakulteta, Volume 2011, Issue103, 2011, 7p.

ISSN: 0353-4537

The paper presents research results of the current situation in the area of certification of forests and wood products in Serbia in the context of new European Union legislation referring to the placement of wood and wood products on this market. The objective of the research was to observe the situation, phases which Serbia implemented in the process of forest and wood products certification until now, as well

as the problems and challenges the companies in this process face. Based on research results, future development of the market of certified wood products in Serbia was assessed and the proposal of measures which should be realized in order for Serbia to become a country whose companies will be ready for the moment when provisions and measures of the new EU legislation become effective was given. The selection of the abovementioned objective was conditioned by the fact that from January 1st, 2013 new legislation takes effect, with significantly stricter terms for the placement of wood and wood products from other countries on this market. One of the conditions which will have to be fulfilled by the companies wishing to export their products on this market refers to proving their origin. Since the EU is the most significant market for wood products exported from Serbia, fulfillment of the stated and other terms from the new EU legislation is of great importance to Serbian companies. Until the beginning of September 2010, only 387,000 ha were certified, namely 17.2% of the total area under forests. In the same period, only 33 wood processing companies in Serbia possessed CoC certificates for their products. Such a small number of companies possessing certificates for their wood products compared to competitive neighboring countries can represent a serious limitation in achieving their satisfactory competitiveness on the EU market in the following period.

Keywords: Forest Certification, Europe, FSC, Sustainable Forest Management, Non-Conformity, Forest Management, EU Legislation, Legislation, Certification, Forest, Wood, Export

Impacts of sustainable forestry certification inEuropean forest management operations

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WIT Transactions on Ecology and the Environment, Volume 148, 2011, 207-218p.

ISSN: 1743-3541

The article evaluates impacts of forest certification in promoting sustainable forest management in Europe. Forest certification is one of the most widespread non-governmental initiatives for sustainable forest management with 400 million ha being certified by 2011. Authors have analysed 1000 non-conformities raised by certification bodies during 245 FSC forest management audits in 32 European countries. The raised non-conformities indicate the areas where certification has had largest impact on enforcing sustainable forest management. Results reveal biggest challenges in ensuring protection of nature values and stakeholder communication.

Keywords: Forest Certification, Europe, FSC, Sustainable Forest Management, Non-Conformity, Forest Management

Forest Certification, its Scheme and Process

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The Initiation, Volume 4, 2011, 125-132p.

ISSN: 2091-0088

Forest Certification (FC) is a process of certifying any forest by an independent party.During the 80's when forest was heavily destructed, the need of the forest certification wasfelt, and was accepted worldwide.The interest for FC varies as per the needs of the peopleand/or organizations involved. Various organizations are involved in the certificationprocess, major ones being Forest Stewardship Council (FSC),Program for the Endorsement of the Forest Certification (PEFC) and other process vary from country to country. This article deals with the certification bodies, process involved and the responsibilities of thestakeholders.

Keywords: Forest Certification, Forest Management, Principles, Environmental benefits**,** Program for the Endorsement of the Forest Certification, PEFC, Forest Stewardship Council, FSC

Comparing Sustainable Forest Management Certifications Standards: A Meta-analysis

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Ecology and Society, Volume 16, Number 1, article 3, 2011, 24p.

ISSN: 1708-3087

To solve problems caused by conventional forest management, forest certification has emerged as a driver of sustainable forest management. Several sustainable forest management certification systems exist, including the Forest Stewardship Council and those endorsed by the Programme for the Endorsement of Forest Certification, such as the Canadian Standards Association – Sustainable Forestry Management Standard CAN/CSA - Z809 and Sustainable Forestry Initiative. For consumers to use certified products to meet their own sustainability goals, they must have an understanding of the effectiveness of different certification systems. To understand the relative performance of three systems, we determined: (1) the criteria used to compare the Forest Stewardship Council, Canadian Standards Association – Sustainable Forestry Management, and Sustainable Forestry Initiative, (2) if consensus exists regarding their ability to achieve sustainability goals, and (3) what research gaps must be filled to improve our understanding of how forest certification systems affect sustainable forest management. We conducted a qualitative meta-analysis of 26 grey literature references (books, industry and nongovernmental organization publications) and 9

primary literature references (articles in peer-reviewed academic journals) that compared at least two of the aforementioned certification systems. The Forest Stewardship Council was the highest performer for ecological health and social sustainable forest management criteria. The Canadian Standards Association – Sustainable Forestry Management and Sustainable Forestry Initiative performed best under sustainable forest management criteria of forest productivity and economic longevity of a firm. Sixty-two percent of analyses were comparisons of the wording of certification system principles or criteria, 34% were surveys of foresters or consumers. An important caveat to these results is that only one comparison was based on empirically collected field data. Authors recommend that future studies collect ecological and socioeconomic data from forests so purchasers can select certified forest products based on empirical evidence.

Keywords: Canadian Standards Association – Sustainable Forestry Management, CSA-SFM, forest certification, Forest Stewardship Council, FSC, meta-analysis, public forests, SFI, sustainable forest management, Sustainable Forestry Initiative

Sustainable Procurement of Wood and Paper-based Products: Guide and resource kit

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2. 10 G Street, NE (Suite 800), Washington DC 20002, United States

Version 2 Update June 2011, 190p.

ISBN: 978-3-940388-18-6

The purpose of this Guide is to assist sustainability officers and business procurement managers to develop and implement their wood and paper-based procurement policies. This Guide identifies and reviews issues central to procurement of wood and paper-based products, and highlights resources that can be of help. The guide is designed as: **A decision support tool** – by providing simple and clear information on existing approaches to the procurement of wood and paper-based products from legal and sustainable sources, as well as providing additional references and resource materials, and **An information tool** – to help customers frame and formulate their own sustainable procurement policies for wood and paper-based products, defining specific requirements aligned with core company values and building and maintaining stakeholder confidence. The guide will help purchasers to define requirements for their procurement policies, engage in dialogue with stakeholders, seek resources to meet procurement policy requirements, and assess suppliers.

Keywords: Forest Certification, Ecolabel, Forestry, Forest Product, Timber, Certified Forest Products, Wood and Paper-based Products

The influence of forest certification on environmental performance: an analysis of certified companies in the province of Quebec

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Forest certification is becoming increasingly important in modern forestry. The number of companies that use certification as a marketing tool increases every year. Despite this growing popularity, the influence of certification on the environmental performance of certified companies is still unclear. Thus, the objective of this study was to investigate the relationship between the environmental performance of companies and their participation in a forest certification process. A qualitative approach was used to establish this relationship. Analysis shows that it is difficult to clearly define improvement in environmental performance. Nevertheless, participants in this study believe that becoming certified had a positive influence on their company. Results also show that changes brought by certification vary by standard. It was also shown that forest certification can provide credibility and competiveness to certified companies.

Keywords: Forest Certification, Sustainable Forest Management, Environmental Certification, Forest Management, Ecological Sustainability, Sustainable Timber

Private cost-benefits of voluntary forest product certification

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The International Forestry Review, Volume 12, Number 1, 2010, 1-12p.

ISSN: 14655489

Forest certification is intended to be a market-based incentive to promote the sustainability of forest lands and forest management. However, undertaking a certification can be a costly exercise, and the economic benefits may not be immediately clear. The three most important market benefits are potentially market access, improved public image and price premiums. Although forest certification has achieved major progress by enabling certified forest products to penetrate some environmentally sensitive market niches and by maintaining and enhancing the public image of forestry companies, the price premium has proved difficult to realize,

especially for commodity products such as pulp and structural lumber. When considering the actual purchasing behaviour of consumers, there is little evidence to verify that the expressed willingness to pay a price premium will materialize in the market place. Considerable uncertainty exists as to why this might be the case, and the presence of too high a premium could drive consumers towards cheaper products derived from unsustainable (or illegal) forestry activities.

Keywords: Forest Certification, Sustainable Forest Management, Timber, Environmental Certification, Price Premiums, Forest Management, Ecological Sustainability, Sustainable Timber

The Forest Certification Wars: What Are They Really About?

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Trim Tab Magazine, Volume 4, winter 2009/2010, 37-41p.

For more than a decade, an epic battle has been playing out between rival forest certification systems. In the U.S., there are two principal competitors: the Forest Stewardship Council (FSC), which enjoys the support of many well-known environmental groups and exclusive recognition by Cascadia Green Building Council's Living Building Challenge; and the Sustainable Forestry Initiative (SFI), whose origins lie in the major U.S. timber industry trade association, the American Forest & Paper Association, and whose supporters and certificate-holders include industry giants like Weyerhaeuser. The rivalry between FSC and SFI has intensified since 2006 when the U.S. Green Building Council initiated a process for revising its Certified Wood Credit, which, if ratified by USGBC members, would change it from an FSC-only credit to one that will be governed by a USGBC "forest certification benchmark" – a set of metrics by which USGBC will judge which forest certification systems are worthy of LEED recognition.

Keywords: Forest Certification, Sustainable Forest Management, Timber, Environmental Certification, Forest Management, Ecological Sustainability, Sustainable Timber, Forest Stewardship Council, Sustainable Forestry Initiative, Ecolabelling

Aboriginal Peoples and Forest Certification: a Review of the Canadian Situation

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Ecology and Society, Volume 15, Number 3, September 2010, 19p.

ISSN: 1708-3087

Authors assessed in this article how different certification standards address Aboriginal issues in Canada, augmenting current legislation related to Aboriginal issues. The benefits from forest certification and the obstacles to its adoption by the Aboriginal community are also reviewed. They conclude that it would take significant effort, time, and resources to achieve widespread Aboriginal adoption of forest certification.

Keywords: Aboriginal Forestry, Aboriginal Peoples, Canada, First Nations, Forest Certification, Certification, Standards

Eco-labelling of wood, and its effectiveness in consumer guidance and conservation

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CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources,Volume 4, Number 070, 2009, 1-18p.

ISSN:1749-8848

Eco-labelling of wood has developed at an increasing rate over the last few decades. This can be regarded as a response to consumers' demand for an intangible attribute of wooden products that certifies origin in sustainably managed forests. Eco-labelling is a way of solving information asymmetry in markets, signalling a production standard that consumers care about, without being able to verify this quality from the product itself. If eco-labels convey correct and sufficient information about forestry practices and forest conservation to the consumers, their willingness to pay price premiums for eco-labelled alternatives will give land owners and forest product suppliers an incentive to provide the demanded environmental quality. To assess the effectiveness of eco-labelling in consumer guidance and conservation, this review article will particularly assess the following: what is the indication from economic literature on the emergence and functionality of eco-labelling, and what characterizes the eco-oriented consumers and what is the range of price premiums they will pay for eco-labelled wood? The review ends with a discussion on alternative approaches to the understanding of eco-labelling and the assessment of its degree of success.

Keywords: Certification, Conservation, Consumer Protection, Labelling, Protection of Forests, Reviews, Wood Products, Willingness To Pay, Consumer Advocacy, Labeling, Labels

Certification Schemes and the Impacts on Forests and Forestry

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Annual Review of Environment and Resources, Volume 33, 2008, 187-211p.

ISSN: 1543-5938

Certification schemes have emerged in recent years to become a significant and innovative venue for standard setting and governance in the environmental realm. This review examines these schemes in the forest sector where, arguably, their development is among the most advanced of the sustainability labeling initiatives. Beginning with the origins, history, and features of schemes, the review synthesizes and assesses what we know about the direct effects and broader consequences of forest certification. Bearing in mind underlying factors affecting producers' decisions to certify, direct effects are examined by describing the uptake of schemes, the improvements to management of audited forests, and the ameliorative potential of certification for landscape-level concerns such as deforestation and forest protection. In assessing broader consequences, we look beyond the instrument itself to detail positive and negative unintended consequences, spillover effects, and longer-term and slow-moving effects that flow from the emergence of the certification innovation.

Keywords: Effectiveness, Environmental Governance, Forest Certification, Non-state Governance, Social and Environmental Certification, Certification

A framework for assessing the effectiveness of forest certification

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Canadian Journal of Forest Research, Volume 38, Issue 6, 2008, 1357-1365p.

ISSN: 0045-5067|1208-6037

With increasing concerns about the costs of forest management, there is a need to rigorously evaluate any management activities that add to costs. Certification has been widely adopted at considerable financial cost to those managing forests. Although there have been many studies of the impacts of certification, there is no comprehensive framework for assessing whether or not certification has been

effective in achieving its goals. To do this, certification needs to be viewed as a part of an international environmental regime. Using established methodologies, this paper applies an evaluation framework and examines forest certification effectiveness in a number of categories: problem solving, goal attainment, behavioural effectiveness, process effectiveness, constitutive effectiveness, and evaluative effectiveness. It is too early to assess its effectiveness in problem solving and goal attainment. However, forest certification has been quite successful at process and constitutive effectiveness and is now widely recognized by a range of institutions. Its effectiveness in changing behaviours is less clear, and its evaluative effectiveness remains to be determined.

Keywords: Forest Products, Forest Certification, Forest Management, Labelling, Certification

Experience with NTFP Certification in Brazil

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Forests, Trees and Livelihoods, Volume 18, Issue 1: Certification of Non-Timber Forest Products, 2008, 37-54p.

ISSN: 1472-8028|2164-3075

Certification of forest management through the Forest Stewardship Council started in the 1990s, and focused on timber. Considerable work on the part of NGOs, communities, the private sector, researchers and governments has resulted in incipient certification of NTFPs, both by industries and communities. In the tropics, Brazil has had an important leadership role in this process, both in the development and adaptation of the Forest Stewardship Council system to this purpose and to increase the accessibility of FSC certification for small holders. In this paper we review the history of this process, present cases of certification in Brazil, and discuss their links with the private sector and public policies. Finally, authors analysed the factors that have contributed to the successes and constraints of these efforts in the Brazilian context.

Keywords: Non-Timber Forest Products, Communities, Forest Management, FSC, Markets and Marketing, Private Sector, Public Policies, NTFP Certification, Certification

Non-Timber Forest Products and Certification: Strange Bedfellows

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Forests, Trees and Livelihoods, Volume 18, Issue 1: Certification of Non-Timber Forest Products, 2008, 23-25p.

ISSN: 1472-8028|2164-3075

Interest in non-timber forest products (NTFPs) and forest certification burgeoned in the late 1980s in response, partly, to concern over destruction of tropical rainforests. Eventually the two concepts were merged and proposed as a marketing option for NTFP producers in both temperate and tropical countries. This paper examines the experiences of NTFP certification within the Forest Stewardship Council over the past eight years. We describe some of the impediments that NTFP producers have encountered in obtaining certification, as well as successes. We find that certification and NTFPs are often incompatible. For those cases where NTFP certification is warranted, we offer several suggestions for improving the likelihood of success. The triumph of neoliberalism in international trade and aid circles all but assures continued commercialization of NTFPs. Certification may help ensure the environmental sustainability of such initiatives but it must not become a tool to exclude gatherers and or threaten local livelihoods.

Keywords: Development, Forest Harvesting, Forest Management, Forest Policy, International Trade, Certification, NTFP, Non-Timber Forest Products,

Timber certification: An overview

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http://www.fao.org/3/v7850e/V7850e04 . htm, 2008

This Article is an examination of the concept of timber certification, its origins and its present state of development. It explains how certification is designed to allow consumers to select products made from timber from sustainably managed forests. It concludes that awareness of the need for sustainable forest management is worldwide but agreement on the potential role of timber certification in achieving this goal is by no means equally widespread. Any viable timber certification scheme will need to be seen to be credible, objective with measurable criteria, reliable and independent and, most important, covering all types of timber. Participation must be

voluntary, non-discriminatory in nature and adaptable to local conditions, cost effective, practical and transparent. So far, timber certification has not been applied on a wide enough basis to prove its practicality in application, its effect on the market or its contribution to good stewardship of the forest. The issue remains highly political in nature and will no doubt continue to be a subject of active international and intergovernmental debate for some time before a solution is found.

Keywords: Certification, Forest Products, Forest Management, Forest Certification, Trade,Timber, Standards, Sustainability, Timber Certification

Beyond TimberCertification and Managementof Non-Timber Forest Products

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Indonesia: Center for International Forestry Research (CIFOR), 2008, 164p.

ISBN: 978-979-1412-44-5

This book is a valuable contribution and a practical guide for communities, researchers, policy makers, and donors interested in assessing the value of investing timeand effort in the still elaborate and costly process of gaining independentinternational recognition of sound management practices directed to harvestof non-timber forest products (NTFPs).The numerous case studies and examples cited by the book(drawing from 11 countries), make it clear that certification is still a majorundertaking and challenge, especially for isolated forest communities. Thisbook is especially helpful because it effectively identifies gaps in knowledge,community organizational capacity and legislation that still stand in the wayof sound forest management. It also points out the false dilemma of having tochoose between timber and non-timber forest management.

Keywords: Certification, Non-Timber Forest Products, Forest Management, Harvesting, Rural Communities, Community Forestry, Trade,Timber, Standards, Sustainability

Identifying the market segments for eco-labelled wood

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International Journal of Green Economics, Volume 2, Issue 2, 2008, 190–209p.

ISSN: 1744-9928 | 1744-9936

This paper reports on a market segmentation of eco-oriented wood furniture consumers. An Engel-Blackwell-Kollat (EBK) model of purchase decisions was combined with conjoint analysis to gather individual characteristics on information search, purchase assessment and choice. The eco-oriented segments were identified and described, applying both a priori predictive segmentation based on lifestyle characteristics and post hoc cluster-based segmentation based on the conjoint choice part-worths and product attribute preferences. A convenience sample of consumers at an IKEA warehouse were interviewed in situ, responding to EBK-related questions on the demand for eco-labelled wood furniture, information search and trust, the evaluation of product attributes, sequential conjoint choices and media use and media interest. Based on the a priori segmentation, modern idealists obtained the highest eco-label part-worth. This segment represented a better distinguishable segment than the 'most eco-oriented' segment identified from the post hoc cluster-based segmentation. Some individual characteristics discriminated similarly for the a priori and post hoc segmentations.

Keywords: Eco-Labelling, Wood Furniture, Market Segmentation, Conjoint Analysis,

An Analysis of Social Aspects of Forest Stewardship Council Forest Certification in Three Ontario Case Studies

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Theses and Dissertations, 2007, 185p.

Forest certification is a market-based tool whereby forest management is evaluated against a set of standards that consider environmental, economic and social elements of sustainability. Certification is therefore a means of providing customers with the assurance that forest products are originating from sustainably managed forests. It grew out of the ideal of sustainable forest management (SFM) and pulls from its predecessor the concept of multiple dimensions of sustainability. The focus of this project was the international forest certification scheme Forest Stewardship Council (FSC).

A comparative case study approach was used to examine the social implications of certification in three FSC cases across Ontario. These cases include: Westwind Forest Stewardship Inc., Nipissing Forest Resource Management Inc., and Clergue Forest

Management Inc. The purpose of this study is to examine how, and to what extent, social issues are being addressed.

Three case studies are used to examine and compare how different forests deal with the social principles in the certification process. FSC addresses four main social issues which are the focus of research: consultation and public participation processes, recognition of Indigenous rights and culture, employee rights and community rights and well-being. Semi-structured interviews, a questionnaire and a document review were used to examine attitudes and opinions of social issues in certification, as well as the details and potential impacts surrounding specific social issues.

THESIS is submitted to the Department of Geography and Environmental Studies in partial fulfilment of the requirements for the Master of Environmental Studies degree

Keywords: Sustainable Forest Management, Forest Certification, Community Forestry, Certification, Forest Stewardship Council, FSC, Labelling

Effects of forest certification towards sustainable community forestry in Nepal

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BankoJanakari: A journal of forestry information for Nepal, Volume 17, Number 1, 2007, 11-16p.

ISSN: 1016-0582|2631-2301

In early 2005, 10,045 ha Community Forests (CFs) were certified in Bajhang and Dolakha districts of Nepal by using the Forest Stewardship Council (FSC) certification scheme. After two years of forest certification, subsequent questions are being asked such as: What benefits have certification brought for the Forest Users Groups (FUGs)? What tangible differences are there in forest management system because of forest certification? and What lessons have been learnt from the certified forests? In an attempt to answer these questions, a study was carried out in April 2007 in Dolakha district where 11 (2,182 ha) community managed forests were certified in 2005. On the basis of field study from two certified forests (Vitteripakha and Suspa) of the district, this paper analyzes the effects of forest certification and its implications for enhancing Sustainable Community Forestry (SCF) in Nepal.

Keywords: Sustainable Forest Management, Forest Certification, Community Forestry, Certification, Nepal, Community Forests, Forest Stewardship Council, FSC, Labelling

Eco-labelling: To be or not to be?Desirability of eco-labelsfrom an environmentaland poverty perspective

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CE Delft, May 2007, 92p.

Eco-labelling is increasingly considered as a market instrument to bring about greater sustainability of human consumption and production patterns. At the same time, however, the application of labelling is controversial. Concerns have been raised on its actual environmental effectiveness and on its impact on growth and poverty alleviation in developing countries. The fear is that eco-labels act as barriers to trade. Government agencies operating in the field of environmental management and poverty alleviation need to take a position in the debate on “eco-labelling, to be or not to be?” This report aims to help defining this position. A theoretical framework with key indicators of labelling impacts is developed. Subsequently, two existing labelling schemes are evaluated: the Forest Stewardship Council (FSC) and Marine Stewardship Council (MSC) label. The main conclusion is that the desirability of eco-labelling is limited at the moment. When eco-labels grow to be successful, they are likely to become undesirable from a poverty perspective, whereas their ability to solve environmental problems remains uncertain. Therefore, the government is advised to solely support eco-labelling in its role as market participant. As a regulator it should not be heavily involved in eco-labelling, leave these initiatives to the markets.

Keywords: Eco-Labelling, Forest Certification, Forestry,Ecolabel, Forest, Forest Stewardship Council, Marine Stewardship Council, Eco-label, Consumption, Production, Eco-labelling, Trade, Internationa, Developing Countries, Welfare, Effects

Development of a forest certification standard compatible with PEFC and FSC's management requirements. A case study from Greece

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Forestry: An International Journal of Forest Research, Volume 80, Issue 2, April 2007, 113–135p.

ISSN: 0015-752X|1464-3626

Greece currently has no national forest certification standard. This paper explains how a draft forest management standard for Greece was developed to be compatible with both the Forest Stewardship Council and the Programme for the Endorsement of Forest Certification schemes requirements. The draft standard was tested in two

contrasting forest areas to investigate its ease of operation, to indicate necessary refinements to the standard and to reveal major areas of weakness in current forest management practices. Field testing showed that the standard was operationally efficient and that relatively few changes to the standard were necessary. Major weaknesses in current management practices were identified as breaches of health and safety, poor training of forest workers and inadequate consultation with stakeholders.

Keywords: Eco-certification, Forest Certification, Forest, Forest Workers, Ecolabel, Standard

Willingness to pay for eco-labelled wood furniture: Choice-based conjoint analysis versus open-ended contingent valuation

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Journal of Forest Economics, Volume 13, Issue 1, 15 May 2007, 29-48p.

ISSN: 1104-6899

Four convenience samples comprising customers of two IKEA stores, one in England the other in Norway, were obtained for the purpose of investigating willingness to pay (WTP) for an environmental attribute through certification and eco-labelling. Two survey-based valuation methods were applied in each store: conjoint analysis (CA) and contingent valuation (CV). In the sample of English IKEA customers responding to CA questions, extra median WTP for the eco-labelled alternative was 16% of the price of the existing unlabelled alternative. In the sample responding to CV questions, median estimate of the price premium was 7.5%. In the samples of Norwegian IKEA customers, the CA median was 2%, while the CV median was 6%. Only in the English cases did the relation between CA and CV estimates turn out as expected.

Keywords: Customers Method, Comparison, Price premium, Eco-label, Wood Furniture, Ecolabelling, IEKA, Certification

Forest Certification AssessmentGuide (FCAG): A Framework for Assessing Credible Forest Certification Systems/Schemes

WWF/World Bank Global Forest Alliance
1818 H Street, NW
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July 2006, 57p.

The Guide defines what an ideal certification system would include.Although no system for forest management certification is likely to fully meet all criteria, by using the certification target framework described in this document management teams can structure and analyze information on certification systemsand schemes to reach a substantiated qualitative judgment about a given system. The Guide explains existing standards for conformity assessment, certification, accreditation, and standard setting developed by international organizations such as the International Organization for Standardization (ISO) or the International Social and Environmental Accreditation and Labelling (ISEAL) Alliance.

The Guide consists of three parts. The first part evaluates systems and schemes against basic requirements as defined in international norms and standards. In the second part, information on additional aspects of the standards' content and of procedures for standard development is provided. The focus of the third part is on the operational features of certification schemes and includes specific elements that were identified by the Global Forest Alliance as essential for credible forest management certification.

Keywords: Sustainable Forest Management,Forest Certification, International Organization for Standardization, International Social and Environmental Accreditation and Labelling Alliance, ISEAL, Global Forest Alliance, Forest Management Certification

Creating markets for eco-labelling: are consumers insignificant?

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International Journal of Consumer Studies, Volume 30, Issue 5, September 2006, 477-489p.

ISSN:1470-6431

The proliferation of voluntary certification and labelling schemes for environmentally and socially responsible production is often seen as driven by companies and consumer demand. Through a careful examination of the initiation and spread of such initiatives in the fishery and forestry sectors, this paper challenges a

rational–economic perspective that sees the spread of non-state governance schemes primarily as a market-driven phenomenon. Drawing on a political consumerism perspective, the paper argues that transnational environmental group networks and their targeting of firms were key to the emergence of non-state eco-labelling schemes, and that most firms decided to support or participate in such schemes only after intensive environmental group pressure. The paper opposes the view that non-state governance challenges traditional state authority, by showing that states, through public procurement policies and support, contributed to create markets for forestry and fishery labelling in many countries. Although some states have been more sceptical of fishery labelling, largely because of the way fishery resources are managed, they have come to accept it as a helpful supplement to public rules and regulations.

Keywords: Certification, Consumer Influence, Eco-Labelling, Environmental Governance, Nongovernmental Organizations, Private Authority, Forestry, Forest

Strategies, Functions and Benefits of Forest Certification in Wood Products Marketing: Perspectives of Finnish Suppliers

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Forest Policy and Economics, Volume 9, Number 4, December 2006, 380-391p.

ISSN: 1389-9341

This study examined the strategic importance and marketing functions of forest certification in the Finnish wood products industry, as well as the benefits of certification to suppliers. A nationwide survey was conducted to examine prevailing perceptions in both chain-of-custody certified and non-certified companies. Personal interviews were conducted using a structured questionnaire from September to December 2004 with 50 Finnish companies that supply primary and value-added wood products, half of which had a chain-of-custody certificate from the Finnish Forest Certification System. The results indicate that certified companies are typically profiled as primary wood producers, mainly focused on export to the United Kingdom and Germany where there is strong demand for certified products. In certified companies, forest certification was considered important for indicating a company's sense of responsibility, for keeping market share and selling products in an existing market. Employees of certified companies perceived forest certification as a reactive measure against market pressure, while employees of non-certified companies expected that certification would help in the exploitation of new markets. Certified companies did not fully exercise their right to use certification labels, they used existing channels with a minimal cost and effort in deploying existing channels to demonstrate that their products were certified. Charging a price premium was not possible for most certified companies. Although certified companies tended to gain

improved customer retention and satisfaction, in addition to a positive public reputation, certification did not generally help them to improve their financial performance.

Keywords: Sustainable Forestry,Forest certification, Wood Products,Finnish Forest Certification System

Regulatory Credibility and Authority through Inclusiveness: Standardization Organizations in Cases of Eco-Labelling

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Organization, Volume 13, issue 3, May 1, 2006, 345-367p.

ISSN: 13505084 | 14617323

This paper deals with the challenging task of permanently organizing projects that include a broad range of actors: enterprises, social movement organizations and state actors. It focuses on a special type of standardization activity, namely eco-labelling, and is based on case studies of two Swedish projects/organizations: labelling of organic food and sustainable forestry. In this paper, I theorize about the concept of inclusiveness, which is seen as being instrumental for the creation of regulatory credibility and authority and argue that different types of members/participants have different types of power resources, which the standardization organization (SO) seeks to mobilize and control. The combination of these individual power resources brings action capacity and symbolic resources to the SO, including an image of independence. Moreover, the SO provides an organizational setting that, inter alias, helps interdependent actors to maintain a hold on each other, and forces them to engage in a dialogue and repeated interaction over time. This interaction can, in turn, result in common expectations and understandings that are essential for the operations of non-state governance. However, the case studies also indicate difficulties in organizing such complex networks. It can, above all, be difficult to prevent a power shift in favour of organizations with large power resources.

Keywords: Credibility, Eco-Labelling, Environmental Governance, Inclusiveness, Organizing, Private Authority, Standardization Organization, Sustainable Forestry, Ecolabel

Challenges Facing Certification and Eco-Labelling of Forest Products in Developing Countries

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Certification has been developed as an instrument for promoting sustainable forest management. Although the initial focus of certification was on tropical forests, it rapidly shifted to encompass all forest types. Ten years after the first certification schemes were developed, most (91.8%) of the 271 million hectares of forests that have been certified are located in Europe and North America. Only 13% of certified forests are located in developing countries and only 5 percent of the certified forests are located in the tropics. Among the reasons for this disparity are: weak market demand for certified products in global markets, wide gaps between existing management standards and certification requirements, weak implementation of national forest legislation, policies and programs in developing countries, insufficient capacity to implement sustainable forest management at the forest management unit level and to develop standards and delivery mechanisms, and the high direct and indirect costs of obtaining certification in developing countries. Despite these challenges and constraints, many developing countries remain interested in pursuing certification. Several promising developments have recently emerged that may give further encouragement to developing countries' efforts, including supportive codes of forestry practice, stepwise approaches to certification and increasing interest in forest certification and certified products in the Asia-Pacific region.

Keywords: Forest Certification, Ecolabel, Developing Countries, Sustainable Forest Management, Timber, Certified Forest Products

Certification of sustainable forest management practices: A global perspective on why countries certify

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Forest Policy and Economics, Volume 7, Issue 6, November 2005, 857-867p.

ISSN: 1389-9341

In this paper, authors examined national conditions that encourage the growth of a private regulatory environmental system to govern forests. Economic, institutional and social capital variables for 117 countries are used to examine factors determining forest certification under the Forest Stewardship Council and domestic competitor schemes. Although economic factors, such as forest exports and GDP, are important in explaining the likelihood that a country's forest management practices are certified, the

regression results support the idea that economic institutions and the social context under which firms and forest landowners seek certification matters. The ability of citizens to influence the political process is also significant, in particular, the likelihood that firms and forest owners will seek to certify their forest practices is significantly reduced if women have little or no effective voice in civil society.

Keywords: Sustainable Forestry and Certification, Institutions, Social Capital, Gender, Certification, Forest Management, Ecolabelling, Forest Certification

The Effectiveness of Non-State Governance Schemes: A Comparative Study of Forest Certification in Norway and Sweden

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International Environmental Agreements: Politics, Law and Economics, Volume 5, Issue 2, June 2005, 125–149p.

ISSN: 1567-9764 | 1573-1553

During the last decade, we have seen the emergence, under the auspices of non-state authorities, of market-driven governance schemes for certification of forest holdings and eco-labelling of wood products. Do these schemes affect actual management practices and environmental protection in forestry? This article examines the effectiveness of forest certification in Norway and Sweden – two ecologically and politically similar countries, but with different certification schemes. It is found that certification processes in both countries have resulted in high participation in certification schemes, high market penetration by certified forest organisations, and reduced conflict prevalence over forestry practices. Although forest certification seems to have modified on-the-ground practices in ways that lead to less environmental deterioration of forests, authors still know too little about forest certification's environmental impact and efficacy as a problem-solving instrument. More research is therefore urged in these areas.

Keywords: Eco-Labelling, Effectiveness, Environmental Governance, Forest Certification, Forestry, Norway, Private Authority, Sweden, Voluntary Standards, Ecolabel, Forest

Explaining different approaches to voluntary standards: A study of forest certification choices in Norway and Sweden

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Journal of Environmental Policy & Planning, Volume 7, Issue 1, 2005, 43-59p.

ISSN: 1523-908X|1522-7200

This paper explores divergent approaches to forest certification in Sweden and Norway. While the NGO-supported Forest Stewardship Council (FSC) has five times the endorsement in Sweden than the industry-dominated Programme for the Endorsement of Forest Certification schemes (PEFC), virtually all commercially productive forests in Norway are certified by the PEFC-endorsed Living Forests scheme. The PEFC scheme leaves forest companies with less stringent sustainable forest management standards than the FSC, and greater leeway to apply those standards. Three explanations for the divergent approaches to forest certification are explored: public policy and government support, advocacy-group and market pressures, and industry structure. It is found that although the government in both countries facilitated and legitimized certification processes, environmental group activism and supply chain pressure were more important for certification initiatives. A group of large Swedish forest companies responded to market and advocacy group pressures by choosing the widely recognized FSC scheme. Non-industrial forest owners in both Norway and Sweden rejected this scheme due to narrower market and public exposure and their belief that environmental, social and forest company interests dominate the FSC decision-making process. While showing that states influence non-state governance projects, these findings challenge traditional conceptions of political spaces constituted by sovereignty.

Keywords: Eco-Labelling, Environmental Policy, Forest Certification, Non-State Governance, Norway, Sweden, Voluntary Standards, Ecolabel, Certification, Forest

Forest Certification: Toward Common Standards?

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2. School of Renewable Natural Resource.s, Louisiana State University

Foreign Investment Advisory Service of the World Bank Group, Resources for the Future, Discussion Paper 05-10, April 2005, 31p.

The forestry industry provides a good illustration of the active roles that industry associations, environmental nongovernmental organizations (NGOs), national governments, and international organizations can play in developing and promoting codes of conduct that are formally sanctioned and certified. It also reflects some of the challenges of disseminating codes of conduct in developing countries and ensuring market benefits from certification. We describe the emergence of forest certification standards, outline current certification schemes, and discuss the role of major corporations in creating demand for certified products. We also discuss the limited success of certification and some of the obstacles to its adoption in developing countries. The current diversity of forest certification programs and ecolabeling schemes has created a costly, less-than-transparent system that has been largely ineffective in terms of the initial goals of reducing tropical deforestation and illegal

logging. Some steps have been taken toward harmonization of different certification criteria as well as endorsement and mutual recognition among existing forest certification programs. However, it is unlikely that standardization alone can overcome other, more serious barriers to certification in developing countries.

Keywords: Forest Certification, Codes of Conduct, Forest Stewardship Council, PEFC,Sustainable Forestry Initiative, Sustainable Forest Management

Chain of custody and eco-labelling of forest products: A Enhancing China's green procurement of legal forest products review of the requirements of the major forest certification schemes

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The International Forestry Review, Volume 7, Number 4, December 2005, 342-347p.

ISSN:1465-5489|2053-7778

A chain of custody (CoC) certification system tracks material arising in certified forests to the market place. It often covers the entire value chain from the forest, through manufacturing to the consumer, and it ensures that only certified products are able to be identified with an eco-label in the market place. CoC also ensures that material from controversial sources is not used in eco-labelled products. Conceptually, there are three principal CoC accounting options: segregated wood flow, which physically segregates material originating in certified forests from uncertified material, percentage mass of total wood flow, which transfers a percentage mass balance from certified and uncertified inputs to outputs, and minimum threshold percentage of total wood flow, which permits certification of a total batch of products if the amount of certified material in the input batch exceeds a set minimum average threshold.

Keywords: Ecolabeling, Forest Certification, Sustainable Forest Management, Recyclable Materials, Segregation, Timber, Commercial Forests, Recycling, Forest Management, Ecolabel, Chain of Custody,

2004

Consumers' Willingness to Pay for Eco-Certified Wood Products

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Journal of Agricultural and Applied Economics, Volume 36, Issue 3, December 2004, 617-626p.

ISSN: 1074-0708|2056-7405

In this study, authors used Kriström's simple spike model to assess the factors influencing consumers' willingness to pay a premium for a variety of certified wood products. A survey of over 1,600 Pennsylvania and Tennessee residents found that approximately 35% were willing to pay some positive “premium” for environmentally certified wood products. For three types of wood products (a $28.80 shelf, a $199 chair, and a $799 table), authors find the estimated market premiums to be $3.74, $15.94, and $45.07, respectively.

Keywords: Eco-Certification, Eco-Labeling, Price Premium, Spike, Models, Q5, Q23, Certification, Ecolabelling, Certified Wood, Wood

2003

Social and Political Dimensions of Forest Certification

Errol Meidinger, Chris Elliott, Gerhard Oesten and Remagen-Oberwinter, Editors

SUNY Buffalo Legal Studies Research Paper No. 2015-007, 2003, 362p.

ISBN: 3-935638-23-X

Forest certification programs seek to assure the buyers of wood products that the wood they are getting was produced in an environmentally and socially acceptable manner. Certification programs are growing rapidly around the world, and their rise to prominence poses many important questions. To date, most public and academic discussion of certification has focused on forest management and marketing issues, with an emphasis on technical questions. While those are important, it is becoming increasingly clear that the future of certification programs will depend on their social and political implications. This book is one of the first to examine those implications in a sustained, broad based, and academically rigorous way. It links detailed expertise on forest certification with broader theoretical and political perspectives on policy making, social justice, law, and governance.

Keywords: Community Forest Management, Ecolabeling, Forest Certification, Forest

Governance, Forest Politics, Global Governance, Labor Standards, New Governance, Non-State Governance, Private Regulation, Public Participation, Sustainability, Sustainable Management, Tropical Forests

The Fundamentals of Forest Certification

Errol Meidinger[1], Chris Elliott[2] and Gerhard Oesten[3]
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2. Director, Forests for Life, WWF International, Gland, Switzerland
3. Professor of Forestry Economics Albert-Ludwigs-University of Freiburg Freiburg, Germany

Chapter in Social and Political Dimensions of Forest Certification, 2003, 25p.

To date, forest certification has been discussedprimarily in forestry circles. This book is part of an effort to extend that discussion into thewider community of people interested in environmental policy, sustainable development,transnational institutions, social justice, and new modes of governance. To that end, thischapter offers a concise overview of forest certification programs as they exist today.Subsequent chapters explore their many social and political implications. Authors invite readerswho are not familiar with forest certification programs either to read this chapter at theoutset or to refer back to it when additional information on certification would be helpful to understanding other chapters.

Keywords: Community Forest Management, Ecolabeling, Forest Certification, Environment Policy, Public Participation, Sustainability, Sustainable Management, Tropical Forests

Forest certification--An instrument to promote sustainable forest management?

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Journal of Environment Management, Volume 67, Number 1, January 2003, 87-98p.

ISSN: 0301-4797 | 1095-8630

Forest certification was introduced in the early 1990s to address concerns of deforestation and forest degradation and to promote the maintenance of biological diversity, especially in the tropics. Initially pushed by environmental groups, it quickly evolved as a potential instrument to promote sustainable forest management (SFM). To date about 124 million ha or 3.2% of the world's forests have been certified by the different certification schemes created over the last decade. Forest certification shares the aim of promoting SFM with another tool, namely criteria and indicators (C&I) for SFM. C&I sets are mainly developed for the national level to describe and monitor

status and trends in forests and forest management. They also provide an essential reference basis for forest certification standards, which set performance targets to be applied on a defined area. Progress in developing these two different tools has been significant. After 10 years of implementation, it is evident that the original intention to save tropical biodiversity through certification has largely failed to date. Most of certified areas are in the temperate and boreal zone, with Europe as the most important region. Only around ten per cent is located in tropical countries. The standards used for issuing certificates upon compliance are diverse, both between certification schemes and within one and the same scheme when applied in different regions. However, they are at least equal to legal requirements and often include elements that set actually higher standards. While the quality of actual audits of the standards is of varying quality, there are indications that independent audits are an incentive for improving forest management. As a voluntary market-based tool, forest certification is depending on the ability to cover the costs incurred and thus on often-elusive green consumer sentiment. Regardless of many difficulties, forest certification has been very successful in raising awareness and disseminating knowledge on a holistic SFM concept,embracing economic, environmental and social issues, worldwide. It also provides a tool for a range of other applications than assessment of sustainability, such as e.g. verifying carbon sinks

Keywords: Forest Certification, Forest Management, Principles, Environmental benefits**,** Forest Management, Timber Certification, Sustainability, Sustainable Forest Management

Current Perspectives of Sustainable Forest Management and Timber Certification

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XII World Forestry Congress, Quebec City, Canada, 2003.

One of the major challenges in forest management is the sustainability of the resource itself, while the challenge for the conservation of biological diversity is not to `halt deforestation' but to secure a minimum set of strategically located primary forests in representative areas having high diversity and endemism. In addition to this, mechanisms and methodologies for valuation of the many diverse goods and services that the forest provides, especially those that are not readily traded in the marketplace, need to be further developed.During the last two decades timber certification has not had a significant impact on the loss of tropical forests. In addition, timber certification is expensive and consumers in Europe and the United States of America are not willing to pay more for certified products.

Although timber certification is expected to promote economic and social equity, many small farmers and producers often find it too costly and are unable to access the

capital, information and markets that certification is meant to offer. Furthermore, government involvement in timber certification is necessary as many of the timber certification schemes are yet to be self-financing and forest lands in many developing countries are owned by governments.Timber certification's efficiency in promoting sustainable forest management is still subject to considerable debate at international level. At best, it has created greater awareness among forest managers and the many stakeholders on the need to balance protection and conservation of forest resources with economic uses.

There is also a need for a set of internationally agreed criteria and indicators for assessing sustainable forest management practices and timber certification, or at the very least, an international framework for their mutual recognition. Further research in the use of criteria and indicators for assessing sustainable forest management and in certification is also necessary, including the link between these and actual improvements in sustainable forest management.

Keywords: Forest Certification, Forest Management, Principles, Environmental benefits**,** Forest Management, Timber Certification, Sustainability

Forest certification—an instrument to promote sustainable forest management?

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Journal of Environmental Management, Volume 67, Issue 1, 1 January 2003, 87-98p.

ISSN: 0301-4797

Forest certification was introduced in the early 1990s to address concerns of deforestation and forest degradation and to promote the maintenance of biological diversity, especially in the tropics. Initially pushed by environmental groups, it quickly evolved as a potential instrument to promote sustainable forest management (SFM). To date about 124 million ha or 3.2% of the world's forests have been certified by the different certification schemes created over the last decade. Forest certification shares the aim of promoting SFM with another tool, namely criteria and indicators (C&I) for SFM. C&I sets are mainly developed for the national level to describe and monitor status and trends in forests and forest management. They also provide an essential reference basis for forest certification standards, which set performance targets to be applied on a defined area. Progress in developing these two different tools has been significant.

After 10 years of implementation, it is evident that the original intention to save tropical biodiversity through certification has largely failed to date. Most of certified areas are in the temperate and boreal zone, with Europe as the most important region. Only around ten per cent is located in tropical countries. The standards used for issuing

certificates upon compliance are diverse, both between certification schemes and within one and the same scheme when applied in different regions. However, they are at least equal to legal requirements and often include elements that set actually higher standards.

While the quality of actual audits of the standards is of varying quality, there are indications that independent audits are an incentive for improving forest management. As a voluntary market-based tool, forest certification is depending on the ability to cover the costs incurred and thus on often-elusive green consumer sentiment. Regardless of many difficulties, forest certification has been very successful in raising awareness and disseminating knowledge on a holistic SFM concept, embracing economic, environmental and social issues, worldwide. It also provides a tool for a range of other applications than assessment of sustainability, such as e.g. verifying carbon sinks.

Keywords: Biodiversity Conservation, Criteria and Indicators, Impact Assessment, Forest Certification, Ecolabel, Sustainable Forest Management, Forest

Does forest certification conserve biodiversity?

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Oryx, Volume 37, Issue 2, April 2003, 153-165p.

ISSN: 0030-6053|1365-3008

Forest certification provides a means by which producers who meet stringent sustainable forestry standards can identify their products in the marketplace, allowing them to potentially receive greater market access and higher prices for their products. An examination of the ways in which certification may contribute to biodiversity conservation leads to the following conclusions: 1) the process of Forest Stewardship Council (FSC)-certification generates improvements to management with respect to the value of managed forests for biodiversity. 2) Current incentives are not sufficient to attract the majority of producers to seek certification, particularly in tropical countries where the costs of improving management to meet FSC guidelines are significantly greater than any market benefits they may receive, available incentives are even less capable of convincing forest owners to retain forest cover and produce certified timber on a sustainable basis, rather than deforesting their lands for timber and agriculture. 3) At present, current volumes of certified forest products are insufficient to reduce demand to log high conservation value forests. If FSC certification is to make greater inroads, particularly in tropical countries, significant investments will be needed both to increase the benefits and reduce the costs of certification. Conservation investors

will need to carefully consider the biodiversity benefits that will be generated from such investments, versus the benefits generated from investing in more traditional approaches to biodiversity conservation.

Keywords: Biodiversity, Certification, Tropical Forests, Forestry, Forest Stewardship Council, FSC, Ecolabel

Forest certification (eco-labeling) programs and their policymaking authority: explaining divergence among North American and European case studies

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Forest Policy and Economics, Volume 5, 2003, 225–247p.

ISSN: 1389-9341

In recent years, transnational and domestic non-governmental organizations have created private standard setting bodies whose purpose is to recognize officially companies and landowners practicing 'sustainable forest management'. Eschewing traditional state processes and state authority, these certification programs have turned to the market to create incentives and force compliance to their rules. This paper compares the emergence of this non-state market driven (NSMD) phenomenon in the forest sector in eight regions in North Am40erica and Europe. Authors specifically seek to understand the role of forest companies and landowners in granting competing forest certification programs 'legitimacy' to create the rules. Authors identify distinct legitimation dynamics in each of our cases, and then develop seven hypotheses to explain differences in support for forest certification.

Keywords: Forest certification, Market instruments, Voluntary initiatives, Privatization of governance, Eco-labelling, Forest sustainability, Sustainable forest management, Environmental governance, United States, Canada, Europe, Forest sector, Market Access, Competitiveness

The institutional design of forest certification standards initiatives and its influence on the role of science: the case of forest genetic resources

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Journal of Environmental Management, Volume 69, Issue 1, September 2003, 47-62p.

ISSN: 0301-4797

In the 1990s a wide array of non-governmental certification initiatives emerged as a way to promote the sustainable management of resources in sectors such as fisheries and forestry. In this paper, authors examine two related questions about these initiatives: how does the institutional design of certification initiatives affect the way science is used in the development of certification standards and in whose interest is science employed? Using the empirical case of forest certification and the specific standards various initiatives have created to address the management of forest genetic resources, they show how structural aspects of decision-making processes affects the standards adopted and the rationalization for their appropriateness. Two basic models of decision-making-stakeholder participation and technical expertise-are discussed in relation to three certification initiatives active in North America-the Canadian Standards Association, the Sustainable Forestry Initiative and the Forest Stewardship Council. By examining the standards these initiatives set for the management of forest genetic resources, they illustrate how two dimensions of science-uncertainty and the logic of cause and effect-are used to rationalize cautious and rigid versus flexible and discretionary standards for the management of forest genetic resources. The findings indicate that the design or structure of certification decision-making processes, and their embedded balance of authority, mediate the form of standards initiatives will justify on the basis of science.

Keywords: Genetic Resources, Forest Decision-Making, Environmental Policy, Forest Certification, Science and Policy, Institutional Design, Certification, Forest

Consumer reactions to environmental labels for forest products: A preliminary look

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Forest Products Journal, Volume 52, Issue 1, 2002, 44-50p.

ISSN: 0015-7473

Currently, there are hundreds of environmentally certified forest product companies in the United States selling a diverse range of products, from lumber to paper towels. Often the forest product suppliers market their products under an eco-label, essentially, this is an environmental seal-of-approval given by a certifying organization. The widespread use of eco-labels suggests that they are perceived as an effective method of altering consumer behavior. However, empirical comparisons of the effectiveness of alternative eco-labeling programs are lacking. Here we provide a preliminary exploration into the types of environmental label information that consumers find useful, the label formats consumers prefer, and the reasons consumer label preferences may vary between products. Based on six focus group discussions held in three different U.S. locations, respondents indicated that environmental labeling of wood products could influence their purchasing decision, particularly on items such as paper for which the y perceived a connection between high usage and environmental impact. A central issue seems to be the credibility of the certifying entity, respondents appear to place a higher level of credibility on labels that featured endorsements from relatively familiar entities. They also seem to prefer information presented in a standardized format so that they can compare the environmental features between products. In general, respondents also emphasized the need for education efforts to both publicize and inform consumers about how to use and interpret the eco-labels.

Keywords: Ecolabeling, Forest Certification, Timber, Environmental Label, Forest Management, Ecolabel, Consumer

Trade and environment issues in the forest and forest products sector

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Geneva Timber and Forest Discussion Papers, United Nations, ECE/TIM/DP/19, 2000, vii, 33p.

ISSN: 1020 7228

The objective of the Discussion Papers is to make available to a wider audience work carried out, usually by national experts, in the course of ECE/FAO activities. This Discussion Paper was written as a follow-up to the special topic discussion on “Trade

and Environment Issues in the Forest and Forest Products Sector" in the course of the 57th Session of the UN/ECE Timber Committee in Geneva on 29 September 1999.Four speaker presented their views on the topic – Dr. Carol Cosgrove-Sacks, Director of theUN/ECE Trade Division, Mr. Jan-EirikSørensen, Director of the WTO Trade and EnvironmentDivision, Mr. Charles Arden-Clarke, Head of the WWF Trade and Investment Unit and Mr. Albert Fryof the World Business Council for Sustainable Development (WBCSD).This paper presents an unbiased overview of topics relevant to the trade and environment debateand the speaker's opinions and statements on them.

Keywords: Eco-Labelling, Sustainable Forestry, Ecolabel, Wood, Paper Products, Timber, WWF Trade

Novel perspectives in wood certification and forensics: dry wood as a source of DNA

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Proceedings of Biological Sciences, 269(1495), 01 May 2002, 1039-1046p.

The importance of wood for human societies can hardly be understated. If dry wood were amenable to molecular genetics investigations, this could lead to major applications in wood forensics, certification, archaeology and palaeobotany. To evaluate the potential of wood for molecular genetic investigations, we have attempted to isolate and amplify, by PCR, DNA fragments of increasing size corresponding to all three plant genomes from different regions of 10 oak logs. Stringent procedures to avoid contamination with external DNA were used in order to demonstrate the authenticity of the fragments amplified. This authenticity was further confirmed by demonstrating genetic uniformity within each log using both nuclear and chloroplast microsatellites. For most wood samples DNA was degraded, and the sequences that gave the best results were those of small size and present in high copy number (chloroplast, mitochondrial, or repeated nuclear sequences). Both storage conditions and storage duration play a role in DNA conservation. Overall, this work demonstrates that molecular markers from all three plant genomes can be used for genetic analysis on dry oak wood, but outlines some limitations and the need for further evaluation of the potential of wood for DNA analysis.

Keywords: Forest Certification, Wood, Forensics, Forest Product, Timber, Certified Wood Products

Ecolabeling and Forest Certification as New Environmental Policy Instruments: Factors which Impede and Support Diffusion

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ECPR Workshop on "The Politics of New Environmental Policy Instruments" Grenoble, April 2001, 33p.

This paper focuses on the diffusion of two different types of labels and two different diffusion models: (1) eco-labels like the German "Blue Angel" (Blauer Engel) and (2) the certification program of the Forest Stewardship Council (FSC). Authors examined the significance of different transfer institutions for policy diffusion. Our choice of cases is based on the general assumption that "governance by diffusion" can be supported by two types of transfer institutions: (1) governmental or quasi-governmental and (2) non-governmental organizations. The paper gives an overview of the global diffusion of eco-labels. This is followed by a discussion of FSC labels. Both parts include general remarks on global diffusion patterns, international and transnational transfer institutions, national variations, and several case studies. For each labeling system they selected an innovator, an early adopter, and a late adopter. And finally, they systematically compared the two labeling schemes and draw some preliminary conclusions. Paper was prepared for the ECPR Workshop on "The Politics of New Environmental Policy Instruments" Grenoble, April 2001.

Keywords: Forest Certification, Ecolabel, FSC Label, Sustainable Forest Management, Timber, Certified Forest Products

Certification and Labeling of Forest Products: Will It Lead to More Environmentally Benign Forestry in Maine?

Mario F. Teisl, Stephanie Peavey and Kelly O'Brien
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Maine Policy Review, Volume 10, Issue 1, 2001, 72-78p.

ISSN: 2643-959X

From a supply and demand point of view, the trend toward forest-products certification appears simple: some retail consumers may prefer to buy products from forests managed in an environmentally sound way while some forest owners may be willing to alter their management practices in order to sell to these consumers. However, as the authors indicate, the issue of communicating to consumers the degree of "environmental good" being purchased can be complicated and may be a factor affecting the long-term success of certification programs. The authors present the results of a recent survey that assessed the use of two types of consumer labels—eco-

seals and eco-labels. They conclude that the current practice in the forest-products industry of using eco-seals alone to market the “environmental goodness” of products may not be as effective as other types of labels that provide consumers with detailed information about the product's environmental attributes.

Keywords: Forest Certification, Ecolabel, Forestry, Forest Product, Timber, Certified Forest Products

Trade and environment issues in the forest and forest products sector

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Consumer Education and Research Centre

Consumer Education and Research Centre (CERC), set up in 1978, is a non-political, non-profit and nongovernment organisation dedicated to the education and empowerment of consumers as well as promotion and protection of consumer interests through effective uses of education, research, the media and law. CERC has three major roles-to make consumers aware of their rights, to help them protect themselves and to make providers of goods and services accountable. Its activities include complaints handling, legal advice and litigation, consumer education and awareness programmes, library and information service, publication, comparative testing of products, advocacy, investor and environment protection.

CERC-ENVIS Resource Partner

Ministry of Environment, Forest and Climate Change, Government of India has recognized Consumer Education and Research Centre (CERC) as ENVIS (Environment Information System) Centre in 2005. The focus of ENVIS is to provide environmental information to decision makers, policy planners, scientists and engineers, research workers, etc. across the country. ENVIS was conceived as a distributed information network with the subject-specific centers to carry out the mandates and to provide the relevant and timely information to all concerned.

Subject assigned to the CERC- ENVIS Centre is “Environment Literacy - Eco-labelling and Eco-friendly Products.” The Centre launched the website http://cercenvis.nic.in/ on NIC (National Informatics Centre) platform with the theme 'Eco-labelling and Eco-Friendly Products'. The website furnishes the information on national and international scenario on this subject.

It publishes theme based quarterly newsletter named “Green Insights”. It also circulates bi-monthly e-bulletin “Green Alert”. Since Social Media is very popular among youth and to attract them and sensitise them towards eco products, ENVIS Resource Partner has started a page on facebook also (https://www.facebook.com/EcoProductsEcoLabeling).

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