Submitting a non-thesis masters paper to the NCSU Digital Repository

Student First Name: __Sae________________ Last Name: ____Makino________________

Date of final exam: ___May 7, 2004_____________________________________________

Degree and track: __Master of Natural Resources (International Resources Option) ______

Paper title: ___Linking forests to markets: chain of custody certification under the Forest Stewardship Council ________________________________

Keywords (5-10 words that the library can enter as search terms in the NCSU Digital Repository):
"forest certification", "chain of custody",
____________________________________________________________

The document needs to be submitted as a PDF, using the guide below.

Submit your paper to the following person, depending on your home department:
FER: Sarah_Slover@ncsu.edu
PRTM: Anju_Singh@ncsu.edu
LAR: F_Magallanes@ncsu.edu
Soil Science: Jot_Smyth@ncsu.edu
Other: Beth_Wilson@ncsu.edu

I give permission for this document to be stored in the NCSU Repository, hosted by the libraries.

________________________________________________________  ________________________
(name)                                                                 (date)
Linking forests to markets: chain of custody certification under the Forest Stewardship Council

By

Sae Makino

Submitted to the Graduate Faculty of North Carolina State University in partial fulfillment of the requirements for the Degree of Master of Natural Resources

International Resources Technical Option

Raleigh, North Carolina

2004

Approved by advisory committee:

Erin Sills, Chair
Fred Cubbage
Susan Moore

May 7, 2004
Abstract

Acknowledgements

While pursuing my master’s degree at the Department of Forestry, North Carolina State University, I encountered various challenges because the educational system, academic requirements, and the language are different from what I was used to in Japan. Most of the time, I enjoyed confronting those challenges and achieving success, thanks to a lot of support that I was very lucky to have from many people. Without help from those people, I would not have been able to achieve this success and I would like to take this opportunity to thank some of them.

I would like to show great gratitude to Michael Siller for his continuous encouragement, patience, and sacrifices to assist my academic program. His support and collaboration always kept me moving forward and gave me a sense of being accompanied all the time. This accomplishment is as much his as it is mine.

I am also very grateful for the immense assistance from the members of my graduate committee. I was very fortunate to be supported by Dr. Erin Sills, my advisor and chair committee member. I am very thankful not only for her direction during the project, but also for her infinite encouragement, counsel, and the generous opportunity she gave in pursuing my project. I also owe a great deal to Dr. Fred Cubbage and Dr. Susan Moore for their expertise and ability to direct my project. Their professional assistance strengthened me in my pursuit of completing my project.

Lastly but by no means last in my mind, I would like to thank my family, who have always supported my dream and way of life, and looking out for my welfare incessantly. My sister, Chieko Makino, always inspires me with her brilliant mind and wonderful attitude. I would not even have been able to start the program without support from my Mother and Father, Mari and Isao Makino. They raised me to be liberal, challengeable, and positive in my aspirations. Their love is forever the source of my power to persevere in my efforts.
Contents

CHAPTER I .......................................................................................................................... 1
INTRODUCTION TO CHAIN-OF-CUSTODY CERTIFICATION ............................................. 1
1.1 Introduction .................................................................................................................. 1
1.2 CoC Certification Systems .......................................................................................... 4
  1.2.1 Forest certification ................................................................................................. 4
  1.2.2 The CoC mechanism ............................................................................................ 5
1.3 Forest certification schemes ....................................................................................... 8
  1.3.1 FSC ...................................................................................................................... 9
  1.3.2 PEFC .................................................................................................................. 12
  1.3.3 CSA .................................................................................................................... 14
  1.3.4 MTCC ................................................................................................................ 16
1.4 Overall view of this study ......................................................................................... 20

CHAPTER II ....................................................................................................................... 21
TRENDS IN PRODUCTS OF CHAIN-OF-CUSTODY CERTIFICATION HOLDERS ................. 21
2.1 Introduction ................................................................................................................. 21
2.2 Research questions ..................................................................................................... 24
2.3 Objectives .................................................................................................................... 24
2.4 Methods ....................................................................................................................... 24
2.5 Results ........................................................................................................................... 27
  2.5.1 Trends in number of companies ....................................................................... 27
  2.5.2 Trends in diversity across the industry sectors .............................................. 29
  2.5.3 Industry Sectors Distribution ........................................................................ 31
2.6 Discussion ..................................................................................................................... 34

CHAPTER III ..................................................................................................................... 37
PROFILE OF CHAIN-OF-CUSTODY CERTIFICATE HOLDERS ............................................. 37
3.1 Introduction .................................................................................................................. 37
3.2 Research Questions ..................................................................................................... 40
3.3 Objectives .................................................................................................................... 40
3.4 Methods ......................................................................................................................... 41
3.5 Results ........................................................................................................................... 42
  3.5.1 Data Availability ................................................................................................. 42
  3.5.2 Type of Companies ............................................................................................. 44
  3.5.3 Employees and Estimated Sales .................................................................... 45
  3.5.4 Incorporated Year and SICs ........................................................................... 48
3.6 Discussion ..................................................................................................................... 52
CHAPTER IV ........................................................................................................56
PERSPECTIVES OF COC CERTIFICATE HOLDERS IN THE USA AND
JAPAN ...............................................................................................................56
4.1 Introduction ..........................................................................................56
4.2 Research Questions ...........................................................................58
4.3 Objectives ..........................................................................................58
4.4 Methodology ......................................................................................59
  4.4.1 Sampling design ........................................................................59
  4.4.2 Questionnaire development ....................................................59
  4.4.3 Method ......................................................................................60
4.5 Results ...............................................................................................61
  4.5.1 Response rate ............................................................................61
  4.5.2 Non-response bias .....................................................................62
  4.5.3 Certification status .....................................................................66
  4.5.4 CFPs and marketplaces ............................................................68
  4.5.5 Decision making processes .......................................................72
  4.5.6 Expectations ..............................................................................81
  4.5.7 Perceived benefits .....................................................................89
4.6 Discussion ..........................................................................................94
  4.6.1 Certification Status ..................................................................94
  4.6.2 CFPs ..........................................................................................96
  4.6.3 Decision Making Processes ......................................................98
  4.6.4 Expectations and Perceived Benefits ....................................101
REFERENCES ..............................................................................................105
APPENDICES ...............................................................................................113
Chapter I

Introduction to Chain-of-Custody Certification

1.1 Introduction

Forest certification Chain-of-Custody (CoC) is a bottleneck in today’s Certified Forest Product (CFP) markets, resulting in the large majority of products produced from certified forests being sold without reference to forest certification (UN 2002; Rametsteiner 2003). This weakness of the forest certification system prevents both producers and consumers from receiving the benefits of forest certification, in which consumers are given the choice to purchase environmentally sound products, and producers are able to acquire marketing advantages. As a result of this underemphasis on the certification system among manufacturers and distributors, development of the market for CFPs has been generally been limited to niche products and challenges for the further success of forest certification have not been met.

The impediments to the implementation of CoC certification among the forest industry sectors are mainly a result of the following characteristics of forest products (Groves 1996; Vogt 2000):

- The fragmented wood-supply system: the nature of wood production
requires a large land area. Consequently, a diversity of ownership is typically involved, posing an obstacle to obtaining large volumes of raw wood material from any one forest. In other words, producers have to obtain their wood-supply from diverse forests:

- Worldwide supply chain: forest products are one of the most widely traded products in the world, making the CoC of forest products complicated to establish and difficult to track;

- Production economics: CFPs require an additional handling system, separating them from non-CFPs or using an inventory method, which requires modification from existing operating systems, additional costs, and extra operational processes; and

- Product nature: highly processed forest products are manufactured through very complex processing chains, involving many producers and traders. Additionally, many forest products are comprised of multiple species of wood and/or multiple components.

These characteristics of forest products make the promotion of CoC certification among forest industry manufacturers and distributors more challenging unless there are enough incentives and benefits flowing from forest certification. Potential benefits from forest certification can include:

- Price premiums: buyers’ willingness to pay for environmentally friendly products may yield price premiums:
• Market access: CFPs may provide opportunities to enter new markets or to maintain current market share; and

• Company image: certification may improve companies’ images and improve their credibility in the eyes of the public.

(Rickenbach 2000)

These benefits will be generated only if a majority of consumers recognize and appreciate the benefits of forest certification, resulting in a large and continuously increasing demand for CFPs. Currently, however, the market for CFPs is very limited in terms of both overall volume and geographic scope. Although business-to-business markets have shown increasing interest in CFPs – thanks in large part to environmental NGOs that create a demand for CFPs by creating buyers’ groups – demand for CFPs by private end-users is still insignificant (Rametsteiner 1999; Smouts 2002). While this lack of end-user awareness and interest is one of the fundamental obstacles to the growth of the market for CFPs worldwide, there is a movement by certain major forest products retailers to create consumer demand for CFPs. This retailer-driven demand can be seen most clearly in Europe and North America (Rametsteiner 2003).

Forest certification, originally initiated in the early 1990’s as a primarily European response to consumer-driven concerns regarding tropical
deforestation, is now becoming an important instrument for communication on sustainable forest management throughout the forest and trade related sectors. In short, the role of the supply-side in increasing demand for CFPs and overcoming environmental shortcomings of forest products CoC is becoming essential, and will be a critical factor to the success of forest certification in the future.

1.2 CoC Certification Systems

1.2.1 Forest certification

Forest management certification can be performed in three different forms, depending on the relationship between the auditor and the party being audited. First-party certification is an internal assessment by an organization of its own systems and practices. Second-party certification is an assessment conducted by an affiliated group, such as customers or an outside trade association. Lastly, third-party certification is an assessment by a neutral third-party based on a set of accepted principles and standards. Another important consideration for the forest certification system is the difference between systems-based certification and performance-based schemes.

Systems-based certification requires an organization to have
management systems designed to recognize the company's impact on the environment, to monitor that impact, and improve performance. Performance-based certification requires the audited party and the land on which timber is grown to meet a specific set of previously adopted performance requirements (Hansen 1998; Vogt 2000).

Most comprehensive forest certification programs consist of two components: the first is forest management certification, an evaluation of forest operation systems based on previously-established criteria and standards. The other is CoC certification, a system to track the origin of raw materials. While forest management certification aims to achieve sustainable forest management, the main objective of CoC certification is to verify for consumers that the products are coming from certified forests. Therefore, CoC certification provides the definitive link between the producer and the consumer, making the forest certification system more comprehensive and effective.

1.2.2 The CoC mechanism

CoC is the process of tracing materials through the supply chain in order to know where the material in a particular product came from (Dykstra 2002). CoC involves tracking and documenting a product through all phases of ownership, processing and transportation between the certified forest and
the final consumer. Consequently, CoC can contain a series of “processing stages” or production phases and “between processing stages” or transportation phases. Although the supply chain for forest products can often be very long and complex, e.g., from trees in a forest to a cabinet in a kitchen, each stage can be addressed separately in order to achieve a comprehensive CoC information system.

There are three ways for firms to approach CoC certification, depending on the type of products and operation being certified: the physical separation system, the percentage based system, and the input/output model. The physical separation system requires each batch of CFPs to be physically separated from non-CFPs at every stage in the chain. The percentage based system uses inventory control and the accounting of wood flow to maintain a minimum percentage of certified material by volume or weight. The input/output model is based on the premise that when a known percentage of certified raw material enters into processing, an equal percentage of the finish product will be CFPs as well (ITTO 2002; Anderson 2004).

All CoCs consist of the same fundamental elements: 1) information on quantities; 2) management of critical control points; and 3) personnel training. However, implementation technologies may vary in practice depending on local circumstances and the point in the processing chain
(Dykstra 2002). These elements can be described as follows:

1) Information on quantities: the collection and recording of information on the quantity (volume, weight, piece, or value) of material distributed or manufactured is a very important aspect of CoC. In the processing stages, data on the quantity of raw material purchased and the quantity of product sold is maintained. In the between processing stages, data on the quantity sold by the preceding processor and the quantity purchased by the subsequent processor in the chain is required.

2) Critical control points: critical control points are points in the processing chain where unauthorized materials can potentially become part of a CFP, resulting in the diminished credibility of CoC among consumers. To minimize the risk of critical control points, the development of three systems is required: product identification, segmentation, and documentation and records. Identification is accomplished by applying one of many labeling technologies, such as paint and chisel labels, radio-frequently identification, barcode information, etc.; segmentation is accomplished by handling and processing CFPs separately from non-CFPs; and documentation and records are maintained by keeping records of all inputs, processing and outputs of certified products.

3) Personnel training: the training, control and management of
personnel who implement the CoC at each stage of the chain is a critical factor for the success of the CoC system, in order to prevent accidentally breaking the CoC, and intentional fraud in the CoC.

1.3 Forest certification schemes

Increasing worldwide interest in forest certification has inspired a proliferation of certification schemes. Over 50 certification programs are currently active worldwide (IUCN 2003). However, the world’s share of certified forests are dominated by a few major certification schemes: the Programme for the Endorsement of Forest Certification Schemes – formerly known as Pan-European Forest Certification (covering 38% of all certified forests), the Forest Stewardship Council (23%), the Sustainable Forest Initiative (17%), the American Tree Farm System (10%), the Canadian Standards Association (8%), and others (4%) (Atyi 2002). Although most certification programs are global schemes or national initiatives in developed countries, several tropical timber-producing countries have been actively developing their own national certification schemes. The most advanced of these programs include the Malaysian Timber Certification Council, The Lembaga Ekolabeling Institute (Indonesian Eco-label Institute), and Programa de Certificação de Florestas (The Brazilian Forest Certification System) (ITTO 2002).

Of the above certification schemes, the Forest Stewardship Council
(FSC), the Pan-European Forest Certification (PEFC), the Canadian Standards Association (CSA), and the Malaysian Timber Certification Council (MTCC) have CoC certification and require it in order for a product to be labeled. However, CoC requirements and implementation mechanisms are different among these forest certification schemes (Brack 2002). Although the Sustainable Forest Initiative (SFI) developed an ecolabel in 2002, its approach to CoC is different from the other forest certification schemes. Whereas the other schemes require a formal and physical process in order to issue a CoC certificate, SFI addresses CoC certification through third-party audits of a firm’s procurement system, in which a verifiable monitoring system evaluates the results of reforestation promotion and use of Best Management Practices within wood supply systems. However, there is no control requirement for the CoC mechanism in order to use the SFI logo on products (Anderson 2004).

1.3.1 FSC

FSC is an independent, not-for-profit, non-governmental organization founded in 1993 to support environmentally appropriate, socially beneficial, and economically viable management of the world’s forests. Three types of certification are available from the FSC: forest management certificates, CoC certificates, and joint forest management chain-of-custody certificates. Inspection and verification of all three types of certification are conducted by FSC-accredited and endorsed certification bodies. FSC developed forest
management standards based on ten Principles and Criteria for responsible forest management, and CoC standards for manufacturers and processors of forest products. FSC has newly developed a CoC Standard for Companies Supplying and Manufacturing FSC-certified Products, combining previous standards for chip and fiber products, sawed wood products, and assembled products. The new standard employs a physical separation system and also introduced a minimum percentage system. This Standard will be effective by the end of 2004. The standard requires the following aspects (FSC 2004):

1) Companies shall designate a responsible person:

2) Scope of CoC system – companies shall: maintain an FSC product group line of all product groups in the company’s FSC CoC control system; categorize each product group as FSC-pure, FSC-mixed, or FSC-recycled; and have a CoC control system that is sufficient to ensure that all products meet CoC requirements;

3) Companies shall have written procedures and/or work instruction to ensure implementation;

4) Companies shall maintain records and reports of products for at least five years;

5) Companies shall specify the training requirements and provide training to all staff;

6) Input specification – companies shall: specify all input material as FSC-pure wood/fiber, FSC-mixed wood/fiber, post-consumer
reclaimed wood, or controlled wood; require written specification from the wood suppliers and for the purchase of all certified and post-consumer reclaimed material; and control all non-certified material and other reclaimed wood;

7) Companies generating reclaimed material on-site shall allocate the wood/fiber to FSC pure, FSC-mixed, post-consumer reclaimed, controlled, or uncontrolled wood/fiber

8) Companies collecting or trading in post-consumer reclaimed material shall meet all applicable requirements;

9) Companies shall check all wood/fiber to be identifiable on arrival and store FSC-pure wood/fiber separately or identifiably if companies wish to retain its status as FSC-pure;

10) Production control and records – companies shall record the inputs of certified material on a monthly basis and identify a number for all product groups;

11) Companies shall comply within the FSC Trademark Policy Manual to be eligible for on-product FSC trademark use;

12) Minimum requirements for FSC-labeling – companies shall comply with minimum requirements for labeling: the FSC-pure label requires 100% certified material; the FSC-mixed label requires, in addition to 10% annual average FSC credit accounting, that 70% of the total wood/fiber is at least certified material or is when combined
with the post-consumer reclaimed wood/fiber and certified material; and the FSC-recycled label requires that at least 70% of the total wood/fiber be post-consumer reclaimed wood;

13) Companies shall calculate the percentage according to FSC calculation requirements and have written procedures and/or work instructions;

14) FSC credit account – companies shall: identify the inputs and the conversion factor for each component; record the FSC credit entered for each component; calculate monthly the FSC credit based on the information; and deduct the FSC credit for the amount of products sold and/or any expired credit after 12 months;

15) Companies shall receive approval of on-product label from its FSC-accredited certification body and may make claims such as “well-managed” or “responsibly managed” but may not refer to “the sustainability” of the production process;

16) Companies shall issue sales invoices including required information; and

17) Transport documentation shall be issued if the certified products are transported separately from the sales invoice.

1.3.2 PEFC

The PEFC Council is an independent, not-for profit, non-governmental organization, founded in 1999 to contribute to the environmentally
appropriate, socially beneficial and economically viable management of forests for present and future generations. PEFC provides forest management certification and CoC certification schemes, which are carried out by an independent accredited certification body. PEFC has been revising the International CoC Standard, which will become effective at the end of 2004. The standard specifies requirements for CoC certification as follows (PEFC 2004):

1) Minimum management system requirements – companies shall:
   define and document their commitment to CoC certification; identify responsible personnel and establish their responsibilities and authority; plan procurement of certified raw materials; document all procedures; establish records on certified products and maintain them for a minimum period of five years; train and educate all staff; provide the technical facilities for effective CoC implementation; and perform inspection to ensure implementation;

2) Requirements for the CoC process (physical separation method) – companies shall: identify the origin of certified raw material with associated documents; require certificate documentation from all suppliers of wood; ensure the certified raw material is separated or clearly identifiable during the whole process; and provide the customer with certificate documentation at the point of sale;

3) Requirements for the CoC process (percentage based method) –
companies shall: identify the production batch; identify the origin of certified raw material with associated documents; require certificate documentation from all suppliers of wood; calculate the certified percentage based on either the average percentage method or volume credit method; and provide the customer with certificate documentation at the point of sale.

1.3.3 CSA

The CSA forest certification scheme is a program of CSA international, an independent, not-for-profit organization. In 1996, the CSA established Canada's National Standard for Sustainable Forest Management for their forest certification. Once a program participant has been certified under forest management certification, it can also choose to become a CoC certificate-holder through the CSA Forest Products Marking Program. The CSA has developed CSA PLUS 1163, which outlines the minimum requirements for CoC. To be certified under CSA CoC certification, an organization first has to implement the CoC requirements outlined in CSA PLUS 1163. Secondly, an independent third party audits the organization's CoC, and then it can become licensed to apply the CSA SFM Mark to certified forest products (CSA). Requirements for CSA CoC are described in CSA PLUS 1163 as follows (CSA 2001):

1) Management of organizations shall be committed to CoC certification;
2) Document control system – organizations shall identify the responsible personnel and specify activities, process controls, information and management systems, and requirements for controlling these;

3) Organizations shall have a system for verifying the origin of certified material;

4) The origin of certified material shall be verifiable during transporting, handing and processing;

5) Optional approaches – three approaches exist to implementing a CoC: (a) an input/output system for solid wood; (b) a minimum average percentage system for composite products; and (c) physical separation; inventory control and accounting of wood flows are required for the input/output and minimum average percentage systems; physical separation can be substituted with marking of certified material;

6) Organizations shall conduct final inspection of certified products at the end of CoC;

7) Organizations shall establish and maintain procedures for CoC to keep records for a minimum of five years;

8) A program of periodic internal checking shall be established and implemented;

9) Organizations shall establish an environmental management system:
10) Self-declared product claims shall be accurate and verifiable; and
11) Organizations shall keep a record of all complaints and take appropriate action, which shall be documented.

1.3.4 MTCC

The MTCC is an independent not-for-profit organization established in 1998 to provide assurance to buyers of Malaysian timber products that the products have been obtained from sustainably managed forests. The Malaysian Criteria, Indicators, Activities and Standards of Performance, published in 1999, were developed for forest management certification based on the 1998 ITTO Criteria and Indicators for Sustainable Management of Natural Tropical Forests. MTCC began operation in 2001, providing forest management certification and CoC certification (MTCC). The requirements for CoC certification specified in Requirements and Assessment Procedures for CoC Certification are as follows (MTCC 2000):

1) Companies shall appoint a management representative;
2) Companies shall provide training to all staff and create a written instructions to guide staff on CoC;
3) Companies shall verify the suppliers’ certification documents;
4) Companies shall establish and maintain written procedures and work instructions for identifying product flows;
5) For the physical separation system, companies shall store certified material separately from non-certified material and implement visual
For the minimum average percentage system, companies shall: conduct
an inventory control and accounting of wood flows; calculate the
percentage of certified material according to the required method;
define the batch period (less than 60 days); and adhere to minimum
percentages for certified material at 70% for solid wood products, 70%
for assembled products made of solid wood parts, 30% for chip and
fiber products, and the representative thresholds for the components
for assembled products made of both solid and chip and fiber parts:

Certified products shall be labeled in accordance with the requirements
in MTCC Logo Guide for Certificate Holders:

Companies shall provide all related documents at sales; and

Companies shall establish and maintain all records for a minimum
period of five years, including purchase, stock, production, and sales
and marketing records.
<table>
<thead>
<tr>
<th>Feature</th>
<th>FSC</th>
<th>PEFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>• Third-party Performance-based</td>
<td>• Third-party Performance-based</td>
</tr>
<tr>
<td># of CoC holders</td>
<td>• 3529 (2004, March)</td>
<td>• 1419 (2004, March)</td>
</tr>
<tr>
<td>CoC commence year</td>
<td>• 1993</td>
<td>• 2000</td>
</tr>
<tr>
<td>Geographical coverage</td>
<td>• International</td>
<td>• International (concentrated in Europe)</td>
</tr>
<tr>
<td>Participants</td>
<td>• Any companies, organizations, etc</td>
<td>• Any companies, organizations, etc</td>
</tr>
<tr>
<td>Product Categories</td>
<td>• FSC-pure (100% certified material)</td>
<td>• Wood based products (100% certified wood)</td>
</tr>
<tr>
<td></td>
<td>• FSC-mixed (minimum 70% certified or 70% certified and recycled)</td>
<td>• Wood based products (minimum 70%)</td>
</tr>
<tr>
<td></td>
<td>• FSC-recycled (minimum 70% recycled)</td>
<td></td>
</tr>
<tr>
<td>Wood Source Verification</td>
<td>• Certified wood/fiber</td>
<td>• Certified material</td>
</tr>
<tr>
<td></td>
<td>• Post-consumer reclaimed wood</td>
<td>• Non-certified material</td>
</tr>
<tr>
<td></td>
<td>• Controlled wood</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Others (uncontrolled wood)</td>
<td></td>
</tr>
<tr>
<td>Non-certified material</td>
<td>• Controlled wood (verified origin) can be integrated into certified material</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Uncontrolled wood (not identifiable) be separated from certified wood</td>
<td></td>
</tr>
<tr>
<td>Physical Separation</td>
<td>• For FSC-pure</td>
<td>• For wood based products (100%)</td>
</tr>
<tr>
<td></td>
<td>• Physical separation method</td>
<td>• Physical separation method</td>
</tr>
<tr>
<td>Percentage System</td>
<td>• FSC-mixed and FSC-recycled</td>
<td>• Wood based products (70%)</td>
</tr>
<tr>
<td></td>
<td>• Minimum average percentage method</td>
<td>• Minimum average percentage method</td>
</tr>
<tr>
<td>Input/output Models</td>
<td>• FSC-pure, FSC-mixed, FSC-recycled</td>
<td>• Wood based products (100% and 70%)</td>
</tr>
<tr>
<td></td>
<td>• Credit accounting method</td>
<td>• Credit accounting method</td>
</tr>
<tr>
<td>Planning</td>
<td></td>
<td>• Procurement planning for certified supply material</td>
</tr>
<tr>
<td>Human resources</td>
<td>• Training</td>
<td>• Training</td>
</tr>
<tr>
<td>Documented Procedure</td>
<td>• yes</td>
<td>• yes</td>
</tr>
<tr>
<td>Records</td>
<td>• yes, minimum 5 years</td>
<td>• yes, minimum 5 years</td>
</tr>
<tr>
<td>On/off-product logo</td>
<td>• yes/yes (approval from accredited body)</td>
<td>• yes/yes</td>
</tr>
<tr>
<td>Logo use manual</td>
<td>• FSC Trademark Policy Manual</td>
<td>• PEFC Logo Use Rule</td>
</tr>
<tr>
<td>Feature</td>
<td>CSA</td>
<td>MTCC</td>
</tr>
<tr>
<td>---------</td>
<td>-----</td>
<td>------</td>
</tr>
<tr>
<td><strong>System</strong></td>
<td>• Third-party System-based</td>
<td>• Third-party Performance-based</td>
</tr>
<tr>
<td># of CoC holders</td>
<td>• 43</td>
<td>• 41</td>
</tr>
<tr>
<td>CoC commence year</td>
<td>• 2001</td>
<td>• 2000</td>
</tr>
<tr>
<td>Geographical coverage</td>
<td>• Canada and USA</td>
<td>• Malaysia</td>
</tr>
<tr>
<td>Participants</td>
<td>• CSA forest management certificate holders</td>
<td>• Any companies, organizations, etc</td>
</tr>
</tbody>
</table>
| Product Categories | • At least 70% of the input is certified material (solid wood)  
• At least 70% of the content is certified material (composite products)  
• 100% certified material | • Solid wood (100% certified)  
• Collection of solid wood (minimum 70%)  
• Assembled products of solid wood parts (minimum 70%)  
• Chip and fiber (minimum 30%)  
• Assembled products of both solid and chip/fiber parts (70% for solid, 30% for chip/fiber parts) |
| Wood Source Verification | • Certified/Non-certified material | • Certified/Non-certified material |
| **Non-certified material** | | |
| Physical Separation | • 100% certified  
• Physical separation method | • Solid wood (100% certified)  
• Physical separation method |
| Percentage System | • At least 70% of the content (composite products)  
• Minimum average percentage system | • Others (except 100% certified solid wood)  
• Minimum average percentage system |
| Input/output Models | • At least 70% of the input (solid wood)  
• Input/output system | |
| **Planning** | | |
| Human resources | | • Training and written instruction |
| Documented Procedure | • yes | • yes |
| Records | • yes, minimum 5 years | • yes, minimum 5 years |
| On/off-product logo | • yes/yes | • yes/yes |
| Logo use manual | • Specification for Use of the CSA SFM Mark | • MTCC Logo Guide for Certificate Holders |
1.4 Overall view of this study

The overall objectives of this study are to: 1) assess current CoC certificate companies from various viewpoints, including industry sectors, geographical locations, company profile, and company perspectives on forest certification; 2) discuss trends in the market for CFPs; and 3) discuss ways to promote CoC certification effectively across countries.

To achieve the above objectives, three different bodies of research were conducted to analyze current FSC CoC certificate holders. First, as discussed in Chapter II, forest industry sectors were examined in five countries – Brazil, Japan, South Africa, the United Kingdom and the United States – with the aim of developing an understanding of trends in demand for CFPs across industry sectors and countries. Second, in Chapter III, data gathered on companies in Japan, the UK and the USA, was assessed for the purpose of capturing profiles of current CoC certificate holders. Finally, in Chapter IV, the perspectives of CoC certificate holders in the USA and Japan were assessed by analyzing the results of surveys conducted of companies in these two countries.
Chapter II

Trends in Products of Chain-of-Custody Certification Holders

2.1 Introduction

One of the challenges facing forest certification is market uncertainty for certified forest products (CFPs). If demand for CFPs is very small, the forest industry will have insignificant economic incentive to participate in forest certification regimes. On the other hand, if demand for CFPs continuously increases, forest certification will provide foresters and forestry-related industries with important benefits, such as new market accessibility, increased sales, enhancement of competitive ability, and so on. However, as CFPs are not currently recognized in customs classification codes for the international trade, no official statistical data exist to analyze trends and to estimate potential development of the market for CFPs.

Although in 2003 the potential annual timber supply from the world’s certified forests was estimated at approximately 300 million m3, only a small fraction of the estimated potential wood supply from certified forests is actually marketed as CFPs, and a large majority of this supply loses its certification status at some point in the complex CoC of the forest products.
market (Rametsteiner 2003). This is largely because most certification schemes have not yet begun issuing CoC certification. Therefore, much of the forest products produced from forests certified according to certification programs that have not developed CoC certification systems technically are unable to move downstream as CFPs. Consequently, the amount of CFPs sold to end users will not be augmented absent progress in the CoC certification system.

Since there are no official figures on CFPs, the number of CoC holders across industry sectors and countries can be used as an indicator of trends in the demand for CFPs in business-to-business markets. As of March 2004, nearly 4,500 CoC certifications had been issued worldwide. FSC and PEFC are the dominant players, having issued roughly 70% and 30% of CoC certifications, respectively. The number of participants in both certification schemes has been rapidly growing — the number of FSC CoC holders nearly tripled from 2000 to 2003, and those holding PEFC CoC tripled from 2001 to 2003 (FSC; PEFC). Companies hold FSC CoC certificates cover a comparatively wide range of wood-based industries and trade sectors, while companies holding PEFC CoC certificates are mainly active in more upstream sectors in the processing chain, such as sawmilling and timber trade (FSC; PEFC; Rametsteiner 2003). Other major differences between FSC and PEFC CoC certification programs are: the FSC CoC certification
system has been active since 1993 whereas PEFC only began to issue licenses for trademark use in 2001; and, FSC certifies companies in more than 60 countries worldwide, whereas PEFC’s CoC certifications have been issued to companies located in just 15 countries, primarily in Europe.

As of December 2003, the geographical distribution of the FSC CoC certificate holders, comparing developed and developing countries, was approximately 70% and 30%, respectively. The United States has the largest number of FSC CoC certificates in the world, with more than 400 companies. The United Kingdom has the world’s second largest – and Europe’s largest – number of CoC holders, with nearly 300 companies. Among Latin American countries, Brazil possesses the largest number of CoC certified companies, about 150, sixth in the world, overall. Japan has the largest number of companies with CoC certificates in Asia, ranking seventh in the world. South Africa has the greatest number among the African countries, and ranks eighth worldwide (Graph II-1).

![Graph II-1. The Top-ten FSC CoC Certificates Distribution, December 2003 (sources: FSC 2003)](image-url)
2.2 Research questions

The research question for this study is “do trends in demand for CFPs by countries and/or industry sectors differ?”

2.3 Objectives

The objectives of this research are: 1) to analyze the development of CFP markets across different industry sectors in the United States, the United Kingdom, Japan, Brazil, and South Africa; 2) to compare the trends in demand for CFPs among these five countries; and 3) to discuss reasons for different trends of the market for CFPs among these five countries.

2.4 Methods

As there are no official figures for trade of CFPs, this research focused on FSC CoC certification rather than PEFC because: 1) FSC CoC certification is more well-established, PEFC CoC certification having only been around for a few years, which does not yet allow for sufficient data to analyze the relevant market trends, and 2) FSC is available to any company in any country, regardless of the region, if the company is interested in obtaining CoC certification. This generates less bias when comparing trends across countries.
The five countries selected – the UK, the USA, Japan, Brazil, and South Africa, represent the leading holders of CoC certificates in their respective regions –, North America, Europe, Asia, South America, and Africa. From the FSC database (FSC 2003), two types of data for all CoC holders in the five countries were collected: (1) the date that each company was certified and (2) products that each company offers. From the data, trends in the number of issued CoC certificates from 1993 to 2003 were first determined for each country. Secondly, diverse products were categorized into 23 groups based on observed tendency of goods produced by a company, products’ economic value, phases in the processing chain, and 4-digit standard industrial classification codes (Appendix 1). These product categories are:

- round wood
- lumber
- plywood / veneer
- MDF / board
- sawmill by-products
- molding
- millwork
- distribution / transportation
- public construction materials
- housing materials
- windows / doors
- flooring
- furniture
- garden products
- household products
- pulp and paper
- wood chips
- firewood / charcoal
- pallets / boxes
- others with high value
• others with low value  
• non-identified  
• non-timber forest product

(other products were divided into higher and lower unit price)

Trends in the number and types of companies for each country were analyzed and an index devised to indicate diversity of industry sectors by altering Simpson’s Index of diversity indices. The diversity index (di) used in this analysis was:

\[ di = \frac{TS}{\sum \left( C_i - S_i \right)^2} \]

• where:  \( di \) = Diversity Index  
•  \( C_i \) = the proportion of sector \( i \) in the country (that is, the number of companies of sector \( i \) ÷ the total number of companies in the country)  
•  \( S_i \) = the expected proportion of a sector in the country when companies are evenly distributed across the sectors (that is, the expected number of companies when evenly distributed ÷ the total number of companies in the country)  
•  \( TS \) = the total number of sectors (fixed value)
2.5 Results

2.5.1 Trends in number of companies

As of December 2003, 419 companies held the FSC CoC certification in the USA, with companies certified as early as 1993. The earliest CoC certifications issued in both the UK and South Africa were in 1997. Presently, the number of CoC holders is 298 in the UK and 114 in South Africa. In 1998, the first CoC certificate was issued in Brazil and today there are 146 Brazilian CoC certified companies. Lastly, although there currently are 121 CoC holders in Japan, CoC certification is relatively new for the country, having been in place only since 2000 (Table II-1).

<table>
<thead>
<tr>
<th>Issue Year</th>
<th>UK</th>
<th>USA</th>
<th>Japan</th>
<th>Brazil</th>
<th>South Africa</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>4</td>
<td>13</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1998</td>
<td>21</td>
<td>34</td>
<td>6</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>75</td>
<td>66</td>
<td>20</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>173</td>
<td>132</td>
<td>5</td>
<td>41</td>
<td>46</td>
</tr>
<tr>
<td>2001</td>
<td>226</td>
<td>226</td>
<td>18</td>
<td>78</td>
<td>74</td>
</tr>
<tr>
<td>2002</td>
<td>268</td>
<td>323</td>
<td>53</td>
<td>123</td>
<td>91</td>
</tr>
<tr>
<td>2003</td>
<td>298</td>
<td>419</td>
<td>121</td>
<td>145</td>
<td>114</td>
</tr>
</tbody>
</table>

Sources: FSC 2003
Although the total number of CoC holders is continuously increasing across the five countries every year, the growth rate – the number of issued CoC certificates in each year – differs from country to country, and from year to year. The number of issued CoC certificates in the UK had multiplied every year from 1997 to 2000, but after peaking in 2000, the rate of increase has slowed down. From 1993 to 1997, the number of CoC holders in USA was rather small and the development of CoC certification was fairly insignificant. It is also worth noting that during this period the USA was the only country with CoC certificates among the five. From 1997 to 2001, however, the USA experienced sharp growth in the number of CoC certificates issued, a phenomenon similar to that experienced in the UK prior to 2000. Unlike the UK, however, the rate of increase in the number of certificates issued annually has remained stable in the USA after peaking in 2001. Japan, the latest of the five countries to enter the FSC CoC certification arena, has seen a rapid expansion of the number of certified companies, resembling growth rates experienced in the UK and the USA during their periods of major growth. The rate of issuance of Brazilian and South African CoC certificates has always been slower and unstable compared to the rates experienced in the other three countries (Graph II-2).
2.5.2 Trends in diversity across the industry sectors

For all countries, generally as the number of total CoC certified companies increases, the diversity across industry sectors is accordingly enhanced. The UK has the most evenly distributed industry sectors among the five countries. Compared to the diversity indices of the UK and the USA, those of Japan, Brazil and South America have always been lower, primarily because the number of industry sectors with CoC holders in these countries is smaller than the number in the UK and USA. In addition, in the case of Japan, the paper and pulp industry has been rapidly dominating the overall
CoC industry in the country—from 5% of the total in 2001, to 35% in 2002, and approximately 45% in 2003. This is a phenomenon distinct to Japan with no analog in the other countries and has resulted in lower diversity and uneven distribution of certification holders across the Japanese forest industry sectors. This explained the lower diversity indices in Japan compared to those of Brazil and South Africa even though their numbers of CoC certificate holders are in a similar range (Graph II-3).
2.5.3 Industry Sectors Distribution

As seen in Graph II-4, distribution of CoC certified companies across industry sectors differs from country to country. Primary wood products, including round wood, lumber, sawmill, and sawmill by-products, account for over 40% of the wood-related industry in Brazil and South Africa, approximately 30% in the UK and the USA, and about 15% in Japan. Companies producing value added forest products, such as MDF, plywood, veneer, and particleboards, make up approximately 10% to 20% of all industry in the UK, the USA and Brazil, and less than 10% in South Africa. Interestingly, this category is almost insignificant in Japan.

The manufacturers of construction materials, including housing materials and molding, account for around 10% in the UK, the USA, and Japan, and around 5% in Brazil and South Africa. About 30% of the British, American and Brazilian companies are manufacturers of secondary wood products, such as doors, flooring, furniture, garden products, and household items, while this group accounts for 25% of companies in South Africa and 15% in Japan. Japan is unique insofar as about 45% of its forest companies are in the pulp and paper industry. In contrast, less than 5% of CoC companies in the other four countries surveyed are in the pulp and paper industry. Also notable is the fact that South Africa is the country with the...
highest concentration of companies producing firewood and/or charcoal, nearly 10%.

Overall, when products were categorized according to their processing phases in the chain-of-custody, the UK and the USA have the most similar distribution patterns by industry groups among the five countries. The distribution patterns of Brazilian companies are close to those of the UK and the USA, except Brazil shows a comparatively higher concentration in the primary forest products sector. In South Africa, the proportion of companies that produce highly processed wood products is smaller compared to those in the other countries. Finally, the high proportion of the pulp and paper industry among the Japanese industry sectors distinguishes Japan from the others countries surveyed (Graph II-4).

There was neither a significant difference nor a tendency across the five countries with respect to the types of industry sectors that achieved CoC certification in early years and those obtaining it in later years, after CoC certification was introduced into the country. In other words, for all countries except Japan, there is no significant change over time in the distribution of CoC certification across industry sectors (Appendix 2).
Fig. II-4. Distribution of CoC Certificates Holders by Industry Sectors across the Countries
2.6 Discussion

Although FSC CoC certification has been available since 1993 to forestry-related industries, the actual movement toward CoC certification among related industries did not become active until 1997. At that point, interest in CoC certification increased rapidly in the UK and the USA until 2000 and 2001, respectively, as indicated by the increasing number of CoC certificates issued every year. However, the number of companies certified every year started to decline in the UK in 2001 and stopped increasing in the USA in 2002. It is worth noting that the other major international certification scheme, PEFC, started to issue CoC certifications in 2001. Neither of these countries is a major player in PEFC CoC certification. In fact, no American company has achieved PEFC certification yet. While 26 British companies have obtained PEFC CoC as of March, 2004, this is a very small number considering that it represents less than 2% of the total number of PEFC CoC holders; further, other major European countries, such as France and Germany, have substantially more CoC holders, 425 and 378, respectively. Therefore, the decline in the number of issued CoC certificates every year in the UK was not because companies chose another available program over FSC CoC certification. Factors that may have caused this slowdown include: less pressure from environmental organizations; diminished confidence in forest certification among forestry sectors; less
public attention on deforestation; fewer benefits from CoC certification than expected and less demand for CFPs in the wood market.

Although the rate of certified companies per year stopped increasing in the USA in 2001, the rate at which new companies achieve FSC CoC certification has been stable since 2000 and every year since then about 100 companies have been added to the FSC CoC regime. This may indicate that, at least in the USA, interest in CFPs is increasing among the forestry sectors and supply of and demand for CFPs are expanding. Similarly, Japanese CoC certification holders are growing at an increasing rate, perhaps demonstrating increasing interest in forest certification among industries and demand for CFPs in Japan as well. The numbers of CoC certificates issued per year in Brazil and South Africa are comparatively lower. The reasons for this may include the fact that companies in these two countries have financial and/or technical limitations on achieving CoC certification. Further, companies operating in the international market are more likely to be interested in certification considering that the current markets for CFPs are concentrated in the Northern hemisphere.

The unique distribution of Japanese industry sectors – with a high concentration on the paper and pulp industry – may be explained by the fact
that this industry sector has a reputation among Japanese consumers for clearing tropical forests and is seeking a means to change this image. Also, Japanese consumers in general are not particularly environmentally sensitive compared to consumers in other parts of the world such as Europe, which may result in less perceived need for certification in the other Japanese forestry related industry sectors, making pulp and paper standout.
Chapter III

Profile of Chain-of-Custody Certificate Holders

3.1 Introduction

Because the increasing movement toward FSC CoC certification in forest-related industry sectors is still a recent trend, number of CoC certified firms comprise a very small percentage of the total number of forest-related companies. For example, while the total number of CoC certified firms in the USA was 419 in 2003, in 1997 there were 36,735 plants for lumber and wood products manufacturers, 2,095 plants for furniture and fixtures, and 6,496 plants for paper and allied products (the U.S. Census Bureau 2004). As another example, in Japan there were 9,256 firms for wood and wood products manufacture, 10,554 for furniture and fixtures, and 7,471 for pulp and allied products in 2001, while there were 121 CoC certified firms throughout all the industry sectors in 2003 (the Statistics Bureau of Japan 2004). Therefore, those CoC companies which decided to achieve CoC certification probably had a specific interest in achieving forest certification, which decision may be influenced by a company’s marketing strategies,
particular philosophy, market conditions, and social factors.

The concept of environmental marketing appeared in the early 1990s around the same time that environmental concerns began impacting the marketplace, particularly in manufacturing industries using natural resources (Coddington 1993; Polonsky 1995). One of the defining characteristics of environmental marketing is the use of proactive strategies that benefit companies and society by redirecting consumer demand to environmentally preferable products and services (Polonsky 1995). Companies may adopt environmental marketing for different reasons such as social responsibility, governmental pressure, competitive pressure and enhanced profit-making (Polonsky 1994). While concern over the environment may reduce companies’ operating effectiveness (including cost performance), it also may provide companies with many opportunities. Moreover, any firm in today’s competitive marketplace needs to develop competitive strategies rather than seeking only operating effectiveness.

Fundamental elements of competitive strategies include product differentiation, selective marketing, and creating a credible company image. The key element of a product differentiation strategy is to create something about the product that is perceived industry-wide and among customers as
being unique. The principle concept of selective marketing is to target specifically a group of customers requiring similar products and levels of service (Sinclair 1992). The core philosophy behind creating a credible company image is to make consumers view companies’ commitment to the environment as sincere, so that consumers can trust companies’ environmental claims, which currently tends to be viewed by consumers with a great deal of skepticism (Hansen 1997). “Green” marketing needs to be more than just a slogan or an advertising pitch.

Forest management certification and CoC certification are designed to foster three elements: CFPs are distinguished and differentiated from other products by being environmentally friendly; environmentally conscious customers, both individual and industrial, are specifically targeted by companies as potential consumers of CFPs; and third-party certification, rather than a company’s own claims about its environmental practices, gives the company more credibility in the eyes of consumers. In short, CoC certification is one option for firms in the wood products industry to implement their environmental marketing strategies. Not all firms adopt environmental marketing strategies and there may be something particular about the profiles of firms that have adopted forest certification as their environmental marketing strategy. Even among companies pursuing forest
certification there may be diverse objectives and expectations from forest certification, as a result of differences in marketing strategies and the needs of the particular business.

3.2 Research Questions

The research questions for this chapter are the following:

- What is the “typical” profile of companies with CoC certification?
- Do companies with certain profiles (i.e., their size, sales volume, type, etc.) adopt forest certification earlier than others?
- Do the profiles of the “typical” company seeking CoC certification differ across countries, reflecting localized social and cultural factors, and the condition of the markets in which companies are active?

3.3 Objectives

The objectives of this chapter are to: 1) analyze data on CoC certified companies in the UK, the USA, and Japan, in order to characterize a “typical” CoC certification holder in each country; 2) compare the dominant company profile across the three countries, and 3) discuss potential factors
creating differences in company profiles among the three countries.

### 3.4 Methods

Among the five countries studied in the previous chapter, three, the UK, the USA and Japan, were focused on for this research due to the fact that sufficient data are available on a wide range of companies in these three countries, from “mom-and-pop” businesses to large-scale firms. Data were collected on FSC CoC certified companies in December 2003. The data fields – year of incorporation (this information was only available for UK and Japanese companies); number of employees; estimated or actual sales in year 2002; the type corporate ownership, e.g., public, private or cooperative; and number of registered 4-digit Standard Industrial Classification Codes (this information was only available for UK and American companies) – were gathered from 11 databases in order to maximize the data coverage on the CoC holders. The ICC Financial Analysis Reports, the ICC Directory of UK Companies, the ICC Directory of Irish Companies and the Major Companies Database are source of collecting data on the UK companies. Reference USA, US Business Directory, Canada Business Directory and Hoover's Company Capsules are the sources of data regarding the American companies. Teikoku Databank, Foreign Companies in Emerging Markets Yearbook, and the
AMITA database were employed for collecting data on the Japanese companies. Information from different databases was reasonably consistent as determined by comparing data on companies appearing in more than two databases.

The $t$-test ($\alpha = 0.05$) was used to test significant differences between means of data across the countries, where applicable. In order to assess linear association between data field and the issue year for the CoC certificate, the correlation coefficient was used.

### 3.5 Results

#### 3.5.1 Data Availability

There was some limitation on data availability. Out of the 298 British CoC holders listed in the FSC database in December 2003, at least one of the 11 databases contained data on company type, e.g., public or private, for 257 companies (86.2%); data on number of employees were available for 160 companies, or 54%; data regarding estimated sales of the year 2002 were available for 147 companies, or, 49%; data showing year of incorporation were found with respect to 248 companies, or 83%; and data showing the Standard
Industrial Codes (SIC) of products were available for 235, or 79%, of the British companies.

As to the American companies, data on type of company were found for 381 CoC holders (91%); data on number of employees were located for 375 CoC holders, or 90%; data on 2002 estimated sales were found for 365 companies, or 87%; and data regarding 4-digit SIC were available on 377 or 90% of the American CoC holders. However, no database contained information on the year the American companies were incorporated. Out of 121 CoC Japanese certificate holders, 110, or 91%, were found in a database containing information on the type of company; 91 companies, or 75%, were found in databases containing data on number of employees; 85 companies, or 70%, were found in databases of companies sales data; and 87, or 72% of companies were represented in databases containing the year of incorporation. Only partial data were found on SIC from Japanese databases, therefore, this data field was not included for Japan (Table III-1).

<table>
<thead>
<tr>
<th>Country</th>
<th>Total # of Companies</th>
<th>Total Company on database</th>
<th>Type of Company</th>
<th>Employees</th>
<th>Estimated sales (2002)</th>
<th>Incorporated year</th>
<th>SIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>298</td>
<td>257</td>
<td>257</td>
<td>160</td>
<td>147</td>
<td>248</td>
<td>235</td>
</tr>
<tr>
<td>USA</td>
<td>419</td>
<td>381</td>
<td>382</td>
<td>375</td>
<td>365</td>
<td>N/A</td>
<td>377</td>
</tr>
<tr>
<td>Japan</td>
<td>121</td>
<td>110</td>
<td>110</td>
<td>91</td>
<td>85</td>
<td>87</td>
<td>N/A</td>
</tr>
</tbody>
</table>

43
3.5.2 Type of Companies

While the UK and the USA have similar types of companies, there was a significant difference between Japan and the other two countries. Most British and American CoC certificate holders are private companies, 83% and 91%, respectively, and there are very few public companies, 3% and 1% respectively. In contrast, most Japanese companies, 74%, are public, and only 17% of them are private (Fig. III-1)

![Graph showing type of companies](image_url)

Fig. III-1 Type of companies
(Numbers in the graph are number of companies)
3.5.3 Employee and Estimated Sales

The number of employees per company and estimated sales in 2002 were assessed for each of the three countries as indicators of company size. On average, the Japanese companies have the largest number of employees, 1,048 per firm, followed by the Americans, with 262 employees per firm. The British average, 185 employees per firm, was the smallest number among the three countries (Table II-2). With regard to just private firms, the average, or mean, number of employees for American companies is 88, while the British private company average, 183 employees per firm, is similar to the average for public British companies. One large American public corporation, Georgia Pacific Corporation, greatly increases the average number of employees per American company, being an outlier. The median number of employees in American companies (20) is lower than the median of British (85) and Japanese (176) companies. Another interesting aspect of the data was the different patterns of distribution of company sizes among the three countries. For example, most Japanese companies, which employ the highest average number of employees per firm among the three countries, fall into two broad categories: 28% of them have more than 1,000 employees and 50% have 20-500 employees. While 97% of American companies have fewer than 500 employees, 78% of the British companies have 20-500 employees. (Fig. III-2).
Table III-2 Number of employees (2003)

<table>
<thead>
<tr>
<th>Country</th>
<th>n</th>
<th>Mean</th>
<th>Min</th>
<th>Max</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>160</td>
<td>184.9</td>
<td>1</td>
<td>1,947</td>
<td>277.7</td>
</tr>
<tr>
<td>USA</td>
<td>375</td>
<td>262.0</td>
<td>1</td>
<td>75,000</td>
<td>3,871.7</td>
</tr>
<tr>
<td>Japan</td>
<td>91</td>
<td>1,048.3</td>
<td>4</td>
<td>9,737</td>
<td>1,904.2</td>
</tr>
</tbody>
</table>

Fig. III-2 Number of employees
n=160 (UK), n=375 (USA), and n=91 (Japan)

Not surprisingly, the estimated sales data demonstrate trends similar to those seen by analyzing the number of employees (Fig. III-3). The average
2002 sales of the Japanese companies ranked the highest (US$5,566 million), followed by the American companies (US$82 million), and the British companies (US$39 million). As was seen by examining the effect on the mean of their numbers of employees, big American corporations are outliers in the distribution of annual sales of the American companies. If these large corporations are not included in the analysis, the average annual sales are about US$25 million for the American companies.

Fig. III-3  Estimated sales (million USD)

n=147 (UK), n=365 (USA), and n=85 (Japan)
A statistically significant difference was found between the Japanese companies and each of the other two countries in terms of number of employees and annual sales at $\alpha = 0.05$ (Table III-3).

### Table III-3  Estimated sales (2002, USD)

<table>
<thead>
<tr>
<th>Country</th>
<th>n</th>
<th>Mean (US$million)</th>
<th>Min</th>
<th>Max</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>147</td>
<td>39.0</td>
<td>0.1</td>
<td>533</td>
<td>50.5</td>
</tr>
<tr>
<td>USA</td>
<td>365</td>
<td>81.6</td>
<td>0.1</td>
<td>23,271</td>
<td>1,310.9</td>
</tr>
<tr>
<td>Japan</td>
<td>85</td>
<td>5,565.9</td>
<td>1.2</td>
<td>79,680</td>
<td>21,426.0</td>
</tr>
</tbody>
</table>

#### 3.5.4 Incorporated Year and SICs

As noted, the year of incorporation of British and Japanese companies was collected as an element of the company profile. Due to data limitations, the American companies were not included in the analysis of this variable. About 50% of the British companies were incorporated during 1980-2000, while about 50% of Japanese companies were incorporated during 1940-1960. Over all, Japanese companies are older than British companies (fig. III-4).
The number of 4-digit SIC codes was used to generate an index of product line diversity in the UK and the USA. Due to limited data availability, the Japanese companies were not considered in this analysis. The average number of SICs was 1.4 for the British companies and 2.4 for the American companies. While more than 90% of the British companies have only one or two SICs, about 65% of American companies have one or two SICs and the rest of them have more (Table III-4, Fig. III-5).
Although the simple correlation coefficient was calculated to assess the correlation between variables including issue year, type of companies,
number of employees, etc., no significant correlation was found between any variables with one exception: as expected, a correlation was found between the number of employees and estimated sales. In other words, correlation coefficients do not indicate any patterns or typologies among companies that have achieved CoC certificate from FSC so far (Table III-5).

### Fig. III-5  Correlation between variables

#### UK

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of company</th>
<th>Issue year</th>
<th># of employees</th>
<th>Estimated sales</th>
<th>SIC</th>
<th>Incorporated year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of company</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issue year</td>
<td>0.04</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of employees</td>
<td>0.02</td>
<td>-0.15</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimated sales</td>
<td>0.03</td>
<td>-0.08</td>
<td>0.78</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIC</td>
<td>-0.01</td>
<td>-0.02</td>
<td>0.15</td>
<td>0.11</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Incorporated year</td>
<td>0.04</td>
<td>0.05</td>
<td>-0.27</td>
<td>-0.29</td>
<td>-0.15</td>
<td>1</td>
</tr>
</tbody>
</table>

#### USA

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of company</th>
<th>Issue year</th>
<th># of employees</th>
<th>Estimated sales</th>
<th>SIC</th>
<th>Incorporated year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of company</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issue year</td>
<td>0.02</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of employees</td>
<td>0.71</td>
<td>0.06</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimated sales</td>
<td>0.71</td>
<td>0.06</td>
<td>1.00</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIC</td>
<td>0.13</td>
<td>-0.07</td>
<td>-0.03</td>
<td>-0.03</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Incorporated year</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Japan

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type of company</th>
<th>Issue year</th>
<th># of employees</th>
<th>Estimated sales</th>
<th>SIC</th>
<th>Incorporated year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of company</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issue year</td>
<td>0.35</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of employees</td>
<td>0.15</td>
<td>0.01</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimated sales</td>
<td>0.07</td>
<td>-0.16</td>
<td>0.58</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIC</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Incorporated year</td>
<td>0.00</td>
<td>0.04</td>
<td>-0.38</td>
<td>-0.15</td>
<td>N/A</td>
<td>1</td>
</tr>
</tbody>
</table>

51
3.6 Discussion

The most significant finding of this research is that the ‘typical’ companies in each country have distinct national profiles. While the American and British CoC certificate holders share similarities at certain levels, the Japanese CoC certificate holders are very different from their counterparts in the other two countries. The companies seeking FSC CoC certification in the USA and the UK tend to be smaller, private companies. On the contrary, in Japan, while many large conglomerates have achieved FSC CoC certification there is also a significant number of small private firms with certification. Although firms of different sizes have adopted forest certification as a tool for implementing their environmental marketing strategies, their main objectives in doing so may be different, depending on corporate size. Smaller firms are more likely to use CoC certification to improve their competitiveness by using certification to achieve product differentiation and/or to target specific markets. Larger corporations, however, may value certification as a means of effectively developing credibility among a wide range of customers.

Interestingly, out of 50 Japanese companies that have over US$100 million annual sales, 48 are in the pulp and paper industry and all of them
are public. Unlike Japan, in the USA and the UK, a wide range of industry sectors are represented among those companies with higher annual sales. The phenomenon of a large number of multi-million dollar Japanese pulp and paper corporations seeking forest certification from FSC as a tool for enhancing their environmental marketing strategies has not been seen within other industries in any of these three countries.

One of reasons why there are more private and smaller CoC companies in the UK and the USA compared to Japan may include the fact that there is higher competition in small businesses in the two countries. However, the most significant factor resulting in fewer large FSC CoC corporations in the USA may be the national forest certification scheme, the Sustainable Forest Initiative, which was developed by forest industry. Most pulp and paper firms in the USA probably think that SFI certification is compatible with FSC certification, and avoid FSC CoC certification by signing on with the SFI program. Moreover, it may be very difficult for large American corporations to obtain large amounts of certified supply materials at once due to fragmented forestland ownership in the USA.

On the contrary, many Japanese large CoC corporations with brand names in the pulp and paper industry want to protect their public image by using FSC
CoC certification, as there is no operative national forest certification program yet in Japan. The highly capital-intensive pulp and paper companies continuously need to import new materials from overseas because of limitations on quality of products made from recycled materials and because sufficient supplies can never be found from domestic sources. Further, because these corporations are so huge, they are subject to pressure from various sources, including consumers, government, and environmental NGOs. Forest certification was has given the firms needed credibility among customers. This is because FSC is a recognized, international certification scheme that is supported by many environmental NGOs, something consumers credit in their purchasing decisions. While the experience of the Japanese pulp and paper industry should be viewed positively, further analysis will be required in order to assess the actual percentage of their production that is certified (CFPs).

In this research, no significant correlation was found between companies’ decision to adopt forest certification and the length of time they have been in business. This may be because firms seek forest certification based on various factors such as corporate philosophy, customers’ desire, market strategies and so on, which may not always correlate with the age of their business. Because forest certification is still a new market strategy and
a new trend for most forest industries, if CFP markets develop more, more firms with diverse profiles may become interested in it. Therefore, it is important to continue analyzing the progress of the market for CFPs in order to identify trends over time.
Chapter IV

Perspectives of CoC Certificate holders in the USA and Japan

4.1 Introduction

CoC certificate holders play essential roles in the development and promotion of forest certification because forest products from certified forests have to be processed and distributed under a CoC certification system to become CFPs and CoC certificate holders have more chances to communicate with consumers directly and distribute messages from producers. Both the supply and demand sides of CFPs are key factors for the further success of forest certification because supply and demand interact intimately. Further, forest certification is a market instrument, based on the idea that there is a need to link consumers and producers. Although the demand for products fundamentally reflects consumers’ interest and willingness to pay, it is also a fact that demand can be encouraged on the supply side through environmental market strategies (Hansen, 1997; Sheth, 1995). Therefore, it is very important to have a better understanding of CoC certificate holders’ perspectives on forest certification in order to insure the further success of forest certification. Although comparatively more studies have been
conducted to assess consumer perspectives, behavior, and willingness to pay (Ozanne 1996; 1998; Forsyth 1999; Gronroos 1999; Hansen, et al. 2000; Anderson 2003; Jensen 2003; Ozanne 2003), relatively less attention has been paid to forest product markets (Schwarzbaue 2001; Auld, et al. 2003). Previous studies on perspectives of companies in the forest product processing chain include: attempts to discern environmental perception of forest industry sectors and their willingness to pay (Vlosky 1997); to assess a perceived price premium on solid wood products (Stevens 1998); to estimate solid wood manufacturers’ willingness to pay for CFPs (Vlosky 1998); to analyze the forest sectors’ views of anticipated advantages/disadvantages of CoC certification (Auld, et al. 2003); and to assess the solid wood sectors’ perceived benefits and costs of CoC certification (Vidal 2003). In addition, most surveys on CoC certification are concentrated in North American and European markets with very little attention given to Asian markets, including Japanese markets, despite of the fact that Japan is one of the world’s major wood consuming countries.

Different motivations drive companies to achieve CoC certification, depending on what they expect and anticipate as its advantages. CoC certification of forest markets is very complex because various sectors are involved, many processing stages are included, diverse goods are marketed
and many marketplaces are targeted. Therefore, in order to promote CoC certification successfully, it is important to understand that companies are very diverse in terms of products they deal with, marketplaces they do business in, and their perspectives, expectations and anticipated benefits from CoC certification.

### 4.2 Research Questions

The research questions for this study are:

- What is company’s motivation toward CoC certification?
- What are company’s expectations from CoC certification?
- What are perceived benefits of CoC certification among current CoC certified companies?
- Do the above factors differ across countries and industry sectors in accordance with their needs and strategies?

### 4.3 Objectives

The objectives of this research are to: 1) assess conditions of marketing CFPs among CoC certificate holders; 2) assess the expectations and perspectives of CoC certificate holders for forest certification in the USA and
Japan; 3) compare companies’ perspectives across these two countries; and 4) discuss how to promote CoC certification effectively across countries.

4.4 Methodology

4.4.1 Sampling design

American and Japanese FSC CoC certificate holders as of December 2003 were the target population for this survey. First, a list of CoC certificate holders was obtained from the FSC database, which contains companies’ names, addresses, contact person(s), and email addresses. Second, all of the companies with email addresses – 377 American companies and 69 Japanese companies – were contacted by email and asked to participate in the survey.

4.4.2 Questionnaire development

A questionnaire was designed having five main objectives 1) gather information regarding the respondent companies’ CFPs; 2) assess these companies’ motivation for obtaining CoC certificate; 3) assess their expectations regarding CoC certification; 4) assess their perceived benefits from CoC certification; and 5) examine their perspectives toward the FSC CoC certification program. To develop appropriate survey questions, several
previous consumer surveys (Ozanne 1998; Gronroos 1999) and producers/manufactures surveys (Karna 1997; Stevens 1998; Vlosky 1998; Auld, et al. 2003) were referenced. The questions were structured based on the types of anticipated answers; thus, for example 1) close-ended questions were used to elicit discrete information such as certificate issue year, current certificate status, and so on; 2) open-ended questions were used in order for the respondent companies to name their CFPs; 3) closed-ended questions with ordered response categories and partially closed-ended question with ordered response categories (e.g., 1 to 5 scale, from “no impact” to “strong impact”) were employed for those answers that apply to all companies but on a different scale, for example, the impact certification has had on pricing; and 4) partially closed-ended questions with unordered response categories were employed for those questions where companies’ answers were categorized including open-end option of “others”, for instance, where their CFPs are sold. A questionnaire in both English and Japanese versions was constructed with 15 questions (Appendix 3).

4.4.3 Method

The questionnaire was implemented electronically, using email and websites. A pre-test questionnaire was sent out to 10 companies in the USA and Japan, attached as an MS/Word file to an email with a cover note asking
for feedback. Then, for the first round of surveys, the questionnaire was emailed to all companies with email addresses as an attached MS/Word attachment file with a cover letter. In this first round, conducted from February to March 2004, companies were asked to download the attached file to participate and then to email back the completed survey as an attached file. Two weeks after the first round, a second round of surveys was conducted. This time the questionnaire was set up on-line at a website and only an email with a reminding cover letter was sent to the companies that had not replied to the first questionnaire. Thus, companies were asked to go to the website in order to answer the questions and then submit their answers on-line. Non-response bias was examined by using two-tailed t-tests ($\alpha = 0.05$) and by comparing the distributions by industry sectors between the target population (all companies listed in the FSC database) and the sample population (companies responded to the questionnaire survey) for both countries.

4.5 Results

4.5.1 Response rate

Out of 377 emails sent to American CoC certificate holders, 317 were
deliverable. From the delivered group, 81 usable surveys were returned, a 25.6% response rate. Out of 69 emails sent to Japanese companies, 58 were deliverable. Of this group, 36 usable surveys were returned, a 62.1% response rate. The response rates to the first email survey method and the second online survey were almost the same for American companies, while the first response rate was twice as high as the second response rate for Japanese companies.

4.5.2 Non-response bias

In order to test for non-response bias, data from the first survey respondents was tested against the data from later respondents. This was done because people who were more interested in the subject matter were more likely to respond quickly to the survey (Armstrong 1977). Further, the second survey method, online submission, is simpler and less time consuming, a more user friendly method which is an important element in achieving a higher response rate (Dillman 2000). The responses for liker-scale questions were tested for differences in means between the first MS/Word file and the second online survey by using two-tailed t-tests ($\alpha = 0.05$). These tests showed no statistical significance between the early and later responses.
The distributions by industry sectors and certification issue year between all companies listed on the FSC database as of December 2003, and the companies that replied to the survey questionnaire were also compared for each country. As to issue year, in the USA more companies that received CoC certification in 2003 and before 1998 replied to the survey, and fewer companies that obtained CoC certification from 1998 to 2002 participated in the survey (Fig.IV-1). This may demonstrate stronger interest in CoC certification among those companies that received CoC certification recently (2003) and those that achieved CoC certification during the very early years of forest certification. However, this trend does not apply to Japanese companies. There were fewer companies that achieved CoC certification in 2003 that responded to the survey and more companies that obtained CoC certification before 2003 that took part in the survey (Fig.IV-2).

Fig. IV-1. Comparison of issue year between all and replied CoC holders in USA
n=419 (all), n=76 (replied)
With respect to distribution across industry sectors, as seen in Fig. IV-3, in the USA the percentages of furniture industry companies responding to the questionnaire was higher than that of furniture-related companies listed on the database. This may demonstrate that interest in forest certification is higher in the furniture industry compared to other industry sectors. In Japan, although there is slightly higher percentage of companies replying in the pulp and paper industry, the distribution pattern of responses across industry sectors between the companies responded to the questionnaire and those listed on the database is similar (Fig. IV-4).

**Fig. IV-2. Comparison of issue year between all and replied CoC holders in Japan**

n=148 (all), n=38 (replied), multiple responses are possible
Fig. IV-3. Comparison of sector distribution between all and replied CoC holders in the USA
n=687 (all), n=82 (replied), multiple responses are possible

Fig. IV-4. Comparison of sector distribution between all and replied CoC holders in Japan
n=148 (all), n=38 (replied), multiple responses are possible
4.5.3 Certification status

In the USA, 94% of the companies responding to the survey (n=81) have current CoC certification and 6% of the responding companies have dropped their certification status. Among the CoC certificate holders surveyed, 12% of companies (n=10) own their forests: 80% of these are in North America, 20% are in South America, and 10% are in Oceania. (One company owns forests in both North America and South America) However, only four of the above forest-owning companies have both forest management certification and CoC certification. As to other certification programs, 6% of the American companies have obtained certification from organizations other than FSC, such as Green Seal and Recycled/Recovered Content of Scientific Certification Systems.

In Japan, 97% of the respondent companies (n=36) presently maintain CoC certification and 3% of them have dropped their certification status. Among the Japanese CoC certificate holders, 28% of the companies (n=10) own their forests: 70% of these are in Asia, 10% are in South America, and 20% are in Oceania. Out of the 10 forest-owning companies, seven hold both forest management certification and CoC certification. One Japanese company has obtained certification from PEFC.
For companies in both countries, 2003 was the year in which the greatest number were certified – 32% and 44% of all certified American and Japanese companies, respectively, were certified in 2003. The second most active year was 2002, when 21% of American and 31% of Japanese companies obtained CoC certificates. As seen in Table IV-1, 79% of American companies achieved CoC certification between 2000 and 2003, and 89% of Japanese companies achieved CoC certification between 2002 and 2003.

<table>
<thead>
<tr>
<th>Year</th>
<th>USA</th>
<th></th>
<th></th>
<th>Japan</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td></td>
<td>#</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td>1</td>
<td>1.2</td>
<td></td>
<td>1</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td>1</td>
<td>1.2</td>
<td></td>
<td>1</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td>3</td>
<td>3.7</td>
<td></td>
<td>2</td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>2</td>
<td>2.5</td>
<td></td>
<td>2</td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>3</td>
<td>3.7</td>
<td></td>
<td>2</td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>2</td>
<td>2.5</td>
<td></td>
<td>2</td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>11</td>
<td>13.6</td>
<td></td>
<td>2</td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>10</td>
<td>12.3</td>
<td></td>
<td>5</td>
<td>13.9</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>17</td>
<td>21.0</td>
<td></td>
<td>11</td>
<td>30.6</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>26</td>
<td>32.1</td>
<td></td>
<td>16</td>
<td>44.4</td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td>5</td>
<td>6.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>81</td>
<td>100</td>
<td></td>
<td>36</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>
4.5.4 CFPs and marketplaces

Respondents were asked if they produce any CFPs with the FSC logo. In response, 58% of American companies indicated that they sell CFPs with the FSC logo, as compared to 72% of Japanese companies which do so (Fig. IV-5).

The distribution of CFP categories across all forest industry sectors was analyzed in terms of the total number of CoC certificate holders. In the USA, companies from all forest industry sectors hold CoC certification in relatively even proportions, as compared to the distribution of CFP groups in Japan. Notwithstanding this general parity across sectors, among the
American CoC certificate holders, there are some slightly dominant sectors: for example, the furniture industry accounts for 17% of the total, companies producing lumber make up 13% of the total and the group of CoC certificate holders producing MDF/panels rank third with 10% of the total share. In contrast, in Japan, the pulp and paper industry accounts for 45% of the total share, dominating other CFP categories. The second largest sector is the group of companies producing ‘other’ products such as chopsticks, pine oil, packing material, pallets, and woodcraft. This group accounts for 12% of the total. Next, the log, construction and furniture industry are tied for third place, with 7% of the total share (Fig. IV-6).

![Fig. IV-6. Distribution of Industry Sectors](image)

*Fig. IV-6. Distribution of Industry Sectors*

n=81 (USA), n=35 (Japan), multiple responses are possible
Respondents were also asked to indicate the source of certified wood for their products. For 75% of the American companies, their source of certified wood was domestic forests. At the same time, 15% of the American companies said they imported their certified wood from native tropical forests and 12% from forest plantations in the tropics (multiple responses were possible, which is why the total exceeds 100%). For the Japanese companies, 51% indicated that their certified wood came from domestic forests, while 23% said that they import their certified wood from temperate or boreal forests and 20% responded that they import from forest plantations in the tropics. Only 7% of Japanese companies responded that they import their certified wood from native forests in the tropics (Fig. IV-7).

![Fig. IV-7. Sources of Certified Wood](image)

$n=81$ (USA), $n=36$ (Japan), multiple responses are possible
To identify markets for CFPs, companies were asked where they sell their CFPs. For most companies in both countries, the main markets were domestic. More specifically, 73% of American companies (n=77) and 94% of Japanese companies (n=34) sell their CFPs in only their respective domestic market, and 20% of American and 6% of Japanese companies sell their CFPs in both domestic and international markets. Only 6% of American and 3% of Japanese companies export their CFPs to other countries while having no domestic sales (Fig. IV-8). Among the American companies that sell their CFPs in the international market (n=21), 57% of them have markets in Europe, 43% of them market to Asia, and 24% of them export to Canada (multiple responses are possible).

![Fig. IV-8. Markets for CFPs](image)

n=77 (USA), n=34 (Japan), multiple responses are possible
4.5.5 Decision making processes

In order to understand the respondent companies’ decision-making process with respect to achieving FSC CoC certification, the companies were first asked how they learned about FSC certification. The survey responses demonstrate a difference in the way American and Japanese companies first learned about forest certification. In the USA, the companies learned about forest certification from relatively diverse sources, including: the certifier organization, FSC (38%); other companies in the forest industries (including client and supplier companies)(35%); environmental NGOs (24%); the media (22%); and buyers’ groups (15%).

In contrast, in Japan, most companies learned about forest certification from rather limited sources, specifically other companies in the forest industries (including suppliers and clients) and/or the media. A large majority, 63%, indicated that they first learned about forest certification from other certified companies. About 20% of the Japanese companies responded that the media as well as wood suppliers first informed them about forest certification. Only 9% of Japanese companies indicated that they learned about certification from a certifier (FSC), which is in marked contrast to the American experience, where, as noted, the highest proportion of American companies first learned about certification from FSC. It is also worth noting
that only a few Japanese companies indicated that they learned about forest certification from environmental NGOs or buyers’ groups (Fig. IV-9).

![Fig. IV-9 “How did you first learn about forest certification?”](image)

To assess why companies chose the FSC scheme over other certification programs, respondents were asked to check all applicable answers from among the following choices: 1) FSC is the most comprehensive certification; 2) FSC is the most widely recognized certification; 3) FSC is the
most credible certification; 4) FSC is an international certification; 5) FSC was the only scheme available by then; 6) client requirements; and 7) others. About 30% companies in both countries answered that they chose FSC because FSC is the most comprehensive certification scheme. Nearly 40% of both American and Japanese companies indicated that they choose FSC because FSC is the most widely recognized certification program. Close to 40% of companies in both countries chose FSC because it is the most credible certification scheme. Approximately 20% of the companies in both countries said that FSC was the only certification available at that moment. Sixty-six percent of Japanese companies and 30% of American companies indicated that they chose FSC because FSC is an international certification scheme. Twenty percent of American companies and 9% of Japanese companies stated that they chose FSC because their clients required them to do so.

In short, the most vital factor for most Japanese companies choosing a certification program was that FSC is an international scheme. This factor was substantially less significant for American companies. Other than this disparity, the reasons why companies chose FSC over other certification schemes were cited by respondents in both countries in roughly similar proportions (Fig.VI-10).
To assess the important factors that influenced the respondent companies' decision to seek certification, companies were asked to indicate the impact of six factors on their decision to obtain CoC forest certification based on a five-point scale: from ‘1’ or ‘no impact at all’, ‘2’ or ‘no impact’, ‘3’ or ‘neutral’, ‘4’ or ‘some impact’ to ‘5’ or ‘strong impact’. The factors assessed were: 1) customers’ desire for environmentally friendly products; 2) other market advantages—pricing, market accessibility, competition, etc.; 3) company’s environmental policy; 4) assistance or pressure from
environmental NGOs; 5) assistance or pressure from government; and (6) avoiding increased regulation.

In the USA, more than 50% of the companies responded that their customers’ desire for environmentally friendly products had a strong impact or some impact on their decision to achieve CoC certification. Close to 40% of American companies said market advantages, and their environmental policy had a strong impact or some impact on their decision. However, in strong contrast, very few American companies said that factors such as assistance or pressure from environmental NGOs, assistance or pressure from the government and avoiding increased regulation had any impact on their decisions to obtain CoC certification.

Over 80% of Japanese companies agreed that their environmental policy had a strong impact or some impact on their decision for CoC certification. More than 70% of Japanese companies indicated that their customers’ desire for environmentally friendly products had a strong impact or some impact on their decision and close to 60% of Japanese companies said market advantages did so. On the contrary, but similar to the trends in the American companies’ responses, most Japanese companies thought assistance or pressure from environmental NGOs, assistance or pressure
from the government, and avoiding increased regulation had no impact or no impact at all. (Fig.IV-11).

Interestingly, correlations among these three factors were high, indicating that companies that think that environmental NGO pressure or assistance affects their decisions, also tend to allow pressure or assistance from government and/or the desire to avoid increased regulations to influence their decision (Appendix 4).
Customers’ desire | Other marketing advantages | Company’s environmental policy | Assistance or pressure from environmental NGO | Assistance or pressure from government | Avoiding increased regulation

USA

Japan

Fig. IV-11. Impact of different factors on company’s decision

n=81 (USA), n=36 (Japan)
As seen in Table IV-2, statistical differences were found at $\alpha = 0.05$ between levels of impact that the American companies perceived from the above 6 factors. The American companies felt that the level of impact from their customers’ desire for environmentally friendly products is significantly higher ($\mu=3.5$) than the level of impact that any of the other factors had. The next most important factors, company policy ($\mu=2.9$) and market advantage ($\mu=2.8$) ranked almost equally and significantly higher than the other three factors: NGO influence, government influence, and regulation.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Customers’ desire</th>
<th>Company’s policy</th>
<th>Market advantages</th>
<th>NGO</th>
<th>Regulation</th>
<th>Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.5</td>
<td>2.9</td>
<td>2.8</td>
<td>1.4</td>
<td>1.2</td>
<td>1.1</td>
</tr>
<tr>
<td>Customers’ desire</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company’s policy</td>
<td>Yes</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market advantage</td>
<td>Yes</td>
<td>No</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGO</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regulation</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>1</td>
</tr>
</tbody>
</table>

With regard to the Japanese companies, statistical differences were also found at $\alpha = 0.05$ between levels of impact among different factors. Although the mean level of impact that a company’s environmental policy
had on its decision was the most important factor ($\mu = 4.2$), there was no statistically significant difference when comparing this factor with the mean level of impact from company’s customers’ desire, the second most important factor ($\mu = 3.7$). However, these two factors are significantly higher than the other four factors. Further, there was no significant difference between customers’ desire and the third most important factor, market advantages ($\mu = 3.5$). However, the level of impact of each of the above three factors was significantly higher than the level of impact of the remaining factors: NGO influence, government influence, and regulation, reflecting the same trends seen in the American companies (Table IV-3).

**Table IV-3. Significant difference between levels of Impact of different factors on Japanese company's decision:** $n=36$ and $\alpha = 0.05$

<table>
<thead>
<tr>
<th>Factors</th>
<th>Company's policy</th>
<th>Customers' desire</th>
<th>Market advantages</th>
<th>NGO</th>
<th>Regulation</th>
<th>Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company's policy</td>
<td>4.2</td>
<td>3.7</td>
<td>3.5</td>
<td>1.9</td>
<td>1.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Customers' desire</td>
<td>No</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market advantages</td>
<td>Yes</td>
<td>No</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGO</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regulation</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>1</td>
</tr>
</tbody>
</table>

There was also a high negative correlation between the "issue year" and "customers' desire" variables. This indicates that companies, which currently have CoC certification, think that "customer desire" had a greater
impact on their decision to obtain it (Appendix 4).

4.5.6 Expectations

One of the important objectives of this survey was to assess current CoC certificate holders’ expectations from forest certification. In order to make this assessment, companies were asked to indicate their level of expectation regarding six factors: 1) earning a price premium; 2) maintaining current market share; 3) expanding access to new markets; 4) improving company image; 5) conserving forest resources; and 6) others. They were asked to rank their expectations based on a five-point scale: from ‘1’ or ‘no expectation at all’, ‘2’ or ‘no expectation’, ‘3’ or ‘neutral’, ‘4’ or ‘some expectation’ to ‘5’ or ‘strong expectation.’

With regard to earning a price premium from forest certification, only 10% of American companies indicated that they had strong expectation or some expectation while more than 75% of American companies said they did not expect to earn any price premium – 57% had no expectation at all and 20% had no expectation. About 30% of American companies responded that they had a strong expectation or some expectation of maintaining current market share by holding CoC certification, while 46% of them had no expectation or no expectation at all of doing so. As to new market
accessibility, 44% of American companies agreed that they had a strong expectation or some expectation of achieving this from forest certification, while 35% of them had no expectation or no expectation at all of doing so. In other words, more American companies had greater expectations of achieving market expansion than of maintaining current markets from CoC certification. As to improving their company image, 31% of the American companies had a strong expectation or some expectation while 35% of them said they had no expectation or no expectation at all of doing so. Finally, about 40% of American companies had no expectation at all that forest certification would result in forest conservation and another 10% had no expectation; a roughly equal proportion, 40%, had a strong expectation or some expectation that forest certification would conserve forests.

Similar to the American companies, the Japanese companies also had lower expectations, compared to the other factors, that forest certification would result in earning a price premium. About 30% of Japanese companies indicated that they had a strong or some expectation of this occurring while 40% of them had no expectation at all or no expectation. About 50% of Japanese companies expected that CoC certification would enable them to maintain current markets – 43% with some expectation and 6% with strong expectation. Japanese companies’ expectations from forest certification are
relatively high with regard to market expansion, company image improvement, and forest conservation. More than 85% of Japanese companies had a strong expectation or some expectation that forest certification would enhance these three factors. (Fig. IV-12).

There was a high correlation among "improve company image" and "earn price premium", "maintain current market", "new market entered", or "forest conservation". This indicates that companies expecting to improve their company image also tend to expect to earn price premiums, maintain market share, enter new markets, and/or conserve forests. Another high correlation was found between companies indicating customers’ desire has an impact on their decision and companies expecting to maintain current market. In other words, companies that anticipate maintaining current market share think customers’ desire has a great influence on their decision (Appendix 4).
Fig. IV-12. Level of expectation from forest certification
n=81 (USA), n=36 (Japan)
As seen in Table IV-4, the American companies, on average, had statistically lower expectations from forest certification with respect to each of the six above-discussed factors as compared to their Japanese counterparts ($\alpha = 0.05$).

<table>
<thead>
<tr>
<th>Factors</th>
<th>USA</th>
<th>Japan</th>
<th>Significantly different ($\alpha = 0.05$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>sd</td>
<td>Mean</td>
</tr>
<tr>
<td>Earn a price premium</td>
<td>1.8</td>
<td>1.2</td>
<td>2.8</td>
</tr>
<tr>
<td>Maintain current market share</td>
<td>2.7</td>
<td>1.5</td>
<td>3.1</td>
</tr>
<tr>
<td>Expand access to new markets</td>
<td>3.1</td>
<td>1.5</td>
<td>4.0</td>
</tr>
<tr>
<td>Improve company image</td>
<td>2.8</td>
<td>1.3</td>
<td>4.0</td>
</tr>
<tr>
<td>Conserve forest resources</td>
<td>2.8</td>
<td>1.7</td>
<td>4.0</td>
</tr>
</tbody>
</table>

In particular, the American companies have significantly lower expectations regarding price premium ($\mu = 1.8$). As seen in Table IV-5, a statistically significant difference, at $\alpha = 0.05$, was found between the levels of expectation regarding price premium as compared to the levels of the other five factors. On the other hand, although Japanese companies’ level of expectation regarding price premium is the lowest on average ($\mu = 2.9$) among the other factors, there was no significant difference between the levels of expectation regarding price premium and current market share maintenance ($\mu = 3.1$). However, expectations regarding forest conservation ($\mu = 4$), new
market expansion ($\mu=4$), and company image improvement ($\mu=4$) were significantly higher than with respect to the two previous factors (Table IV-6).

### Table IV-5. Significant difference between levels of expectation from forest certification in the USA: $n=81$ and $\alpha = 0.05$

<table>
<thead>
<tr>
<th>Factors</th>
<th>Market expansion</th>
<th>Company image</th>
<th>Forest conservation</th>
<th>Market maintain</th>
<th>Price premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.1</td>
<td>2.8</td>
<td>2.8</td>
<td>2.7</td>
<td>1.8</td>
</tr>
<tr>
<td>Market expansion</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company image</td>
<td>No</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forest conserva</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market maintain</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
</tr>
<tr>
<td>Price premium</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Table IV-6. Significant difference between levels of expectation from forest certification in Japan: $n=36$ and $\alpha = 0.05$

<table>
<thead>
<tr>
<th>Factors</th>
<th>Forest conservation</th>
<th>Market expansion</th>
<th>Company image</th>
<th>Market maintain</th>
<th>Price premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>3.1</td>
<td>2.9</td>
</tr>
<tr>
<td>Forest conserva</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market expansion</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Company image</td>
<td>No</td>
<td>No</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Market maintain</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>Price premium</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
To assess factors that might argue against FSC CoC certification, companies were asked to check any of the following possible reasons that might cause them to drop FSC CoC certification: 1) no price premium; 2) no increased demand for CFPs; 3) another more appropriate certification scheme; 4) no decreased cost of certification; and 5) others.

In the USA, 67% of CoC certificate holders indicated that they might drop FSC CoC certification if demand for CFPs does not increase. As the second highest percentage, 38% of American companies think they might shift forest certification programs if there is another scheme that is more advantageous to them. Another factor with regard to the certification scheme, 28% of them think that a failure to realize a decrease in the cost of certification might cause them to drop FSC certification. Another 28% of current CoC holders anticipate that they might suspend CoC certification if no price premium is realized, which is much higher than the percentage of companies (10%) that indicated they expect price premiums from forest certification. About 20% of American companies stated other possible causes that may result in discontinuation of their certified status, including: no increase in certified material supply (n=13); customers no longer requiring FSC; tracking systems and paper work getting more complicated (n=2); and so on. It also worth noting that 10% of American companies indicate none of
the above reasons would cause them to drop FSC CoC certification.

As to Japanese companies, 44% think they might drop FSC CoC certification if demand for CFPs does not increase. Both ‘another more desirable certification program’ and ‘no decrease in costs of certification’ were each cited by about 30% of Japanese companies as factors that would cause them to drop FSC CoC certification. Finally, 14% of Japanese companies think that they would suspend certification if no price premium was realized. Other factors that Japanese companies mentioned as possible reasons to drop FSC certification include, if: FSC lost its credibility; NGOs stopped their assistance; and tracking systems became more complicated.

In summary, ‘no increase in demand for CFPs,’ was chosen by the highest percentage of companies in both countries as a possible reason why they might drop certification. Another factor relating to market benefits, no price premium, was not a widely cited potential cause of dropping certification, compare to the ‘growth in demand’ factor. It is also worth noting that about 10% of companies in Japan – the same percentage as in American companies -- indicated that none of the above factors would cause them drop FSC CoC certification (Fig. IV-13).
4.5.7 Perceived benefits

To evaluate the perceived benefits flowing to current CoC certificate holders, respondents were asked to rate the level of impact that CoC certification already has had on the following aspects of their businesses: 1) advertising and communications; 2) pricing; 3) market share expansion; and 4) new markets entered. A five-point scale – from ‘1’ or ‘no impact at all’, ‘no
impact’, ‘3’ or ‘neutral’, ‘4’ or ‘some impact’ to ‘5’ or ‘strong impact’ – was used to measure the responses in each category.

The results show that American companies have perceived very little marketing advantage from CoC certification so far. For each of the four factors, more than 50% of American companies (64% for price premium) indicated that they have had no impact at all. Further, those companies indicating ‘no impact at all’ and/or ‘no impact’, covered more than 70% of all American companies for all four factors. Only 17% of American companies recognized a positive impact (‘some’ or ‘strong’ impact) of certification on advertising and communication campaigns, 13% of them indicated positive impacts on pricing, 9% of them perceived a positive impact on market share expansion, and 15% of them thought there was a positive impact on new markets entered. The American companies expected the greatest impact of CoC certification to be on new market accessibility, but apparently very few companies have yet to perceive such a benefit.

Japanese companies perceived a slightly higher impact of CoC certification on market benefits. Surprisingly, 43% of Japanese CoC holders, including 9% of them recognizing a ‘strong impact,’ indicated that CoC certification already has had an impact on their advertising and
communication campaigns. And 43% of them (37% ‘some impact’ and 6% ‘strong impact’) also thought that certification has had an impact on their ability to expand their market share. While 60% of Japanese companies think there has not yet been an impact on market share expansion, 26% of them believe there has been such an impact. As to pricing, the Japanese perception was similar to the Americans’. Only 3% of Japanese CoC holders think that forest certification has had an impact on pricing of CFPs and 77% of them agreed that they have not yet recognized any pricing impact from CoC certification (Fig. IV-14).

The correlations among the factors, "advertisement" and "new markets entered" or "market share expansion", were high. This means that companies indicated that CoC certification had an impact on their advertising and communications campaigns also thought there was impact from certification on new markets entered and/or market share expansion (Appendix 4).
Fig. IV-14. Level of perceived benefits from certification
n=81 (USA), n=36 (Japan)
As seen in Table IV-7, there was a significant difference in the level of perceived benefits between the two countries regarding two factors: advertising and communication campaigns and market share expansion. Compared to the American companies, the Japanese companies perceived more strongly that forest certification has had an impact on these two factors ($\alpha = 0.05$).

Table IV-7. Level of perceived benefits from certification
USA (n=81), Japan (n=36)

<table>
<thead>
<tr>
<th>Factors</th>
<th>USA</th>
<th>Japan</th>
<th>Significantly different ($\alpha = 0.05$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean  s2</td>
<td>Mean  s2</td>
<td></td>
</tr>
<tr>
<td>Advertising and communication campaigns</td>
<td>2.0  1.3</td>
<td>3.0  1.2</td>
<td>Yes</td>
</tr>
<tr>
<td>Pricing</td>
<td>1.8  1.3</td>
<td>1.8  0.9</td>
<td>No</td>
</tr>
<tr>
<td>Market share expansion</td>
<td>1.9  1.1</td>
<td>2.2  1.3</td>
<td>No</td>
</tr>
<tr>
<td>New markets entered</td>
<td>2.0  1.3</td>
<td>2.9  1.3</td>
<td>Yes</td>
</tr>
</tbody>
</table>
4.6 Discussion

4.6.1 Certification Status

Forest management certificate holders who are active as wood manufacturers or traders may also want to achieve CoC certification so that they can produce CFPs effectively with a steady supply of certified materials from their own forests. In this survey, there were 21 CoC certificate holders that have their own forests, and 11 of them have forest management certification. Those companies that have both forest management and CoC certification are in a relatively upstream sector in the processing chain, e.g., primary and value added timber products sectors, or big corporations that have established their own processing systems, e.g., Japanese paper companies. There was no company producing only downstream products such as doors/windows, furniture, household products, and flooring holding both forest management and CoC certification, even though some of those producers own forests. This may be because of the complexity of the wood product processing system: many processes and companies are involved until end products are produced, which may create less incentive to achieve forest management certification for those companies with forests producing downstream products.
Further, it is interesting to note that all but one of the 11 companies surveyed that have both forest management and CoC certification maintain domestic forests. In contrast, half of those CoC certificate holders (5 out of 10 companies) owning forests but not holding forest management certification maintain their own forests out of their countries. Reasons for this can include the fact that forest management certification requires more work and time to obtain than CoC certification and domestic forest owners tend to have more advantages towards achieving certification than international owners, such as greater accessibility, stronger community relationships, etc. However, as credibility is a critical aspect of third party certification, it is hoped that companies are not seeking CoC certification merely to improve their images at home, while hiding their overseas forest practices from domestic consumers’ scrutiny.

There were a few American companies that have dropped their CoC certifications. The main reasons are that the companies realized no market advantage and were unsuccessful in obtaining a reliable supply of certified materials. It is noteworthy that these two factors are almost opposite: one reflects a need for more demand and the other a need for more supply. This may reflect a geographical imbalance in certification development (the certification movement is active in some areas but substantially less active in
others), an imbalance among industry sectors (some sectors have more certificate holders compared to others), or lack of well-established distribution and communication systems among industry sectors operating in minor markets. For example, according to Stevens (1998), the proportion of CoC certified companies in the whole American forest industry was higher on the West Coast compared to other regions of the USA. Therefore, it may be important to make additional efforts to promote forest certification in certain target regions in order to prevent potential future demand-supply imbalances and to maintain a continuous increase in the number of certificate holders.

4.6.2 CFPs

The pattern of distribution across wood-industry sectors of the surveyed CoC certificate holders demonstrates the same trends as seen in Chapter II for both the USA and Japan. That is, CoC certification is relatively evenly distributed across industry sectors in the USA and highly concentrated the pulp and paper industry in Japan. This high concentration within the pulp and paper industry in Japan may reflect more the practices and perspectives within that sector than trends within the entire spectrum of Japanese CoC certificate holders. For instance, out of 17 companies indicating that their sources of certified wood are imported, 16 are in the pulp and paper industry.
In this survey, about 60% of American and 70% of Japanese CoC certificate holders said that they sell CFPs with the FSC logo. Although it is not clear why some companies do not market CFPs while holding current certification status, reasons can include: they are service-type businesses, e.g., millwork, transportation, distribution, etc.; they deal with CFPs but use off-product logos due to being in a business-to-business market; insufficient demand to produce CFPs; and not enough supply to manufacture CFPs.

For both countries, most CoC certificate holders – about 70% of American and 85% of Japanese companies – have mainly domestic markets for their CFPs. At the same time, about 75% of American companies have domestic sources of certified woods. In other words, most CFPs produced by current American CoC certificate holders reflect an internal process, from forests to end-users. On the other hand, about half of Japanese companies – the majority being in the pulp and paper industry, as mentioned above – obtain their certified woods from overseas. Moreover, about 50% of those companies importing their certified wood indicated that their sources are from either forest plantations in the tropics or native tropical forests. Therefore, in terms of Japanese markets, the forest certification system may have a significant impact on improving forest management in the tropics in the future, which was the principal purpose of forest certification when it
appeared in the 1990's. As seen in Chapter II, Japanese markets for CFPs are still comparatively small and new compared to the markets available to companies from other countries. However, considering Japan's high demand for forest products in the international markets (FAO 1999; Cohen 2001; Johnson 2001), promotion of CFPs in Japanese markets will have a potentially significant impact on encouraging the sustainable management of the world's forests.

4.6.3 Decision Making Processes

The American companies indicated more diverse sources of knowledge about forest certification as compared to their Japanese counterparts. The main sources of information for American companies included FSC itself, other forest industry companies, environmental NGOs, the media, and buyers' groups. However, sources indicated by Japanese CoC certificate holders were relatively more focused, i.e., from other companies and/or the media. Japanese companies received very limited information from environmental NGOs and FSC. This phenomenon may be explained by the fact that the NGO community in Japan is very weak (Schreurs 1996). Moreover, the retailers' movement for CFPs, such as by Home Depot, Lowes, IKEA, and the like, has been increasing in the USA but has not yet done so in Japan (Tissari 2001). This may also explain why more American companies
learned about forest certification from their clients and/or buyers’ groups while almost no Japanese companies were influenced by such groups.

The large majority of Japanese companies indicated that they chose FSC certification because it is an international certification scheme. This may be explained by the fact that no national certification scheme has been operative yet in Japan – the first national scheme, the Sustainable Green Ecosystem Forest Certification System (SGEC), is now under development, and FSC and PEFC are practically the only forest certification schemes currently available for Japan because they are international. Compared to Japanese companies, more than double the percentage of American companies indicated that they chose FSC certification because their clients requested FSC certified material. Many of them stated that their clients are Home Depot and/or Lowes. This may be indicate that the influences of those major retailers have a significant impact on the market of CFPs.

On average, companies in both countries thought factors such as customers’ desire, marketing advantages, and the company’s environmental policy had a greater impact on their decision to obtain CoC certification compared to other factors such as assistance or pressure from environmental NGOs and the government and avoiding increased regulation. This may
indicate that, at least in the USA and Japan, current CoC certificate holders made their decision to achieve CoC certification based on internal or voluntary reasons, e.g., as a means of obtaining market benefits from certification or as a reflection of company policy. External factors, such as NGO and governmental influences, were given relatively small consideration in their decisions. However, as pointed out by Donovan (1996) and Sasser (2003), NGO influences on forest certification are not negligible, especially in the USA. This difference between the perceived and actual role of NGOs may be explained by the fact that the impact of NGOs is more likely to be seen in the intelligence and information functions – NGOs promote certification by providing information not only to companies but also to consumers. While companies may not fully recognize this influence, it may have an unconscious or subtle influence on company policy. The role of NGOs is demonstrated by the fact that 24% of American companies learned about forest certification from environmental NGOs, which is the third highest percentage among sources of information. Moreover, close to 40% of American companies indicated that they first learned about forest certification from FSC, and some of them even mentioned that FSC’s recruiting team was very effective.

However, it is likely that environmental NGOs such as the World Wide Fund For Nature are in fact more active than FSC at informing companies
about forest certification because FSC does not have engage in many self-
promotional activities whereas WWF is actively engaged in promoting FSC
worldwide (WWF; Tissari 2001; Smouts 2002). It may be possible that
companies, which indicated that they learned about certification from FSC,
mistakenly believed that FSC itself, rather than WWF, was promoting FSC
certification. So again, most companies probably do not clearly recognize the
impact from environmental NGOs but NGOs’ function may be significant,
especially for promotion of forest certification.

4.6.4 Expectations and Perceived Benefits

The average level of expectation of earning price premiums from forest
certification ranked the lowest among factors leading companies to seek
certification. In both countries, expectations regarding price premiums were
significantly lower than most other factors such as new market accessibility,
company image improvement, and forest conservation. This suggests that
most of current CoC certificate holders are not highly expecting to yield price
premiums from forest certification, but rather that other benefits of
certification are more important to them. For American companies,
expanding access to new markets is the factor that, on average, is associated
with the highest expectations. Japanese companies’ levels of expectation
regarding new market access, company’s image, and forest conservation are
about equal.

In reality, a challenge exists to increase consumers’ willingness to pay for CFPs. Moreover, target markets are focused to environmentally sensitive markets. Therefore, in order to promote CFPs, it may be more effective to raise consumer awareness of CFPs broadly, resulting in more units being sold for the same prices as non-CFPs, rather than trying to enhance customers’ willingness to pay premiums for CFPs with the consequence that fewer units will be sold for higher prices.

Although many previous studies on the CFP market have focused on both final consumers and business customers’ willingness to pay, it may be more important to assess how to increase the amount of certified product units sold without price premiums in order to promote CoC certification. However, challenges may lie in dealing with different perspectives among forest management certificate holders, who tend to expect more price premium (Hayward 1999; Newsom 2003), and CoC certificate holders. This may be because achieving forest management certification tends to be more demanding for participants compared to CoC certification – direct and indirect costs for forest management certification tend to be more expensive, and criteria and indicators for forest management certification are more
complicated and extensive compared to standards for CoC certification. Moreover, forest owners have more constraints on increasing product amounts due to limited land area in contrast with manufacturers and distributors who may be able to augment the amount of products they deal in with relatively fewer expenses. In short, forest owners expect more price premiums for CFPs, and the distributors or manufacturers anticipate to market more product units without price premium. It will be another challenge for the CFP market how to trade off the difference in expectations between the two types of certification holders.

While both American and Japanese CoC certificate holders perceived a similar and relatively low impact from certification with regard to pricing and market share expansion for their CFPs, the average level of perceived benefits of two other factors – company image improvement and new market potential – differed significantly between the two countries. Japanese companies think that CoC certification has had a higher impact on these two factors compared to American companies. This difference may be attributed to the fact that, as seen in Chapter III, Japanese CoC companies are significantly larger than American companies in terms of their estimated sales and number of employees; further, larger companies may have more opportunities to advertise their CoC status on a large scale and utilize that
status as a market strategy, as compared to smaller companies with more limited budgets. However, it is also true that CoC certification has been around in the USA much longer than in Japan. The average low level of perceived benefits among American companies with respect to all four factors may indicate that CoC certification has so far provided fewer benefits to CoC certificate holders than originally expected.
References


Brack Duncan and Chantal Marijnissen (2002). "Controlling Imports of Illegal Timber." Royal Institute of International Affairs(RIIA) FERN.


CSA (2001). Plus 1163: Chain of Custody for Forest Products Originating from a Defined Forest Area Registered to CSA, Canadian Standard Association


FAO (1999). Chapter 7 Comparison of the European Market for High-Value Tropical Sawnwood, Veneer and Plywood with Those in North America and Japan. “Markets for High-Value Tropical Hardwoods in
Europe”. Rome, FAO.


FSC Forest Stewardship Council Website. 2003.


Hayward Jeffrey and Ilan Vertinsky (1999). "High Expectations, Unexpected


MTCC (2000). Requirements and Assessment Procedures for Chain-of-Custody Certification


PEFC Pan European Forest Certification Website. 2004.


ELECTRONIC GREEN JOURNAL 1(2).


Schwarzbauer Peter and Ewald Rametsteiner (2001). "The Impact of SFM-Certification on Forest Product Markets in Western European Analysis Using a Forest Sector Simulation Model." Forest Policy and
Economics 2(241-256).


Sector." Forest Policy and Economics Article in press.


Appendices

**Appendix 1**

**Products Classification**

<table>
<thead>
<tr>
<th>Products Group</th>
<th>Examples of Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roundwood</td>
<td>roundwood, sawlog</td>
</tr>
<tr>
<td>Lumber</td>
<td>lumber, sawlog, beams, gluelam, blanks, siding</td>
</tr>
<tr>
<td>Plywood and Veneer</td>
<td>veneer, plywood</td>
</tr>
<tr>
<td>MDF/Board</td>
<td>MDF, boards, panels, particle board, chipboard</td>
</tr>
<tr>
<td>Sawmill by-products</td>
<td>barks, sawdust, sawmill coproducts</td>
</tr>
<tr>
<td>Molding</td>
<td>mouling</td>
</tr>
<tr>
<td>Millwork</td>
<td>millwork</td>
</tr>
<tr>
<td>Distribution/Transportation</td>
<td>distribution, transportation (no specification on products)</td>
</tr>
<tr>
<td>Public constriction material</td>
<td>house, stair, ceiling, wall, trusses, birth panel, vanity unit,</td>
</tr>
<tr>
<td>Housing materials</td>
<td>wallcovering, light fixtures, construction material, house frams</td>
</tr>
<tr>
<td>Windows and doors</td>
<td>windows, doors, window parts, door parts</td>
</tr>
<tr>
<td>Flooring</td>
<td>flooring</td>
</tr>
<tr>
<td>Furniture</td>
<td>furniture, garden furniture, mirrors, lighting units, office faniture, window blinds,</td>
</tr>
<tr>
<td>Garden products</td>
<td>curtain poles, fire surrounds, turnings, handles, light switch surrounds, drawer knobs,</td>
</tr>
<tr>
<td>Household products</td>
<td>other furniture parts</td>
</tr>
<tr>
<td>Pulps and paper</td>
<td>kitchen/birthroom items, brushes, brooms, picture frames, hangers, chopsticks</td>
</tr>
<tr>
<td>Wood chips</td>
<td>woodchips</td>
</tr>
<tr>
<td>Firewood/charcoal</td>
<td>firewood, charcoal</td>
</tr>
<tr>
<td>Pallet/Box</td>
<td>pallet, vine boxes</td>
</tr>
<tr>
<td>Others (high value)</td>
<td>music instruments, coffins, buddhist altar, paddles, snowboard</td>
</tr>
<tr>
<td>Other (low value)</td>
<td>ladders, draught excluder, packing materials, wood powder, cosmetics,</td>
</tr>
<tr>
<td>NTFP</td>
<td>incense, venison</td>
</tr>
<tr>
<td>Non-identified</td>
<td>wooden products, N/A</td>
</tr>
</tbody>
</table>
# Appendix 2

## UK

<table>
<thead>
<tr>
<th>Issue year</th>
<th>Lumber</th>
<th>Roundwood</th>
<th>Plywood and Veneer</th>
<th>MDF/Board</th>
<th>Sawmill by-products</th>
<th>Moulding</th>
<th>Millwork</th>
<th>Distribution/Transportation</th>
<th>Construction</th>
<th>Housing materials</th>
<th>Windows and doors</th>
<th>Flooring</th>
<th>Furniture</th>
<th>Garden products</th>
<th>Household products</th>
<th>Pulp and paper</th>
<th>Wood chips</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>71</td>
<td>28</td>
<td>11</td>
<td>47</td>
<td>15</td>
<td>12</td>
<td>1</td>
<td>3</td>
<td>10</td>
<td>19</td>
<td>14</td>
<td>8</td>
<td>50</td>
<td>33</td>
<td></td>
<td></td>
<td>29</td>
</tr>
<tr>
<td>2002</td>
<td>65</td>
<td>24</td>
<td>11</td>
<td>41</td>
<td>15</td>
<td>11</td>
<td>1</td>
<td>3</td>
<td>10</td>
<td>18</td>
<td>13</td>
<td>6</td>
<td>43</td>
<td>29</td>
<td></td>
<td></td>
<td>27</td>
</tr>
<tr>
<td>2001</td>
<td>56</td>
<td>18</td>
<td>10</td>
<td>37</td>
<td>13</td>
<td>9</td>
<td>1</td>
<td>3</td>
<td>9</td>
<td>17</td>
<td>11</td>
<td>5</td>
<td>36</td>
<td>26</td>
<td>24</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>41</td>
<td>13</td>
<td>6</td>
<td>27</td>
<td>12</td>
<td>8</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>15</td>
<td>7</td>
<td>4</td>
<td>30</td>
<td>25</td>
<td>17</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>11</td>
<td>2</td>
<td>3</td>
<td>10</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>8</td>
<td>3</td>
<td>2</td>
<td>16</td>
<td>12</td>
<td>11</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

## USA

<table>
<thead>
<tr>
<th>Issue year</th>
<th>Lumber</th>
<th>Roundwood</th>
<th>Plywood and Veneer</th>
<th>MDF/Board</th>
<th>Sawmill by-products</th>
<th>Moulding</th>
<th>Millwork</th>
<th>Distribution/Transportation</th>
<th>Construction</th>
<th>Housing materials</th>
<th>Windows and doors</th>
<th>Flooring</th>
<th>Furniture</th>
<th>Garden products</th>
<th>Household products</th>
<th>Pulp and paper</th>
<th>Wood chips</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>142</td>
<td>14</td>
<td>80</td>
<td>33</td>
<td>12</td>
<td>51</td>
<td>38</td>
<td>0</td>
<td>1</td>
<td>25</td>
<td>54</td>
<td>45</td>
<td>78</td>
<td>38</td>
<td>11</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>112</td>
<td>10</td>
<td>62</td>
<td>25</td>
<td>9</td>
<td>40</td>
<td>31</td>
<td>0</td>
<td>1</td>
<td>17</td>
<td>44</td>
<td>35</td>
<td>59</td>
<td>30</td>
<td>9</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>90</td>
<td>10</td>
<td>46</td>
<td>14</td>
<td>7</td>
<td>30</td>
<td>21</td>
<td>0</td>
<td>1</td>
<td>10</td>
<td>30</td>
<td>25</td>
<td>40</td>
<td>23</td>
<td>7</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>49</td>
<td>9</td>
<td>31</td>
<td>7</td>
<td>5</td>
<td>11</td>
<td>10</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>20</td>
<td>17</td>
<td>26</td>
<td>13</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>22</td>
<td>2</td>
<td>14</td>
<td>2</td>
<td>1</td>
<td>6</td>
<td>8</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>8</td>
<td>11</td>
<td>15</td>
<td>9</td>
<td>4</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>11</td>
<td>1</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>10</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

## Japan

<table>
<thead>
<tr>
<th>Issue year</th>
<th>Lumber</th>
<th>Roundwood</th>
<th>Plywood and Veneer</th>
<th>MDF/Board</th>
<th>Sawmill by-products</th>
<th>Moulding</th>
<th>Millwork</th>
<th>Distribution/Transportation</th>
<th>Construction</th>
<th>Housing materials</th>
<th>Windows and doors</th>
<th>Flooring</th>
<th>Furniture</th>
<th>Garden products</th>
<th>Household products</th>
<th>Pulp and paper</th>
<th>Wood chips</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>22</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>12</td>
<td>3</td>
<td>1</td>
<td>9</td>
<td>0</td>
<td>12</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>14</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>7</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issue year</td>
<td>Wood chips</td>
<td>Firewood/ch</td>
<td>Pallet/Box</td>
<td>Others (high value)</td>
<td>Others (law value)</td>
<td>NTFP</td>
<td>Non-identified</td>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>------------</td>
<td>-------------</td>
<td>------------</td>
<td>--------------------</td>
<td>-------------------</td>
<td>------</td>
<td>----------------</td>
<td>-------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>0</td>
<td>8</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>2401</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>0</td>
<td>7</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>2359</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>0</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>2307</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2236</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2096</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2024</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>9</td>
<td>3</td>
<td>11</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>17</td>
<td>2689</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>7</td>
<td>3</td>
<td>8</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>13</td>
<td>2531</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>5</td>
<td>2</td>
<td>7</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>11</td>
<td>2387</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>7</td>
<td>2227</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>2113</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2064</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2024</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2017</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2006</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Issue year</th>
<th>Wood chips</th>
<th>Firewood/ch</th>
<th>Pallet/Box</th>
<th>Others (high value)</th>
<th>Others (law value)</th>
<th>NTFP</th>
<th>Non-identified</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>9</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>2151</td>
</tr>
<tr>
<td>2002</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2060</td>
</tr>
<tr>
<td>2001</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2021</td>
</tr>
<tr>
<td>2000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2006</td>
</tr>
<tr>
<td>1999</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Brazil

<table>
<thead>
<tr>
<th>Issue year</th>
<th>Lumber</th>
<th>roundwood</th>
<th>Plywood and Veneer</th>
<th>MDF/Board</th>
<th>Sawmill by-products</th>
<th>Moulding</th>
<th>Millwork</th>
<th>Distribution/Transportation</th>
<th>Construction</th>
<th>Housing materials</th>
<th>Windows and doors</th>
<th>Flooring</th>
<th>Furniture</th>
<th>Garden products</th>
<th>Household products</th>
<th>Pulp and paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>55</td>
<td>4</td>
<td>19</td>
<td>18</td>
<td>2</td>
<td>10</td>
<td>18</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>12</td>
<td>6</td>
<td>27</td>
<td>6</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>2002</td>
<td>48</td>
<td>4</td>
<td>14</td>
<td>14</td>
<td>1</td>
<td>8</td>
<td>14</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>12</td>
<td>4</td>
<td>22</td>
<td>5</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>2001</td>
<td>26</td>
<td>3</td>
<td>8</td>
<td>12</td>
<td>1</td>
<td>7</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>4</td>
<td>18</td>
<td>5</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>2000</td>
<td>13</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>11</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>1999</td>
<td>6</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>1998</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### South Africa

<table>
<thead>
<tr>
<th>Issue year</th>
<th>Lumber</th>
<th>roundwood</th>
<th>Plywood and Veneer</th>
<th>MDF/Board</th>
<th>Sawmill by-products</th>
<th>Moulding</th>
<th>Millwork</th>
<th>Distribution/Transportation</th>
<th>Construction</th>
<th>Housing materials</th>
<th>Windows and doors</th>
<th>Flooring</th>
<th>Furniture</th>
<th>Garden products</th>
<th>Household products</th>
<th>Pulp and paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>49</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>19</td>
<td>4</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>2002</td>
<td>43</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>17</td>
<td>3</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>2001</td>
<td>37</td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>12</td>
<td>2</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>2000</td>
<td>22</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>9</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>1999</td>
<td>14</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>1998</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>1997</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Brazil Continue

<table>
<thead>
<tr>
<th>Issue year</th>
<th>Wood chips</th>
<th>Firewood/charcoal</th>
<th>Pallet/Box</th>
<th>Others (high value)</th>
<th>Others (law value)</th>
<th>NTFP</th>
<th>Non-identified</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>2199</td>
</tr>
<tr>
<td>2002</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2165</td>
</tr>
<tr>
<td>2001</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2114</td>
</tr>
<tr>
<td>2000</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2058</td>
</tr>
<tr>
<td>1999</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2025</td>
</tr>
<tr>
<td>1998</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2007</td>
</tr>
</tbody>
</table>

## South Africa

<table>
<thead>
<tr>
<th>Issue year</th>
<th>Wood chips</th>
<th>Firewood/charcoal</th>
<th>Pallet/Box</th>
<th>Others (high value)</th>
<th>Others (law value)</th>
<th>NTFP</th>
<th>Non-identified</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>3</td>
<td>13</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>5</td>
<td>2143</td>
</tr>
<tr>
<td>2002</td>
<td>2</td>
<td>12</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>2119</td>
</tr>
<tr>
<td>2001</td>
<td>0</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2093</td>
</tr>
<tr>
<td>2000</td>
<td>0</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2061</td>
</tr>
<tr>
<td>1999</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>2041</td>
</tr>
<tr>
<td>1998</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2015</td>
</tr>
<tr>
<td>1997</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1998</td>
</tr>
</tbody>
</table>

1996
1995
1994
1993
Appendix 3

1) Cover Letter of 1st Email survey –English version

January 29, 2004

Dear Sir/Madam:

My name is Sae Makino. I am a graduate student in the Department of Forestry at North Carolina State University. I obtained your email address from the FSC data base in order to conduct a questionnaire survey on forest certification, focusing on CoC certificate holders. The purposes of this survey are: to assess your motivations, and perspectives towards forest certification and to help promote forest certification among producers, distributors, manufacturers, etc. of forest products, like yourselves.

The questionnaire consists of only 15 questions; most of the questions are in check box or drop-down list format. It will take only about 15 minutes or less to complete. I would greatly appreciate if you could take a little time to participate in my survey.

Instructions:
1. Download the attached file to this email.
2. Open the file and answer the questions by clicking a box, choosing correct answer from the drop-down list (the list will show up if you click the box), or typing your answer in the space provided.
3. SAVE the file.
4. Reply to this email or email me at smakino@unity.ncsu.edu with the attached file that you saved.

I thank you in advance for your contribution to my survey. In addition, I would appreciate your comments and feedback on this survey.

Sae Makino
Email: smakino@unity.ncsu.edu
Tel: 919-271-8905/919-512-9431
Department of Forestry,
College of Natural Resources,
North Carolina State University,
Raleigh, NC 27695-8002, USA
2) Cover Letter of 1st Email survey – Japanese version

拝啓

貴社ますますご清栄のこととお喜び申し上げます。

突然のメールで大変失礼いたしますが、私は、米国ノース・カロライナ州立大学森林学部で修士課程を専攻している牧野佐絵子と申します。貴社のメールアドレスを FSC のデータベースから入手して、メールさせて頂きました。

私は、現在、FSC の生産物流認証（CoC 認証）を保持する会社・団体を対象に森林認証制度に関するアンケート調査を実施しています。この調査の目的は、森林認証制度の取得に当たり CoC ホルダーの動機や目的、期待などについて実態調査を行い、今後の森林認証制度の基礎データを収集し、認証制度の推進に寄与することです。この調査は、日本およびアメリカ合衆国の CoC ホルダーを対象に実施しています。

アンケートは 15 間の質問から構成されており、そのほとんどは選択式です。
アンケートの回答方法は、以下のとおりです。
5. 添付ファイル(MS/Word)をダウンロードしてください
6. ファイルを開き、次のように、アンケートに回答してください
  • チェック・ボックス：当てはまる項目のボックスをクリック
  • ドロップ・ダウン式：右クリックすると表示されるリストの中から当てはまるものを選択
  • テキスト：スペースに記述
7. 終了後、ファイルを保存してください
8. 保存されたファイルを添付の上、このメールに返信するか smakino@unity.ncsu.edu まで、送信してください

なお、御意見、御感想、御質問などがございましたら、私の E-mail 等へご連絡いただければ幸いです。

お忙しい中、大変恐縮ですが、ご協力方よろしくお願い致します。

1月29日，2004

Sae Makino（牧野佐絵子）
Email: smakino@unity.ncsu.edu
Tel: 919-271-8905/919-512-9431
Department of Forestry,
College of Natural Resources,
North Carolina State University,
Raleigh, NC 27695-8002, USA
3) Cover Letter of 2nd on-line survey – English version

February 00, 2004

Dear Sir/Madam:

I am a graduate student in the Department of Forestry, North Carolina State University. Recently, I asked you to participate in a survey on FSC CoC holders. I have not yet heard back from you, so I am hoping that you could please take a few minutes from your busy schedule to take part in the **ON-LINE** survey on the same issue.

The survey questionnaire consists of only 15 questions, most of which are in check box or drop-down list format. It should take you no more than 15 minutes to complete. The link to the questionnaire is:

http://www4.ncsu.edu/~smakino/

The purposes of this survey are: to assess your motivations and perspectives towards forest certification and to help promote forest certification among producers, distributors, manufacturers, etc. of forest products, like yourselves. This survey is entirely academic in nature and will not be used for commercial purposes. I would greatly appreciate your participating in this project and thank you in advance for doing so.

If you received this email by mistake or if you sent me back your answer already, please ignore it.

Sae Makino
Email: smakino@unity.ncsu.edu
Tel: 919-271-8905/919-512-9431
Department of Forestry,
College of Natural Resources,
North Carolina State University,
Raleigh, NC 27695-8002, USA
4) Cover Letter of 2nd on-line survey – Japanese version

拝啓

貴社ますますご清栄のこととお喜び申し上げます。

先般、FSC森林認証制度のCoC（生産物流認証）認証に関する調査へのご協力を依頼させて頂きましたが、貴社からご返答いただけなかったためオン・ライン上でのアンケートに変えて再度ご協力をお願いさせて頂きたく思います。

年度末につき特にご多忙とは存じますが、森林認証制度の推進のためにも是非ご協力をお願いいたします。ご協力いただけるのであれば、上記のホーム・ページをクリックして頂き、その後、日本語を選択してください。アンケートに回答後、送信ボタンをクリックして頂ければアンケートは終了です。アンケートにかかる所要時間は10～15分ほどです。

この調査の目的は、森林認証制度の取得に当たりCoCホルダーの動機や目的、期待などに関する実態調査を実施し基礎データを収集して、今後の森林認証制度の推進に国際的に寄与することです。また、アンケートの集計結果は学術・研究利用以外の目的には一切使用致しません。貴社名の御記入においても任意です。

お忙しい中、大変恐縮ですが何卒ご協力の程をよろしくお願い申し上げます。

敬具

2004年2月21日

Sae Makino (牧野佐絵子)
Email: smakino@unity.ncsu.edu
Tel: 919-271-8905/919-512-9431
Department of Forestry,
College of Natural Resources,
North Carolina State University,
Raleigh, NC 27695-8002, USA
5) Index page of on-line survey

Thank you for participating in the Survey on FSC Forest Certification

If you have any questions and suggestions, please contact me at:

Department of Forestry,
College of Natural Resources,
North Carolina State University,
Raleigh, NC 27695-8002, USA
Sae Makino (牧野 佐絵)
Email: smakino@unity.ncsu.edu

Please click here for English / 日本語はここをクリックしてください
6) Questionnaire – English version

Questionnaire on Forest Certification

1. What type of FSC (Forest Stewardship Council) certification does your company hold?
   - Forest management certification
   - Chain-of-custody certification
   - None of the above

2. Does your company own forests? □ Yes □ No
   If so, where? □ Europe □ Asia □ North America □ South America □ Oceania □ Africa

3. Please list the products that you currently process under chain-of-custody certification:
   (________)  

4. When did your company achieve FSC chain-of-custody certification? Jan (month) of 93(year)

5. Is your FSC chain-of-custody certification current? □ Yes □ No

6. Has your company obtained certification from any organization other than FSC?  
   □ Yes □ No
   If YES, which organization: (________)  

7. How strongly did the following factors affect your company’s decision to obtain chain-of-custody certification? Use a five-point scale, where from 1 = “no impact at all,” 3 = “neutral” to 5 = “strong impact.”
   a. Your customers’ desire for environmentally friendly products
   b. Other marketing advantages (price premium, market expansion, etc)
   c. Company’s environmental policy
   d. Assistance or pressure from environmental non-governmental organizations
   e. Assistance or pressure from government
   f. Avoiding increased regulation
   g. Others -- please specify: (________)  

8. How did you personally first learn about forest certification? (check all that apply)
   □ From other companies that are certified
   □ From environmental non-governmental organizations
   □ From buyers’ group
   □ From your supplier of wood
   □ From certifiers/FSC
From the media
□ Others – please specify: (__________)

9. How strongly does your company expect the following results from certification? Use a five-point scale, where from 1 = “does not expect at all,” 3 = “neutral” to 5 = “strongly expects.”
   a. □ Earn a price premium
   b. □ Maintain current market share
   c. □ Expand access to new markets
   d. □ Improve company image
   e. □ Conserve forest resources
   f. □ Others – please specify (__________)

10. Why did your company choose FSC over other certification program(s)? (check all that apply)
   a. □ Because FSC is the most comprehensive certification scheme.
   b. □ Because FSC is the most widely recognized certification scheme.
   c. □ Because FSC is the most credible certification scheme.
   d. □ Because FSC is an international scheme.
   e. □ Because FSC was the only certification scheme available at that time
   f. □ Others – please specify (__________)

11. What is your source of certified wood? (check all that apply)
   a. □ Mostly from domestic forests
   b. □ Mostly imported from temperate or boreal forests
   c. □ Mostly imported from native tropical forests
   d. □ Mostly imported from forest plantations in the tropics
   e. □ Others – please specify (__________)

12. Do you sell any certified forest products with the FSC logo?  □ Yes  □ No

13. Where are your certified products sold?
   a. □ Only domestic markets
   b. □ Only exported to  □ Europe □ Asia □ North America □ Others
   c. □ Both domestic markets and exported to  □ Europe □ Asia
      □ North America □ Others

14. What impact has forest certification already had on the following? Please consider your most important certified products and customer groups to date. Use a five-point scale, where from 1 = “no impact at all,” 3 = “neutral” to 5 = “strong impact.”
   a. □ Advertising and communication campaigns
   b. □ Pricing
   c. □ Market share expansion
   d. □ New markets entered
15. Please indicate which of the following would cause your company to drop FSC chain of custody certification. Your company definitely would NOT maintain FSC certification in the future IF: (check all that apply)

- [X] No price premium is realized
- [ ] Demand for certified products does not increase
- [ ] There is another forest certification program that is more advantageous to your company
- [ ] Costs of certification do not decrease
- [ ] Other -- please specify: (_________)

125
7) Questionnaire – Japanese version

FSC 森林認証制度に関するアンケート

1. 貴社が保持する FSC (Forest Stewardship Council) の森林認証は以下のどれですか？
   - 森林管理認証 (Forest management certification)
   - 生産物流認証 (Chain-of-custody certification)
   - 上記のいずれでもない

2. 貴社は森林を所有していますか？  □ はい  □ いいえ
   もし所有しているのであれば、以下のどの地域にありますか？
   - 北アメリカ  □  南アメリカ  □  アジア  □  ヨーロッパ  □  オセアニア  □  アフリカ

3. 貴社が生産物流認証（CoC）のもとで取り扱っている製品を述べてください。
   （_________）

4. 貴社は FSC の CoC 認証をいつ取得されましたか？ 1 月 93 年

5. 貴社の CoC 認証は、現在の時点でも有効ですか？  □ はい  □ いいえ

6. 貴社は、FSC 以外の森林認証制度を保持していますか？  □ はい  □ いいえ
   もし保持しているのであれば、利用している認証制度の名前を挙げてください。
   （_________）

7. 貴社が CoC 認証の取得を決定するに当たり、以下の要素はどのくらい重要でしたか？
   (5 段階評価：1=全く重要ではない、2=重要ではない、3=どちらでもない、4=重要
   5=とても重要)
   h. 顧客からの環境に優しい製品に対する要望
   i. 市場利益 (プレミア価格の付加、市場の拡大、維持など)
   j. 貴社の環境保護にかかわる方針
   k. 環境 NGO からの支援またはプレッシャー
   l. 政府からの支援またはプレッシャー
   m. 環境に関する規制を避けるため
   n. その他 – 具体的に述べてください：（_________）

8. 認証制度を、どのように知りましたか？（当てはまる項目を全て選んで下さい）
   □ 認証された他の会社・団体から
環境 NGO から
消費者グループから
貴社の木材供給者から
FSC から
メディアから
その他 –具体的に述べてください: (__________)

9. 貴社は認証制度から以下の項目をどのくらい期待していますか？
(5段階評価: 1=全く期待していない、2=期待していない、3=どちらでもない、4=期待している 5=とても期待している)

g. 1 プレミア価格を得る
h. 1 現在の市場を保持する
i. 1 新しい市場の開拓する
j. 1 会社のイメージアップ
k. 1 森林資源の保護
l. 1 その他 –具体的に述べてください: (__________)

10. 貴社が FSC を選んだ理由を教えてください。（当てはまる項目を全て選んで下さい）

☐ FSC が最も総合的な認証制度であるため
☐ FSC が最も知られている認証制度であるため
☐ FSC が最も信頼されている認証制度であるため
☐ FSC が国際的な認証制度であるため
☐ FSC が利用可能な唯一の認証制度であったため
☐ その他 –具体的に述べてください: (__________)

11. 貴社の認証材の生産地は主にどこですか？（当てはまる項目を全て選んで下さい）

☐ 主に国産材
☐ 主に温帯林または寒帯林から
☐ 主に熱帯の自然林から
☐ 主に熱帯の植林地から
☐ その他 –具体的に述べてください: (__________)

12. FSC のロゴのついた製品を販売していますか？

☐ はい ☐ いいえ

13. 貴社の認証製品はどの地域の市場で取り扱われていますか？

☐ 国内市場のみ
☐ 輸出のみ（地域：☐ 北アメリカ ☐ アジア ☐ ヨーロッパ
☐ その他）
☐ 国内市場および輸出（地域：☐ 北アメリカ ☐ アジア
☐ ヨーロッパ
☐ その他）
14. 以下の要素について、認証制度が貴社にもたらした効果について教えてください。
現在、最も重要な認証製品と消費者グループを対象に評価して下さい。（当てはまる項目を全て選んで下さい）
（5段階評価：1=全く影響なし、2=影響なし、3=どちらでもない、4=影響あり、5=とても影響あり）
e. 広告効果とキャンペーン
f. 価格の上昇（プレミア価格の付加）
g. 市場シェアの向上
h. 新しい市場の開拓

15. 今後、貴社が FSC の CoC 認証の保持を取りやめる原因となり得るものはどれですか？（当てはまる項目を全て選んで下さい）

☐ プレミア価格が期待できない
☐ 認証製品に対する需要が増加しない
☐ 貴社にとってより有益な他の認証制度がある
☐ 認証にかかわるコストが減少しない
☐ その他 -具体的に述べてください: (__________)

ご協力ありがとうございました。
Appendix 4

Table Correlation between variables

<table>
<thead>
<tr>
<th>Questions</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factors affected company's decision</td>
<td>Customer Market Policy NGO Government Regulation</td>
</tr>
<tr>
<td>Customers' desire</td>
<td>1</td>
</tr>
<tr>
<td>Other marketing advantages</td>
<td>0.06 1</td>
</tr>
<tr>
<td>Company’s environmental policy</td>
<td>-0.05 0.24 1</td>
</tr>
<tr>
<td>Environmental NGO</td>
<td>0.04 0.20 0.12 1</td>
</tr>
<tr>
<td>Government</td>
<td>0.08 0.26 0.09 0.60 1</td>
</tr>
<tr>
<td>Avoiding increased regulation</td>
<td>-0.11 0.11 0.09 0.53 0.66 1</td>
</tr>
<tr>
<td>Price premium</td>
<td>-0.05 0.36 0.22 0.11 0.32 0.14 1</td>
</tr>
<tr>
<td>Maintain current market share</td>
<td>0.32 0.12 0.06 0.16 0.22 0.11 0.32 1</td>
</tr>
<tr>
<td>Expand access to new markets</td>
<td>0.00 0.34 0.39 -0.05 0.12 0.08 0.48 0.15 1</td>
</tr>
<tr>
<td>Improve company image</td>
<td>0.01 0.34 0.43 0.08 0.12 0.10 0.42 0.40 0.55 1</td>
</tr>
<tr>
<td>Conserve forest resources</td>
<td>-0.07 0.24 0.53 0.01 0.10 0.16 0.28 0.05 0.43 0.47 1</td>
</tr>
<tr>
<td>Advertising and communication campaigns</td>
<td>0.38 0.51 0.17 0.18 0.09 0.36 0.21 0.41 0.46 0.33 1</td>
</tr>
<tr>
<td>Pricing</td>
<td>0.11 0.32 0.03 0.24 0.41 0.14 0.38 0.28 0.19 0.13 0.13 0.15 1</td>
</tr>
<tr>
<td>Market share expansion</td>
<td>0.16 0.21 0.21 0.11 0.23 0.04 0.19 0.27 0.41 0.30 0.20 0.37 0.33 1</td>
</tr>
<tr>
<td>New markets entered</td>
<td>0.03 0.24 0.28 0.16 0.23 0.07 0.34 0.23 0.45 0.39 0.35 0.42 0.31 0.59 1</td>
</tr>
<tr>
<td>Issue date</td>
<td>-0.35 -0.06 -0.02 -0.09 -0.14 0.05 -0.10 -0.14 -0.10 -0.11 -0.03 -0.07 -0.07 -0.15 -0.10</td>
</tr>
</tbody>
</table>