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# **Forest Certification and Social Change: A Comprehensive Study in Japan**

**Akira Kajiwara**

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## **Abstract**

This book investigates the social dynamics involved in the adoption of a borrowed social instrument into a society where it did not originate. It examines the introduction of forest certification to Japan coincident with the current paradigm shift happening in Japanese society. The study attempts to discover what effects the paradigm shift is having on the forest sector and to obtain a better understanding of the relationship between the paradigm shift and the movement to introduce FSC certification to Japan. The main goal of the research is to identify the reasons why organizations and individuals in the Japanese forest sector are supporting the adoption of FSC certification and to discover whether there are rational reasons underlying its acceptance.

The author applies an interdisciplinary approach, drawing information from the fields of sociology, social psychology, economics, finance, and forest resources. He provides an explanation of the events leading up to the serious economic decline in the forest sector, gives evidence for the paradigm shift, and describes the function of forest certification. Both qualitative and quantitative methods are used in the research. The qualitative results provide insights into the various reasons for support or non-support for FSC certification and the possible outcomes of the movement. Three constructs were developed from the preliminary investigation and formed the hypotheses using loss of traditional assurances due to the paradigm shift as the mediating construct between recognition of the paradigm shift and support for FSC certification. The results of the quantitative survey support the hypothesis showing that loss of assurance is a latent motivating factor for many who choose to support FSC certification and fully mediates recognition of the paradigm shift and support or non-support of FSC certification. Investigation of the chain-of-custody that will develop as a result of the adoption of FSC certification is recommended as important future research for the Japanese forest sector.



## Introduction

*What happens when a common set of rules is imposed on two different societies? Although the rules are the same, the enforcement mechanisms, the way enforcement occurs, the norms of behavior, and the subjective models of the actors are not. Hence, both the real incentive structures and the perceived consequences of policies will differ as well. Thus, a common set of fundamental changes in relative prices or the common imposition of a set of rules will lead to widely divergent outcomes in societies with different institutional arrangements (North, 1990, 101).*

Over the last decade Japan's industries have experienced difficult economic times. The serious financial difficulties of the late 1990s forced Japan's business community to re-evaluate its traditional systems of business organization. As a result business relationships began moving away from the traditional long-term interpersonal system of transactions to the more flexible short-term market-based transactions which have been dominant in the United States for several decades. These are significant changes, far reaching enough to be described as a major paradigm shift by some scholars and politicians. The adjustments are difficult ones, especially for the more traditional and conservative actors in the supply, manufacturing, and trading sectors, but the change is happening and Japan's industries and businesses which survived are showing signs of recovery. Japan's domestic forest industry has not been one of these. There have been no signs of recovery, and most observers are saying that the forest industry cannot survive in today's economy if it holds to the traditional systems. People associated with the forest industry have not been optimistic about recovery, and initiatives to revitalize local forest sector economies have been few and many only marginally successful.

In 1996 coincident with the continued downturn in the forestry sector, WWF Japan introduced FSC certification to the forest industry. Several forest sector actors criticized the introduction because there seemed to be no logical rationale for the Japanese forest industry to be interested in adopting forest product certification comparable to the rationale for certification in other countries. Also, the concept of certification is historically unfamiliar in Japanese society. In spite of these conditions, FSC certification has found substantial support in Japan.

A comparative analysis of the Japanese forest sector and the forest sectors in other timber producing countries begs many questions about why the introduction of FSC certification gained the degree of acceptance it is enjoying currently in Japan. Japan's forest industry's problems are very different from those

in the countries where forest certification originated. Those countries are either timber exporting countries with successful timber farming businesses or countries with active advocates for better forest management and populations demanding improvements in the environment. Unlike those countries, Japan is not a forest products exporting nation, and its own domestic timber market is depressed since it cannot compete with imported timber. There has been little environmental concern for forest health and its impact on the environment, and there are few NGOs with high enough profile to generate public support for a social tool which is intended to create better management of forest lands. The main problem of Japan's forest sector is that it is economically depressed, and this economic situation is getting worse due to the demands of an increasingly freer market. These problems are unlike the problems of countries where over-harvesting and the resulting ecological damage brought about the initiation of forest products certification as an attempt to solve these problems. Japan's forest sector has many problems, but their problems are different from the problems which caused the initiation of certification of forest products in other countries.

This book presents the findings of an investigation into the social dynamics of the FSC certification movement to implement a borrowed social instrument into Japan, a society where certification is unfamiliar and little understood. A primary goal of the study, which is the basis for this book, was to determine what effects the current paradigm shift in Japanese society is having on the forest sector of Japan and to obtain understanding of the relationship between this paradigm shift and the movement to introduce FSC certification in Japan. In order to provide background information critical to understanding this complex situation, I have included discussions of certification, forest management, the collectivist nature of Japanese society, the current paradigm shift in Japan, and a brief history of how the Japanese forest sector came to be in its current state. Insights gleaned from the works of sociologists, economists, social psychologists, and anthropologists attempt to provide theoretical explanations for the phenomenon. The survey which formed the basis of the empirical part of the study measured forest sector people's attitudes related to the paradigm shift, and the analysis related their beliefs to their choices of supporting or not supporting the movement. This book presents questions raised in the study concerning the influence that the introduction of FSC certification may have on the forest sector and especially the small timber farmers in Japan.

# Chapter 1

## Certification

FSC certification of wood products was created as a tool to address the need for improved forest health world-wide. It has achieved notable success in Europe and the Americas and has been introduced into countries which export to countries where wood product certification is recognized. The concept of certification originated in the west and is not widely understood in Japan.

### Definition of Certification

*Certify* — to attest especially authoritatively or formally, to confirm or attest often by a document under hand or seal as being true, meeting a standard, or being as represented.

*Certification* — the act of certifying, the state of being certified, a certified statement. (Webster's 3<sup>rd</sup> New International Dictionary)

As can be seen by reading Webster's definition, the term "certify" relates to authenticity, truth, and/or quality. More generally, certification, in all of its usages, refers to an attempt to guarantee that something is what it purports to be. The term certification is often used to refer to a social institution which has evolved in western societies to regulate commercial activities and to increase consumer confidence through providing trustworthy and accurate information about products and services. Certification schemes have been devised to assure consumers that they are getting products and services which are true to the description of the producer or provider. The credibility of a certification scheme depends on the reputation and credentials of the organization authorizing the certification. How seriously a certification is taken by the public depends on the public's appraisal of the certifying organization. When a person forms an opinion about the trustworthiness of a certification program, important attributes of the scheme that effect the making of that opinion are the structure of the certification system, the nature of the evaluative standards, and rigor used by the certifying body in applying those standards.

One important element in appraising the structure of a certification scheme is identifying the relationship between the authority responsible for the scheme and the applicant. A certification scheme may be either first, second, or third-party certification in terms of the relation between the assesses, assessors, and certifiers. *First-party certification* is an organization's internal assessment of its own practice. *Second-party certification* is an assessment by a customer or

outside trade association. *Third-party certification* involves an assessment by a third-party, that is generally expected to be neutral, based in a set of accepted standards (Hansen and Juslin 1999).

For Hansen and Juslin (1999) when discussing forest certification, the term “certification” means a procedure in which a third party provides written assurances that a product, process, or service complies with specified requirements (Hansen and Juslin 1999). In this narrower definition, certification relies on third-party participation for its effectiveness. A third-party as verification authority, usually through an accredited auditor, evaluates the product or service of the first party by a set of standards. If the first party, such as a manufacturer, satisfies the auditor with proof of ability to perform by those standards, the third party certifies for the second party, such as general consumers, that the first party can achieve those standards. For many people, as with Hansen and Juslin, in appraising the credibility of a certification scheme, only third-party verification is considered to be a “real” certification because of the impartiality of the third party.

A second important element in understanding certification schemes is identifying whether the scheme is system or performance-based. Performance-based certification schemes rely on universally applicable standards established by a third party. The organization responsible for a performance-based certification scheme establishes the standards and uses them to evaluate whether a business enterprise meets specified operational performance measures. Monitoring is carried out through periodic review to verify whether the specified performances are being met and maintained. For performance-based certification, it is essential that minimum thresholds of performance be established. Performance-based certification schemes offer a critical representation of physical operational conditions and outcomes of the operation. System-based certification schemes (also called process-based certification schemes) are used to evaluate whether management systems are in place that allow business owners to achieve and review target goals they have set. System-based standards are established by the business itself rather than by a third party. System-based standards focus on process rather than outcome. In system-based certification, two organizations carrying out similar activities but having different performances, may both comply with the requirements of the standards.

Controversy exists as to which type of scheme is more effective for improving existing conditions in various venues. For example, environmental groups tend to criticize system-based schemes because the standards that each business is evaluated by are the standards created by that business. These critics believe that to bring about positive environmental changes, performance-based systems

are more effective because they require universally applied standards which are not under the control of the business seeking certification.

In all circumstances regarding certification, it is important to consider what is being certified. Since the term “certification” is so broadly used, in many situations it is not clear to consumers what the certification applies to. For many consumers, certification is understood to mean that a specific product or service has been evaluated and meets certain standards. This, however, is often not the case. Most often, certification associated with a product or service does not mean that that specific product or service was evaluated and certified. Instead, it means that the producers’ operations were evaluated and met the standards set forth by the certifying body. Therefore, in a narrower sense, certification is the acknowledgement that persons and organizations have the ability to produce a product or service by standards that a third party has set and does not imply that the actual products or services have each been evaluated.

It is common today to hear that a cut of beef is certified as being organically produced. This information often comes to the consumer through a label on the beef package or a sign in the butcher’s case. The label implies to the uneducated customer that the cut of beef is itself somehow inspected and certified. However, product certification does not mean that each product is inspected. In most certification schemes, it is the people and organizational systems which are evaluated against standards and acknowledged as capable of producing beef meeting the expectations set forth by the certifying body.

For example, The Dakota Beef Company sells beef as “100% organically grown.” This company has exclusive rights to the production of 40 North and South Dakota farmers. Dakota Beef also works with the Farm Verified Organic Program (FVO) which certifies Dakota’s farmers. Dakota can use the label of “100% organically grown” on the beef their farmers produce because FVO auditors evaluate all Dakota operations, from breeding programs to the retail market, to ensure that 100% organic beef is the outcome. All feed that is purchased by Dakota farmers passes the standards of having no additives and having been produced without chemicals (Dakota Beef Company 2002). These rigorous standards are adhered to by all involved in the production of Dakota beef and periodic inspections by FVO staff insure that these practices are being maintained. Product certification here means that the performance-based, third-party certification scheme evaluates outcomes by inspecting each part of the production process on the ground. It does not mean that each product is inspected by the certifying authority. It is the people and systems of all of Dakota’s operations which are evaluated and certified, not the final product. The company produces marketing material which explains in detail the structure of the certification scheme,

describes the high standards of FVO, and emphasizes the rigorous inspections of their production operations by FVO. This company has clearly realized how to use their organic certification as an effective marketing tool by paying attention to the elements which influence consumers in their decisions about the trustworthiness of a certification scheme.

## **Effectiveness of Certification**

A central issue related to the effectiveness of certification schemes concerns the leverage or power to compel that a scheme can exercise. An example to illustrate this issue and other characteristics of certification schemes is the comparison of certification in the accounting industry, which has been in place for more than 80 years, with certification currently being developed in the forestry sector. In certification in the field of accounting, the Securities and Exchange Commission (SEC) assigns authority to the American Institute of Certified Public Accountants (AICPA) to be the certifier for the profession of accounting in the United States. AICPA sets qualifications for accountants as well as standards and policies for auditing. Through reviewing and evaluating the results of examinations of applicants, AICPA qualifies the accountants as Certified Public Accountants, certified in their knowledge, skills, and abilities if they demonstrate the required level of competence (American Institute of Certified Public Accountants 2002). A CPA provides a client company with his or her audit of the client created financial statements which the client will later disclose to the company investors (public). Financial information is a product which the client company produces for the investors and the auditor's opinion on the financial information can be seen as a by-product attached to the primary product written by the CPA. Investors will make their financial decisions based on the primary product (financial statements) as well as the by-product or opinion of the CPA. The reason that investors put trust in the financial statement is because of the professional opinion statement of the CPA which is based on federal government securities and exchange laws and regulations.

In contrast to the field of accounting, the field of forestry has various certification schemes vying for center stage. In most cases of forest products certification, a final authority, such as the Forest Stewardship Council (FSC), accredits other organizations as independent certification auditors in the interpretation and application of FSC standards. Examples of organizations that are approved by FSC are SmartWood, Scientific Certification Systems, and SGS QUALIFOR (Forest Stewardship Council 2003). These certification bodies conduct assessments of forest operations at the request of landowners and forest managers

(forest management certification) as well as mill and other facility owners (chain-of-custody certification). If the forest operations are found to be in conformance with FSC standards, a certificate is issued, enabling the recipients to bring product to market as “certified wood”, and to use the FSC trademark logo (WWF Japan 2002). Along with this logo recognizing the certification of the producers, consumers associate a “greenness” factor. By purchasing the FSC certified item the consumer is supporting a “green” company. The company producing the FSC certified product will often provide marketing information which explains how they are contributing to responsibly managed forests. The confidence the consumer has in the label of the certifier can influence their decision about which product to buy. Information on “greenness” is a by-product which is represented with the logo and is backed up solely by the reputation of the FSC rather than in other ways such as by laws and regulations.

The similarity seen in these examples from the field of accounting and the field of forestry is that certification is directly associated with people who are the members of a certification scheme. Certification is actually issued on the people and organizations even though consumers may see certification as the certification of products and services themselves. However, a difference between AICPA certification in the accounting industry and FSC certification in the forest industry illustrates an important characteristic of FSC certification which should be considered in the assessment of the introduction of the FSC certification scheme to Japan. In the accounting field, certification is based on legal regulations with compelling power. FSC forest certification does not have any compelling legal power to rely on for leverage. It has only its international reputation to compel businesses and people to join and cooperate in reaching the goals it establishes. The introduction of accounting certification to Japan came with legal power. It was successfully installed even though it has not operated exactly like it functions in the USA. For Japanese forestry sector people who have little experience with the institution of certification, the lack of legal authority in FSC certification may prevent them from taking it seriously.

### **Forest Certification Schemes Available in Japan**

The following discussion presents descriptions of the two international forest/timber certification schemes which are currently available in Japan. These two examples constitute the more important benchmarks and best known of the present day certification schemes worldwide. Soares (1999) stated that there were at that time a total of more than 90 forest/timber certification initiatives under way worldwide. This number continues to grow because many countries are creating

domestic and regional certification schemes to satisfy local industry and landowners. In Japan, forest management and engineering professionals established an organization, Sustainable Green Ecosystem Council (SGES), in June 2003, which was expected to create and operate its own forest certification scheme. However, SGES had not started to operate its certification scheme as of July 2003. Japan, so far, has only seen actual certifications completed under the Forest Stewardship Council (FSC) and International Organization for Standardization (ISO) schemes.

### ***Forest Stewardship Council (FSC)***

FSC certification is an international, third-party, performance-based, forest management and chain-of-custody certification scheme implemented by the FSC. The FSC is a non-profit, non-governmental organization founded in 1993 in Toronto, Canada, and now has its headquarters in Bonn, Germany. The concept of FSC originated in a meeting in 1990 as a means of confronting the perceived threat of tropical deforestation and to assist in the preservation of global species diversity (Forest Stewardship Council 2003).

The FSC was conceived in large part by environmental groups, most notably the World Wide Fund for Nature (WWF). The FSC is governed by a Board elected by its members who are divided into three chambers: “economic” (i.e. industries), “environmental” (i.e. environmental or conservation groups) and “social” (e.g. indigenous people’s organizations, social advocacy groups). The Board’s membership includes roughly equal representation from “northern” (i.e. industrialized) and “southern” (i.e. developing) countries (Forestworld.com 1999). The FSC is represented at the national level in several countries by FSC national offices or FSC contact persons. The initiative still enjoys strong support from WWF and is linked to that organization in a number of ways. Currently, the FSC is supported by a broad coalition of industry representatives, social justice organizations, and environmental organizations.

FSC chose certification as a tool to encourage sustainable forest management practices because FSC organizers believed if applied to the forest sector, it had the potential to bring divergent interests together to address the problems of declining forest health and loss of forested areas. Its value is that it provides third-party conformance evaluation of management practices, and it was hoped that this third party would be seen as a mediator between timber producers and environmentalists.

The FSC certification process begins with a forest landowner or manager voluntarily requesting that a third party certification body examine their forest operations. Certification is granted if their management practices are in compliance



with sustainable resource standards. Specifically, for FSC certification this means compliance with the *Forest Stewardship Council Certification Principles and Criteria for Forest Management*, which requires certain levels of environmental, social, economic, and technical qualification. Successful completion of a thorough assessment permits the party seeking certification to associate wood product from their land with the FSC logo. This logo is intended to communicate to the consumer that the product they are purchasing originated from “certified well-managed lands.” (WWF International 1999)

The scheme became operational in 1995 with the accreditation of 4 independent third-party certification bodies. As of July 2003, there were twelve bodies: SCS and SmartWood from the US, BM TRADA, SGS, and The Soil Association from the UK, SKAL from the Netherlands, KPMG FCSI from Canada, GFA Terra Systems from Germany, ICILA from Italy, Eurocertifor from France, and IMO and SQS from Switzerland. According to the FSC, three certifying organizations from Italy, France, and Mexico have also applied for FSC accreditation. These FSC certification bodies not only certify forest management but also chain-of-custody, which is a requirement for using the FSC logo (Forest Stewardship Council 2003).

As of July 2nd, 2003, FSC had certified 514 forests and approximately 38.2 million hectares or 1.0 percent of the world’s forests. By region, Europe and America (North and South) are outstanding in number as well as in area. By country, Sweden is head and shoulders above the rest in area, though the United States is top-ranked in number. Sixty percent of FSC certified hectares are located in three countries: Sweden, Poland and the United States. By forest type, natural and semi-natural forests dominate in number as well as in area. By tenure, industrial forests rank highest in number as well as in area, and government forests follow (Forest Stewardship Council 2003).

The FSC has developed 10 principles and criteria for forest management to ensure that consistent performance-based standards are used in evaluating forest management practices. In the case of processing facilities, the FSC has defined requirements for chain-of-custody certification. A chain-of-custody certificate indicates that a company has the facilities and systems needed to track certified material throughout the production process from stump to end-use.

Because the FSC’s principles and criteria are generic, the FSC facilitates development of specific standards in countries or regions around the world. The standards development process is designed so that a wide variety of stakeholders can participate. In Japan, late in the year 2000, a few active promoters of certification initiated the process of creating regional standards applicable to Japan. However, as of July 2003, that process has not yet been completed. Part of the

reason for lack of completion is that the task is much more complex than FSC representatives and Japanese promoters expected. FSC's principles and criteria were written for larger scale and less intensive forest management than what is found in Japan. Adjusting the principles and criteria to fit the Japanese situation is a very difficult and time consuming task.

Two other important aspects of the FSC system are percentage-based claims and group certification. Because the FSC system incorporates an ecolabel, strict chain-of-custody monitoring is required. Still, many companies that want to market FSC certified wood products have worked to develop a policy that allows products to be sold with the FSC label that are not made entirely of certified fiber. Such percentage-based claims allow an assembled or a fiber or particle-based product to carry an FSC label even though only part of its wood fiber is from a certified source. The FSC trademark may be used on products when at least 17.5% by weight of the total chip or fiber used in manufacturing the product is FSC certified and at least 30% by weight of the new virgin wood chip or fiber used in manufacturing the product is FSC certified. For assembled products made of solid wood parts, at least 70% by volume of the timber used in manufacturing the products is FSC certified (Forest Stewardship Council 2003).

The FSC system has often been criticized as being economically unfeasible for non-industrial private forestland owners. Constraints on small forest enterprises wishing to certify their forests include high costs, extensive documentation, compliance with complex standards, and lack of access to information and advice. Group certification aims to overcome these problems by pulling together a number of small forest areas under a single group manager. These professional land managers are consulting foresters who act as a source of information for the members of the group. They organize the certification process which allows each individual group member to benefit from the economies of scale of being part of a larger group. The individual managers (or company) and management practices used are evaluated, and a sample of managed lands is inspected. Providing performance requirements are met, the company qualifies for certification.

WWF established its first "buyers' group" to promote certification on the retail/consumer side in the UK in 1991. Initially, the UK group was called "1995 Group" as 1995 was the WWF original target date to get all UK's timber supplies from sustainable sources. The UK group was later renamed "1995+Group." Prominent members of the 1995+ Group include B&Q, Homebase/Sainsbury, and Meyers. WWF later established "buyers' groups" in a number of other European countries (e.g. Austria ("Gruppe 98"), Belgium ("Club 1997"), Germany ("Gruppe 98"), and Spain ("Grupo 2000")). In 2000, WWF named its "buyers'

group” Global Forest and Trade Network (GFTN) and subsequently created groups in 14 other countries in Europe, the Americas, and Japan (WWF International 2002).

### **ISO 14000**

ISO 14000 certification is an international, third-party, system-based, environmental management system certification implemented by the International Organization for Standardization (ISO). The ISO is a worldwide federation of national standards-setting bodies. It was established in 1947 and is headquartered in Geneva, Switzerland. ISO’s mission is to facilitate the international exchange of goods and services. It pursues this mission by defining technical specifications, rules, and guidelines to ensure that materials, products, processes and services fit their purpose. For example, ISO has developed a standard format for credit cards (International Organization for Standardization 2002).

As of July 2003, ISO consists of 146 member national standards bodies, with the United States represented by the American National Standards Institute (ANSI) and Japan represented by *Nippon Kogyo Hyojun Chosakai*, the Japanese Industrial Standards Committee. Standards are developed within ISO technical committees. Draft versions of the standards are sent out for formal support and comments from ISO member countries, and through iterations, feedback is incorporated to eventually realize an agreed-upon international standard (American National Standards Institute 2003, *Nippon Kogyo Hyojun Chosakai* 2003).

ISO does not have forest management standards. ISO 14001, together with ISO 14004, constitute an approach to Environmental Management System (EMS). It is not specific to the forestry sector. ISO 14000 certification requires a company to monitor and measure its environmental performance in order to implement continual improvement. The ISO 14000 system incorporates no threshold level of environmental performance beyond commitment to comply with applicable laws and regulations. The ISO 14000 series documents are tools for companies to obtain a certain level of environmental performance. The standards or goals are set by the applicant. In 1998, ISO adopted a report (TR14061) providing guidance on how to use ISO-14001 and ISO-14004 EMS standards in the forestry sector (International Organization for Standardization 1998). Unlike the FSC, there is no system for labeling forest products originating from forests certified under ISO.

ISO certification assessments are conducted by independent third party entities. ISO certifiers are not accredited by ISO, but rather by their respective national standards bodies. ISO certification is supported by the following companies who have elected to use the ISO 14000 approach for their forestry

operations: KPMG in Canada, Société Générale de Surveillance (SGS) in France, Finnish Standards Association (SFS) in Finland, South African Bureau of Standards (SABS) in South Africa, SEMKO Kvalitets och Miljocertifiering AB, Sverige Provnings och Forskningsinstitut (SP), and Swedish Institute for Standards & SIS-SAQ Certifiering AB in Sweden, Telarc in New Zealand, Det Norske Veritas (DNV) in Norway, and BM TRADA and Bureau Veritas Quality International (BVQI) in The United Kingdom (Kobayashi 2002). Environmental NGOs generally accept ISO as a useful means for companies to develop and implement an environmental management systems but are wary of ISO being used instead of performance-based systems like that advocated by the FSC (Forestworld.com 1999). Several observers have pointed out that ISO 14001 and FSC certification can be compatible and complimentary (Forest Stewardship Council - UK 1999). When the ISO 14000 series was being developed some country representatives advocated for the development of standards that would be specific to the forestry sector. However, the majority of the ISO members opposed this proposal because ISO standards are designed to be non-sector specific.

### **Factors in Certification Movement Success**

In the initial stages of the application of certification to the forest sector, it was believed that its economic incentives would encourage industry participation in certification without making it a mandatory regulation. Higher profits for those timber producers, suppliers, and retailers who participate in certification programs would follow from the creation of a marketplace advantage for certified wood products. Consumer demand would favor certified wood products for moral reasons as well as quality. It was also believed that companies producing and consuming wood products could utilize certification as a quality control mechanism (Hansen and Juslin 1999).

It is often assumed that consumer preferences and demands drive the development and acceptance of certification programs. Early in the movement to apply certification to forest management, it was hoped that consumers who are concerned about the environment would vote in the market place for certified products over non-certified ones. However, consumer preference has not proven to be a significant influence on moving companies to adopt certification as part of their business practices. Tracking the development and acceptance of certification programs show that success has not been led by final consumers in countries where forest certification is widely adopted. Rather, environmental organizations, companies, and individuals having specific rational reasons for supporting

certification have been the driving forces (Hansen 1999). Specific reasons include economic incentives, ecosystem health and preservation, and sustainable timber production.

The certification movement in Europe and North America has met with some success. Through the efforts of buyers groups and social activists, markets in Europe and the United States have been established for certified wood products. These markets have had the additional influence of encouraging landowners in timber exporting countries to participate in certification. It has been economically feasible partially because certifying large tracts of timberland has been relatively inexpensive. Initial certification can cost anywhere from 7 cents per hectare to 21 cents per hectare in the United States (Environmental Building News 2000).

Furthermore, social acceptance of certification in Europe and North America requires no consumer training. Many consumers are familiar with certification, and those persons directly involved in the forest industry have an understanding of how certification functions. They trust it as a social instrument, know how to implement it, and understand its predictable outcomes.

# Chapter 2

## Paradigm Shift in Japanese Society

To place the introduction of FSC certification to Japan in cultural context, it is important to point out certain unique features of Japanese society and to explain important changes that have taken place in Japan over the last decade.

### The Collectivist Nature of Japanese Society

Japan is an example of what sociologists term a collectivist society (Nakane 1972). This concept of collectivism is often misunderstood. Collectivism describes the social behavior of a society and is not an economic system classification such as communism, socialism, and capitalism. Collectivist societies exist in all of those three economic systems. To further confuse the issue, it is often assumed that in a collectivist society the members of that society will sacrifice their personal well being for the good of the society. These societies are often viewed as societies in which individual gain is less important than the well being of the society as a whole. This view is simplistic, incorrect, and misleading for anyone interested in studying the dynamics of collectivist society behavior. Collectivist societies are ones in which long-term closed relationships between individuals and groups dominate the social functioning within the larger society (Triandis 1986; Kim 1994; Triandis 1995). *Closed* in this context means that groups form within the society which exclude others from participation. *Keiretsu* is the term used for these closed company groups in Japan. These *keiretsu* groups provide assurance for the member companies of the group through long-term association and the expectations which evolve over many years of interaction. By exclusion of others and commitment to the members of the groups, all in the group are assured that their individual interests will be met by the other members of the group as long as each member adheres to the group's expectations. This loyalty to one's group creates in-group and out-group bias, and functioning successfully in a collectivist society without being a member of one of these groups is almost impossible (Yamagishi, et al. 1998; Miller and Kanazawa 2000).

Yamagishi's research indicates that pragmatic processes underlie in-group favoritism, specifically that reciprocity is a prime motivator in decision-making in Japanese society. His findings indicate that in-group preference in decision-making is only practiced when in-group individuals are clearly targets for other in-group members' favoritism. In-group favoritism was only observed in his experiments when all individuals concerned knew the in-group status of the others

and knew that compliance would be sanctioned by other in-group members (Yamagishi, et al. 1998).

From his experiments Yamagishi concluded that reciprocity is a key feature in collectivist behavior over mere affection for in-group members or desire for social acceptance and group identity (Yamagishi, et al. 1998). In-group favoritism is not based simply on sharing a same social category but on the mutually shared knowledge that favor will be returned by like favor. Group heuristics operates in that expectations of general reciprocity are established within the group. Maintaining in-group membership is pragmatic in the sense that ones social risk factor is lowered by accepting the sanctioning of the group. Because sanctioning is required, in-group preference based on reciprocity does not extend beyond the group. Sanctions which are mutually accepted by in-group members cannot be expected to exist with out-group members. Therefore, in collectivist societies members expect totally different behaviors from out-group members than from in-group members. Furthermore, Yamagishi proposes that if favors are offered in similar manner by in-group and out-group members, an in-group member risks ostracism by accepting out-group favors (Yamagishi, et al. 1998; Yamagishi 1998a).

The relationships within these groups are safe and secure as long as two conditions are met (Miller and Kanazawa 2000). The first condition is that group members must not take opportunities outside of their group. As long as opportunities outside the group are minimally attractive, this condition functions successfully. Risk is reduced due to the assurance of the group responsibilities to each other and the sacrifices they are willing to make to insure the group solidarity. The second condition is that the social structure must provide for the existence of long-term relationships. If the organizational structures and the institutions of the society encourage long-term relationships then these long-term assurance groups can form and exist successfully. These conditions have existed in Japan, and collectivism has provided assurance for the transactions of Japanese society through the sanctioning and monitoring of activities which are imposed on the members of the group (Aoki 1989; Yamagishi, et al. 1998).

### **Paradigm Shift in Japanese Society**

Yamagishi's findings that in-group favoritism is pragmatically based on sanctioning, monitoring, and reciprocity provide sound basis for his theories explaining the paradigm shift happening in Japan today. He points out that Japan's collectivist society functioned very well in the past to reduce uncertainty in social encounters (Yamagishi 1999). A collectivist society with established systems of

sanctioning and monitoring is very efficient for producing quality goods and services because sanctioning and monitoring reduce transaction costs. This allowed Japan to create a stable, highly productive and efficient society. This reliable equilibrium was based on mutually committed long-term relationships such as a permanent employment system for workers and the *keiretsu* network of personal commitments between representatives of organizations which functioned through informal sanctioning.

Yamagishi predicts that changes are coming quickly to Japan. He warns that as the “collectivist strategies” for maintaining equilibrium and reducing uncertainty fade away, Japan will go through a period of searching for new systems to replace these (Yamagishi 1998a; Yamagishi 1998b; Yamagishi 1999; Yamagishi 2000). These new systems will have to be ones that are compatible with the more open social environment currently evolving. In this evolution, Japan is moving in the direction of what Yamagishi calls “trust-based” societies. In a trust-based society characterized by flexible relationships, members must develop “social intelligence” in order to make good decisions in forming new relationships. In this sense, *social intelligence* is a kind of screening developed through experience in transacting and is used to select lower from higher risk persons.

## Evidence for a Paradigm Shift In Japan

The paradigm shift from a closed, long-term relationship based system to a more open, market-based system can be supported by noting the changes in the Japanese financial industry over the last several years. One of the major causes of the paradigm shift has been the deregulation of all aspects of finances over the last ten years. Beginning with the year 2000, all aspects of the banking, securities, and insurance industries are now almost completely deregulated. It has been a gradual change and, therefore, the impact has been gradual, but cumulative, and the results have had tremendous impact on all aspects of Japanese business.

Under the traditional system before deregulation, all aspects of the finance industry were controlled by *Okura-Sho*, the Ministry of Finance. As mentioned previously when the institutions and organizations of a society promote long-term relationship transactions, this collectivist behavior can be successful. The regulated financial system in Japan was one of the reasons that the closed system functioned successfully. In this regulated system there evolved what was called the *main bank system*. In this system, one bank became the main bank for one company. This was an exclusive relationship and since all aspects of



finances were regulated, there were no outside opportunities to be missed by the company. No outside opportunities existed because banks all had the same governmental controls on their activities which effectively eliminated competition for clients. The main bank not only provided all of the direct financial needs for its client company but also owned a significant enough amount of the stock in the company to be the major influence on all management decisions.

Furthermore, the *keiretsu* relationship between the individuals in the bank and the company was also an important aspect of the system. In this situation the company management could have a free hand in decision-making without accountability to the interests of the stakeholders except those in the main bank. Under this system banks did not have to compete for major corporate clients, and companies did not have to perform for their stockholders. It functioned successfully for many years since the low risk involved in dealing with known persons in a regulated financial system kept transaction costs at very low levels.

As the world moved more and more toward internationalization of its markets and financial transactions, Japan's closed system became a liability. Japan's banking institutions could not function successfully in this more market-based world economy. This situation was made worse by the Ministry of Finance's gradual deregulation of the financial industry in Japan and opening of Japan's market to international banking institutions. These two changes were forced on Japan's government due to international pressures, often from the United States (Tsusho Sangyo Chosakai 1990). Since deregulation, banks now have to compete with each other for major corporate clients and also with international banks. The main bank and client company relationship is disappearing and as a result, the *keiretsu* arrangement is quickly changing the way it functions. Since companies can shop around for financing, the main bank no longer holds as much influence over company decisions. The interests of individual investors is becoming more important to companies since a main bank can no longer hold enough stock to be the major influence on company decisions. These investors are now more sensitive to the performance of the companies they invest in, and companies must perform well in order to attract these investors. Financial needs of a company can no longer be met by one banking institution in a closed system; therefore, if a company does not perform well it has no guaranteed financial support. Companies must be efficient to survive.

Evidence of the impact of these changes and support for the idea that there is indeed a paradigm shift happening in Japan can be found by looking at the changes in such areas of business as bankruptcies. As shown by statistics in the *Tokyo Shoko Research Data Base*, bankruptcies in Japan have been increasing and large companies are among those which are forced to file for bankruptcy.

In 1990, 6,468 companies filed for bankruptcy. In 2000, 18,769 filed for bankruptcy which is a three-fold increase over 10 years. This increase could be explained by difficult economic times and recession. However, if we consider the fact that companies listed on the Tokyo Stock Exchange which filed bankruptcy increased from 3 in 1994 to 42 in 2002, with a steady increase in the years between, and that bankruptcies for listed companies of the six major company groups increased from zero to 9 with a steady increase from 1994 to 2002, we have evidence for a paradigm shift. The significant feature of this information which supports the paradigm shift is that in years before 1997, *keiretsu* relationships, with very few exceptions, would never have allowed the bankruptcy of company group members (Tokyo Shoko Research 2002).

These kinds of financial consequences were almost unheard of before deregulation. Since banks must now compete with other domestic banks and with international banks, they can no longer support one company and especially a company that is not performing efficiently. These low performers must rely on their own ability to secure financing and some are finding it hard to do so in a more competitive financial market. The bank and client relationship is becoming short-term market-oriented since with these changes a company can take advantage of better deals offered by competing banks.

Another source of evidence for the paradigm shift is the change in corporate governance over the last ten years (Aoki and Kim 1995; Aoki and Saxonhouse 2000; Ministry of Economy, Trade, and Industry 2001). Before deregulation the securities markets were not really open and competitive. Since companies now actually rely on these markets to get their financing, the market is more competitive. Therefore, companies must put more importance on stockholders and the main bank is no longer the biggest stakeholder in a company. Now companies are getting more conscious of their stockholders in terms of governance, which is the normally expected governance relationship in the United States. The major impact of this change is that in the old system banks focused on long-term profit maximization. In today's market stockholders make decisions which are more supportive of short-term gains.

Evidence of this kind of change in corporate governance in Japan can be seen from the opinion poll conducted by *Keizai Kikaku Cho*, the Economic Planning Agency, in 1997. The results of this survey with regards to corporate governance showed that respondents expect top management promoted inside the company and regulating government to have less influence on corporate governance in five years and showed that general stockholders and institutional investors are expected to gain significantly more influence in governance over the next five years. These two results show evidence that a decline in the strong

influence of company management will be complemented by an increase in the influence of general stockholders and institutional investors. The results of the survey also indicate that respondents believe that the emergence of the new stakeholders will cause companies to restructure their business systems and practices to maximize efficiency for short-term profitability. To be efficient for short-term goals the company will have to move toward market-oriented transactions and away from the long-term traditional relationships. From this survey we see strong indications that a shift is happening in the way Japanese people expect governance to be shared. Today there is more emphasis on governance by individual stakeholders with short-term investment interests rather than confidence in company executives bound together in long-term governance relationships with long-term investment interests (Economic Planning Agency 1997).

Another example and further evidence of the changes which are forcing the paradigm shift is the dramatic change in employment patterns over the last ten years. Japanese companies and government organizations before the current paradigm shift offered permanent lifetime employment. Today, this is not necessarily offered. Due to mobilization of the work force, employees who are skilled and highly marketable are able to take advantage of opportunities which offer them more incentives than lifetime commitment to one company can offer them.

Evidence for labor relations shifts from lifetime secured employment to non-secured can be found in statistics such as those provided by *Rodo-Sho*, the Ministry of Labor. Labor statistics show that the unemployment rate in Japan remained steady at very low figures of between one and three percent with an average of two percent over forty years. In 1994, the unemployment rate began a steady rise that has continued since then. Today the rate is at an all time high of 5.3 percent. This trend shows that employment patterns have changed and jobs are no longer as secure in Japan as they were prior to the paradigm shift (Statistic Bureau & Statistic Center 2002). Further statistics indicate that in 1982, 23 percent of all employees who were over 15 years old were temporary contracted employees. By 1997, this figure had risen to 29 percent (Statistic Bureau & Statistic Center 1997). This indicates that people are moving steadily away from lifetime employment arrangements with their employers. Companies which are now being forced to pay more attention to short-term profitability and efficiency in operations can no longer support lifetime employees as open-market-oriented competition increases. Labor relations are shifting from the traditional long-term system to a more market-based system.

Considering the previous discussion of the traditional system of Japanese business, we see that low transaction costs and stable equilibrium were enjoyed in

Japanese business because of the in-group favoritism created by transactions based on long-term relationships which were closed to outsiders. However, being closed to outsiders is an opportunity cost because new opportunities offered by non-in-group members cannot be enjoyed. Until recently, savings in transaction costs exceeded opportunity costs in Japanese society. The losses from not taking advantage of outside opportunities have grown and exceeded the savings of lower transaction costs. Mutually committed long-term relationships such as *keiretsu* are changing and permanent employment is disappearing. In-group favoritism is becoming a liability rather than an asset, and the shift from the long-term closed relationships as the base for transactions to a more open system is evident throughout Japan. These factors have changed Japanese business systems and provide strong evidence that a society wide paradigm shift is happening in Japan today.

# Chapter 3

## Forest Sector in Japan

Changes in economic and social behaviors are evident in much of Japanese society. However, due to certain characteristics of the Japanese forestry sector, it cannot be generalized that these changes are being felt in the forestry sector the same way they are being felt in other parts of the society. A central question to this investigation concerns how the paradigm shift is being regarded in the forestry sector. Understanding the uniqueness of this sector in Japanese society is necessary to put into perspective the introduction of FSC certification coincident with the paradigm shift.

### Traditional Nature of Japanese Forest Sector

Until several years ago a visitor to almost any commercial Japanese forest would have immediately noticed carvings on the trunks of the trees. These carvings were the signatures of the person who cared for the trees during their growth, and those signatures carried with them the reputations of the caretakers. These “brands” assured buyers that a log so marked met the standards of quality associated with the reputation of a specific caretaker (Funakoshi 1999). This interpersonal connection between producer and buyer formed a closed system of procurement and functioned successfully to reduce transaction costs by reducing risks for the buyer. Through repeated transactions across generations, reputations were established and these signatures carved into the trunks of trees during their growth provided assurance in the market of forest products.

Today these signatures can still be seen in some of Japan’s forests, but after harvesting of these trees, the ones that form the new forests no longer carry signatures. These new forests are not forests of “branded” trees because the market price has moved further and further away from covering this kind of intensive silviculture. Buyers have turned to cheaper imports and with only a small market for domestic trees, there is less incentive for this assurance system to continue to function. The loss of these signatures is an indicator of the depth to which changes in Japan’s socio-economic structures are being felt in the forest sector.

Japan’s forest sector has been described as an artifact of pre-modern economic systems, old-fashioned and traditional in almost all aspects of its operations. Throughout modern history, Japan’s forest sector has in many ways been able to avoid the sweeping changes that brought Japan out of protectionist international economic isolation prior to 1868. Forest owners and millers managed

to maintain successful productivity mainly due to the exclusion of foreign competition for wood products and the protection and financial support of the Japanese forest authority in government, *Rin-Ya-Cho*, the Forest Agency. This protection from the pressures and demands of the international marketplace made this once vital industry incapable of existing in the modern business climate because it has never had to develop responsiveness to international competition without significant governmental support. While the rest of Japanese society suffered through many steps in making the significant social changes demanded by the events of the last 150 years, the forest sector did not. Since it avoided these steps, it now has a cumulative social change deficit as well as a financial one that must be faced.

The two most significant social transitions experienced by Japanese society prior to the economic crisis of the 1990s have been the Meiji restoration and the post World War II reconstruction. In 1868 at the beginning of the Meiji Restoration, Japan adopted western-style social institutions such as the parliamentary monarchy system of England and the legal systems of France and Germany. German forestry systems and technologies were imposed in the form of National Forest Lands, *kokuyu-rin*. The National Forest Lands were created from the very large estate lands of the aristocratic clans, *han*. The Meiji government seized these lands and brought them under the control of a national governmental agency. However, lands that were privately owned and not part of the feudal clan system were not confiscated. Instead, ownership of these private lands was clearly established for taxation purposes further institutionalizing the traditional ownership system. Therefore, in the forest sector, structure of private ownership did not change and associated traditions remained the same. Privately owned forest lands stayed as they had been for centuries.

The second major social change was at the end of the Second World War. During the occupation of Japan by the Allied Powers, the United States forces attempted to change Japan to be a more democratic society. Three of these democratic changes were the creation of labor unions, the dissolution of the *zaibatsu*, large company groups owned exclusively by one family, and the redistribution of farmland from large private tenant farmer estates to small-scale ownership. These changes were successful in many sectors of Japanese society, but the forest sector managed to avoid almost all effects of these changes. Most importantly, forestland was not redistributed under the agricultural lands redistribution act allowing large forest estates to remain in tact under single family ownership.

The two society-wide major social changes mentioned above had tremendous impacts on Japanese society, but the forest sector was able to avoid them and

kept traditional methods of operations intact. The forest sector avoided sweeping changes in Japanese society at two significant times, but it appears that it cannot avoid the results of the financial crisis of the late 1990s. This crisis revealed the serious problems of Japanese society, and the forest sector is an example of these serious troubles.

### **Current Financial Situation in Japan's Forest Sector**

Japanese labor and transportation costs are some of the highest in the world, and since timber production is a heavily labor intensive industry, it is very hard to maintain a profitable forest business in Japan today. Many of producers who are able to run their operations without a loss are those who are able to supply a small niche market which requires large clear-growth logs. These growers have old-growth trees on their lands that were in areas too difficult to harvest by the conventional methods used during World War II and the post war reconstruction. Today growers harvest these large logs selectively and often by helicopter. The harvest cost is high, but the return from the market is also very high. Since this kind of timber is more and more difficult to find on the world market, the premium price it demands makes the Japanese old growth timber competitive with the world market prices. Niche markets such as this that can provide profitable markets for domestic timber are rare and a negligible part of Japan's timber industry. Japan's timber industry is not characterized by diverse segmentation and the few niche markets that do exist are also reliant on imported specialty timber that currently provides 72% of the demand (Forest Agency 2001).

The competition with imported timber is pervasive throughout Japan's forest industry. After Japan's forests were cut to supply the war effort in the 1940s and the post-war reconstruction in the late 1940s and early 1950s, replanting was almost exclusively monoculture using *sugi* (*Cryptomeria japonica*) or *hinoki* (*Chamaecyparis obtusa*) chosen for fast growth and fiber characteristics suitable for the construction and pulp and paper mass markets. These two species occupy 68 % of Japan's plantation forests (Forest Agency 2000). Therefore, the standing timber on most of Japan's commercial forestlands today is same-age and same-species timber at harvest age. This timber has few characteristics that distinguish it from the much cheaper timber imports entering the Japanese market over the last 20 years. Imported timber provides 80% of the total demand in Japan's industries today with 46% used for pulp and paper, 35% used for construction, 17% used for engineered wood products, and 2% for other specialty markets (Forest Agency 2001). Since imported timber provides 89% of

Japan's demand for pulp and paper and 67% of construction materials, we see a situation in which imports are dominating the market and the small percentage of domestic timber reaching the market comes from domestic producers dumping their products on the market at below production cost. Japanese timber growers have timber ready to harvest but no economic incentive to do so. This situation, along with the fact that few producers have timber for niche markets, has left few forest products producers in Japan with profitable businesses.

The serious financial problems of this last decade have caused the organizations and people in the forest sector to be apathetic because there seem to be no solutions. One of the most demoralizing factors for timber growers has been this chronic financial loss in domestic timber production accompanied by the loss of government support and subsidies. The serious financial problems were further exacerbated by failures in forest policy which created an accumulated deficit in the national forest account (Kurimura 1988; Shimazaki 1998). During the economic expansion of the 1950s and 1960s the agency grew rapidly because there was high demand for timber products from its national forests, and domestic timber production was protected by the Japanese government ban on imported timber products. The agency expanded rapidly over these years and by the 1960s it had financial responsibility for a large number of permanent, lifetime employees as well as extensive subsidy programs created to influence private timber production. During these times of expansion, agency management did not expect the changes in trade policies that were to come (Arinaga and Kasahara 1988; Shimazaki 1998).

In 1964 the Japanese government completely opened the Japanese market to imported timber. This was devastating to the forest industry in Japan and to the Forest Agency. In addition, in 1971 the government of the United States eliminated the gold standard as backing for the US currency. This change in the currency conversion system caused major market fluctuations resulting in the value of the Japanese yen being raised significantly in relation to the US dollar. The strength of the Japanese yen opened the Japanese market more and more to cheaper timber products from countries with much lower production costs. This economic structure made an already bad situation even worse for Japanese domestic timber companies.

### **Changes in the Forest Agency**

The Forest Agency was not prepared to respond to these drastic changes which seriously impacted the economic situation surrounding the forest industry. A series of poor management decisions such as acceptance of high interest loans



from commercial banks rather than asking for assistance from other branches of government produced a US\$ 30 billion accumulated deficit in the national forest account as of 1998 (Kasahara 1999; Nihon Keizai Shimbun 2000). The agency sought commercial loans because it wanted to avoid political and financial influence and interference from the Ministry of Finance (Arinaga and Kasahara 1988). The actual result of these Forest Agency decisions has been forced reorganization with an associated loss of autonomy and authority. Due to this deficit, the Forest Agency was, for all intents and purposes, stripped of its authority and autonomy in March of 2000. The Diet redirected two-thirds of this deficit to the national general account. The remaining one-third was left as the responsibility of the Forest Agency over a term of 50 years (Forest Agency 2000). As a condition of this arrangement, the Forest Agency agreed to change their organizational structure and mission. A result of this reorganization was a shift from a primarily timber production orientation to a more conservation oriented mission.

These drastic adjustments in the Forest Agency's policy making and implementation affected the whole forest industry sector in Japan. Virtually all forest farmers and mills in Japan had been subsidized under government programs administered by the Forest Agency. The Ministry of Finance cut the Forest Agency's budget forcing subsidies to support timber production in the forest sector to be significantly reduced. With the reduced funding for timber farming subsidies the agency decided that instead of spreading the remaining funding over all forest landowners, they would use it to provide large landowners with funds if they would use those funds to accelerate efficient large scale intensive commercial timber production. (Forest Agency 2001).

These problems mentioned above have caused some serious side effects. Due to the financial problem in the national forest account, the Forest Agency has abandoned intensive forest management on the National Forest lands replacing it with the concept of the "natural forest management approach" (Arinaga and Kasahara 1988; Kasahara 1999). The adoption of this natural management approach has in effect created a situation in which previously highly managed plantation production forests are now suffering from almost no management and very little silvicultural treatment. This lack of management policy has reduced the quality of stumpage in Japanese national forests and there have been no initiatives to actively encourage the development of balanced natural ecosystems (Kawakita Shimposha 1989). Also, the Forest Agency and other public and private landowners have sold their forest lands to private enterprises to create golf and ski resorts (Kuroki et al. 1993). This situation has made local forest dependent communities decline economically because the recession which Japan is

now experiencing has undercut the potential of this change in economic dependency from timber to tourism (Kasahara 1999), and the decrease in subsidies to timber growers has left them without viable business operations.

As can be seen from these problems, the forest sector in Japan is severely depressed. The Forest Agency has lost its autonomous power to subsidize the industry and the market price for timber products has made harvesting domestic timber a liability rather than profitable. The traditional operating procedures are not functioning and there have been no promising solutions to these serious financial problems. Even in the very conservative and traditional forest sector, we can see indications that Japan's society wide paradigm shift is being felt in the forest sector and is changing behavior.

### **Unique Features of Japan's Forest Sector**

If we look at the countries where certification evolved and found application, we see that there are critical differences that make Japan unique as a participant in FSC certification. Tracking the success of forest certification schemes in Europe and North America shows us that the influence of environmental NGOs is a critical element in the adoption of certification. Those influences are very strong in Europe and North America but only beginning to be felt in Japanese society. Compared to the European and North American countries where FSC certification was developed, Japan doesn't have a supporting atmosphere with a strong green movement. Japanese society has few high-profile NGOs, and the environmental movement in Japan is in its very early stages. In Europe and the Americas, forest certification was supported by the commercial intermediaries between the timber growers and the retailers such as mill owners, wholesalers, trading agents, and buyers groups. These business people supported forest certification because they saw market advantages in aligning themselves with the environmental movement. Compared to those countries, Japan has very few business people who support the environmental movement since there are few marketing advantages for "green" products in Japan at this time. Government regulations are strong in Europe and North America and have given support to environmental initiatives such as forest certification. In Japan, government has not strongly supported environmental initiatives, and this kind of activity is just beginning to be seen. Furthermore, Japan is not a timber exporting country. Japan does not export timber to countries where certified timber products are acknowledged and desired, and there is very low recognition of "green products" such as FSC certified wood products in Japan's domestic market compared to Europe and North America. Therefore, obtaining forest certification in order to

qualify timber and wood products for certified markets overseas or for domestic markets is useless as an economic incentive. In the situation described above, certification is not really ready to be promoted in Japan from a structural point of view.

However, in February of 2000 Hayami Forest did obtain Japan's first Forest Stewardship Council's certificate for their forest management. This company pursued FSC certification even though the initial assessment cost to certify one thousand hectares was over US\$ 40,000 (US\$ 40 per hectare) (Hayami 2000). Compared to Europe and the Americas, the cost in Japan is very expensive. At the same time, two timber mills affiliated with this company also acquired certificates for their chain-of-custody process. In June of 2000 a co-op of timber farmers began the certification process on their lands at Yusuhara in Kochi prefecture. This certification project was initiated by the local governments of this economically declining rural timber community and was completed in October, 2000 with the financial assistance of local government agencies (Kochi Prefectural Government 2000). Without this financial assistance, the project would not have been completed due to the high cost. These certifications are being implemented even though some observers believe there is no economic rational to justify the cost.

# Chapter 4

## Adaptive Efficiency and Decision-making

In this time of depression and desperation in the forest communities of Japan and a paradigm shift in all of Japanese society, FSC certification was introduced to the forest sector even though there did not seem to be an apparent clear rationale. Yamagishi's work in social psychology related to the current changes in Japanese society offers possible explanations for this phenomenon, and it was from his insights that I developed my own theories about the acceptance of FSC certification in Japan.

Yamagishi's findings provide convincing arguments that the financial, social, and political changes of the last decade are causing the demise of the traditional collectivist system in favor of a more open flexible market-oriented system. He points out that as Japanese society searches for replacements for the closed in-group arrangements of the collectivist system, there will be a period of adaptive trial and error (Yamagishi 1998a). In this period of experimentation, western social instruments such as certification have been introduced in some areas of Japanese society. It is consistent with Japanese social and economic behavior that Japanese forest sector actors would also look to foreign forest sectors for social and economic innovations.

## Trust-based and Assurance-based Societies

The terms trust and assurance as they are used in this discussion require clarification. Trust is a complex concept, and in the English language the term is rather general requiring clear contextual definition for understanding. When it is compared across two cultures in two different languages, even more attention is necessary to make sure its use is understood. The concept of assurance as it is used here also requires clarification. For the purposes of this discussion these two concepts are used as they are defined in the social psychology literature which I have relied on for comparing Japanese and western social interactions in the business context.

In understanding the definitions of trust and assurance in this context, we must first understand "social uncertainty." Yamagishi uses *social uncertainty* to refer to situations in which actors do not have the capability of completely knowing a partner's intentions. If there are no outside constraints to force an actor to act with complete honesty, then the partner experiences uncertainty of outcomes and faces the risk of loss. Social uncertainty can be expected to increase during times of paradigm shift because traditional social structures are lost or

modified. Issues related to how social uncertainties can be reduced become important to those experiencing the changes. Trust and assurance as defined here can both function in a social order to reduce risk and increase certainty in interactions and transactions. In his article, Yamagishi assigns to “trust” the role of reducing the problems of social uncertainty in the United States. If it is also assumed that assurance as it is defined here reduces social uncertainty, then we can limit the definitions of both of these concepts to how they apply to reducing risk and uncertainty.

Yamagishi uses Barber’s definition of trust: “expectation that partners in interaction will carry out their fiduciary obligations and responsibilities, that is, their duties in certain situations to place others’ interests before their own” (Barber 1983, 9). For Yamagishi, trusting others in this context means expecting others to behave with goodwill and benign intent (Yamagishi and Yamagishi 1994). Therefore, trust as a part of the fabric of social interaction can be defined as the expectation that others will perform with goodwill and benign intent. Assurance is also the expectation of benign intent but for reasons other than goodwill. Assurance is based on a mutual knowledge of the incentive structure established in the social environment. If a society operates in an assurance prevalent mode, the persons are cooperating based on mutual self-interests. To compare trust and assurance, we can say that trust functions based on inferences in social interactions which provide clues to partners’ personal traits and intentions; whereas, assurance functions based on knowledge of the incentive structure mutually accepted by the partners. Critical to participating successfully in either of these social structures is the development of the social skills appropriate to each.

I am not suggesting that assurance, as it is defined here, does not function in western society nor that trust as it is defined here does not function in Japanese society. The proposition used in this discussion is based on the findings of Yamagishi that in the traditional social structure in Japan, assurance is more prevalent than trust in organizational human behavior and that trust is more prevalent than assurance in the United States. Hence, we can use the terms “assurance-based society” to discuss the development and function of Japanese social institutions such as *keiretsu* and “trust-based society” when discussing social institutions such as certification.

In trust-based western societies, social instruments evolved to reduce risk and uncertainty which did not evolve in the assurance-based systems of collectivist societies like Japan (Fukuyama 1995; Yamagishi 1998a). Examples of these social instruments are seals of approval, accreditations, credit ratings, better business bureaus, and certifications (North 1990). These social instruments function

to provide predictability and reduce risk in societies in which exchanges are more impersonal than in the collectivist type of society in which long-term relationships are fundamental to exchanges. In western societies, the social instruments mentioned above evolved to supplement the formal rules or laws of a trust-based society and contribute to the effective use of social intelligence (Yamagishi 1998a). These social instruments can be installed by private sector groups without society-wide approval and do not require the legislation of governments. They can be installed within a sector by the actors of that sector to establish credibility for the organizations and individuals in the sector. The effectiveness of these social institutions depends on the trustworthiness of the body responsible for administering the social instrument and its reputation with the general public. In the trust-based societies of the West, these social instruments serve the purpose of providing risk reduction and predictability intermediate between formal laws and informal constraints. Most of these social instruments rely on some kind of third-party authority as a means of eliminating self-serving bias and, thereby, establish credibility. This impartial third-party element is a significant part of the social intelligence of many western societies. These social instruments have become an accepted, well-understood element of the economic and social fabric of business in the West. However, since social instruments such as certification did not evolve as part of Japanese society, they are not part of Japanese social intelligence. In this time of transition in Japan, forest sector actors have begun the process of adopting a social instrument which is not part of the Japanese social intelligence nor a part of the economic and social fabric of business. Therefore, there is cause for concern about the expectations and the outcomes of FSC certification for both the promoters and the followers.

### **Margins of Organizations, Experimentation, and Social Change**

Yamagishi's research related to the collectivist nature of Japanese society and the current paradigm shift, combined with North's work related to adaptation of social instruments across cultural norms, provide valuable insights into the initial promotion of FSC certification in a society where it did not evolve. North suggests that a variety of factors are related to how societies react to periods of transitions. Outcomes are uncertain because there is little in-depth understanding of all the aspects of adaptive efficiency in times of environmental change, but observations suggest that overall institutional framework is an important influence on how much a society encourages the trials, experiments, and innovations that produce adaptive efficiency (North 1990). In traditional Japanese society, social

institutions and human preferences for finding solutions have not encouraged the trials, experimentation, and innovations which are important for adaptive efficiency. Japanese problem solving and decision-making has not been oriented toward encouraging adaptive efficiency because until now there has been little pressure to adapt due to the relative unimportance of outside environments (Nakane 1967; Nakane 1972; Yamagishi 1998a).

North points out that incentives built into the institutional framework direct decision-making processes, and decisions change and modify the existing systems. If incentives exist and encourage problem solving experimentation, the adaptive efforts have more opportunities for maximization. North argues that in societies where trials and experimentation are not encouraged, adaptations are often initiated at the margins of organizations. Margins are the nodes of organizations which are directly connected with the environment. Because of their location close to the environment, agents or actors located in the margins are often those who initiate changes in response to changes in the environment (North 1990).

*...the immediate instruments of institutional change are political and economic entrepreneurs who attempt to maximize at those margins that appear to offer the most profitable (short-run) alternatives.* (North, 1990, 100)

Margins are especially sensitive to cultural influence because margins are in direct contact with environments (North 1990). Therefore, actors at the margins are heavily influenced by those environments. These environments are the interface of all the cultural norms of a society and the needs created by interaction with other entities. The cultural specific norms of each society create a society's informal constraints and are prevalent and persistent. Therefore, needs at the margins are culturally specific. Each environment in each society has unique social institutions and constraints which dictate the choice processes made by actors at the margins. One of these culturally specific characteristics is the bargaining power of individuals and groups at the margins (Okazaki 1999). Since bargaining power will be different from society to society, we can expect marginal adjustments to have different outcomes. If we add to the differences of bargaining power the different histories and the incomplete feedback on outcomes that characterizes adoption of social instruments from another society, we see that marginal adjustments cannot be expected to have the same outcome in different societies. One of the important characteristics of actors located at the margins is they are often less constrained by organizational rules and conventions than their superiors in the organizational structure (North 1990).

Granovetter's work with the concept of strong and weak ties agrees with North's observations about the importance of margins for innovation (Granovetter 1983). *Strong ties* are those ties that exist between close friends and associates. They are the ties that exist over long periods of time and tend to isolate groups of people from outside information. *Weak ties* on the other hand are ties which are much more fluid. They typically exist between people in different organizations which may have no official connection. Granovetter's work suggests that weak ties function as bridges across which new information flows. These are the ties that bring innovation from outside sources and challenge the status quo of strong-tie isolated groups. As does North, Granovetter argues that weak ties can exist more freely at the margins of organizations because those persons are not as bound by strong ties as those persons who occupy central positions. Central-position persons in the management of organizations are more ensconced in the webs of strong ties, which they have joined in order to reach their positions in the center of their organizations. Persons at the margin are most often new to the organization and have not yet developed as many strong ties which bind them to the status quo of the organization.

*If the innovativeness of central units is shackled by vested intellectual interests (or perspectives), the new ideas must emanate from the margins of the network.* (Granovetter, 1983, 216)

He points out that marginals can better afford to innovate, and if their innovations are successful, those innovations can be seized upon by the center. However, if their innovations fail, they do so without doing damage to the center.

The initiators and promoters of FSC certification in Japan occupy positions which are in the margins of their respective organizations. Examples can be seen in the promoters who have come from universities, consulting firms, and NGOs. Forestry professors who are active promoters are all newcomers to their universities and most have previous work experience outside of academics. Their non-academic experiences provide them professional access to a variety of people in many organizations. Most of them are in divisions in their universities that are affiliated with the forestry department but are not considered as mainstream. Others are newcomers to forestry consulting firms, timber finance firms, and NGOs. They came to these positions with previous experiences in government or universities and bring with them ties to many kinds of organizations. They are able to connect ties across many organizational boundaries. All of these persons fit North and Granovetter's descriptions of marginals. They all have weak ties across organizational boundaries and they have not become



isolated into the mainstreams of their own organizations.

Granovetter's study of community mobilization may offer insights into how FSC certification has attracted its promoters in Japan. His study suggests that persons with weak ties are more able to mobilize for innovation within the larger community because they can reach across organizational boundaries more freely. Citing studies of West Enders in London mobilizing to fight urban renewal and five community groups mobilized to effect educational reform, he shows that those persons who were able to form coalitions to sustain protest were persons in the margins of their organizations. They were able to influence persons of central positions with power, but their weak ties associated with their positions at the margins allowed them to form wider networks of sustained action. The similarity of the locations of the actors in the margins of their organizations in these examples and the locations of the persons who I found most active and effective in the initiation of the introduction of FSC certification in Japan offers an explanation for how, against all apparent odds, this innovative experiment in social change has gained its momentum.

Since Japan's organizations are highly centralized and hierarchical and do not usually encourage individuals to experiment and innovate, adaptive problem solving and decision-making has been limited (Nakane 1967). The forest sector exemplifies these phenomena, but if we look at the promoters of FSC in Japan we see that those persons are located at the margins and, therefore, closer to the environment and less constrained by organizational structures and traditional conventions. The location of FSC promoters at the margins of their organizations is allowing them to utilize their networks of weak ties to facilitate the mobilization of the FSC movement in Japan and providing them with freedom from traditional constraints allowing them to experiment with adaptive problem solving and innovative decision-making. The expectation of this experimentation is the creation of productive pathways to increase domestic market share for Japanese producers and prepare Japanese producers to compete with international certified producers. North states that pathways of adaptive efficiency are by nature experimental and, therefore, high risk. He warns that pathways created by organizations, including special interest groups, can persist even when the outcomes are nonproductive (North 1990). This warning could have application to the introduction of FSC certification to Japan.

### **Rational Decision-making**

If forest products certification in Japan does not provide an increase in the domestic market share for certified producers and does not prepare Japanese

producers to compete with international certified producers, it will prove not to have been an appropriate innovation to help revitalize the forest sector in Japan. However, it is possible that by the time the outcomes are realized, the results may have already had unforeseen negative impacts on the forest sector. Decision-making by people in the forest sector during the introduction and implementation stages of FSC certification can have far reaching influences on the future health of the Japanese forest industry. Therefore, it is important that forest sector actors critically assess the rationale of their decision-making for supporting or not supporting FSC certification. Recognizing the choice opportunities that direct the promotion and implementation of FSC certification and basing decision-making on well informed rational thinking can help prevent the creation of non-productive pathways. If the best effort to use rational decision-making is not put forth in this time of risk due to innovation, unexpected damage to the forest sector could result in spite of the best intentions of all concerned.

To recognize the potential for irrational decision-making in times of innovation, March and Olsen postulate three factors as predictors. When the three features of problematic preferences, unclear technology, and fluid participation are present, decision-making can be subject to non-rational solutions (March and Olsen 1979). Applying their predictors to the FSC certification movement in Japan, unclear technology seems to be evident since forest certification is new to Japan and most people in the forest sector do not have in depth understanding of the nature of certification. Fluid participation can be observed in the informal organizational structure of the movement. The informal network which has evolved does not have continuity with regards to the input from participants in decision-making. The third feature, problematic preferences is evident because FSC certification was developed to promote sustainability in forest management. This issue is much less important than economic survival to most of the people in Japan's forest industry at this time. Since all three of the features for non-rational decision-making seem to be present in the promotion of FSC in Japan, it is predictable that the support and acceptance of FSC certification in Japan is based on vague expectations rather than obviously rational choices.

When the three hallmarks of non-rational decision-making are present during a choice opportunity, the situation can produce what March and Olsen term the *garbage can theory of decision-making*. In this model, a choice opportunity can be described as a garbage can into which problems and solutions are thrown. A choice opportunity is supposed to consist of alternatives, consequences, and objectives to make rational decisions. What actually happens in some choice situations is that decision-making is repeatedly postponed waiting for more information and more alternatives. Action is delayed and no decision is made until

pressure from the outside forces action. A decision will then be made under pressure and standard operating procedures are often not followed. In this situation, a decision is an outcome or an interpretation of several relatively independent streams. These streams are categorized as problems, solutions, participants, and opportunities. Under the pressure of desperation, March and Olsen's model describes a *garbage can* decision as one which is dependent on the elements in the streams which are closest together at the time the decision is needed. The results are capricious outcomes produced by the time phasing of participants, problems, and solutions. A problem is exercised more than solved, meaning that action is put in motion to show that attention is being paid to the problem. Many times this kind of choice and the resulting action serves the purpose of occupying people and giving them a sense of hope that the situation will have resolution.

If the FSC certification movement in Japan is a *garbage can* situation, then March and Olsen would warn that this kind of movement would be in danger of eventually failing to realize the goals it was intended to accomplish. Their theory predicts that *garbage can* solutions usually fail because of the following reasons: the decision process is more important than the outcome, the implementation body is often different from the innovating body, the activity of initiating the project robs energy for implementation, and new crisis arise before any effective headway has truly been made towards the original problem.

Applying March and Olson's insights regarding decision-making to the introduction of FSC certification to Japan, we see that the hallmarks of a *garbage can* configuration are all in place. Therefore, it is plausible that FSC certification happened to be available at the time when desperation reached a point where forest industry people would try the most accessible alternative available at the moment. The desperation of the forest sector due to the increasing social and economic pressures depressing the forest industry and the location of the promoters at the margins of their organizations could have combined to bring FSC certification into the Japanese forest sector.

The insights gained from North and March and Olsen give us cause for concern about the implementation of FSC certification in Japan. There are problems which need to be addressed by innovation and experimentation. However, the actors promoting FSC certification in Japan may be doing so with expectations based on insufficient information. Certification has been introduced to Japan as a social instrument valuable in countries which Japan has looked to for innovation in the past but is not well understood in Japan. Instead of being scrutinized and analyzed to determine if it has value for application in the Japanese context, it appears that it is gaining popularity due, in part, to the value

placed on it by other societies. It could be being promoted as a valuable tool for social innovation for the forest sector in Japan primarily due to its success in other countries.

### **Certification as Possible Substitute for Lost Assurance**

Under these conditions, what could be influencing Japanese forest sector people to follow the FSC certification movement? A possible explanation for the phenomena of the acceptance of FSC certification by the followers of the movement in Japan's forest sector is based on Yamagishi's work on the role of assurance in Japan's collectivist society. Yamagishi states that one of the most problematic results of the current paradigm shift is the loss of the traditional long-term relationships which provided assurance in business transactions. With no other social institutions available to substitute for lost assurance, this paradigm shift in Japanese society could be influencing forest sector people to embrace FSC certification as a possible substitute during the time of change even though there are no clear rational economic reasons to accept and support it.

If Yamagishi is correct that the decline in the significance of traditional long-term business relationships in Japan has left a vacuum where assurance used to function to reduce risk, the loss of such an integral part of business operations could be pushing forest sector actors to a point of desperation so extreme that they realize that they have no other choice but to experiment outside of their traditions in attempting to respond to the current situation. This behavior is consistent with Yamagishi's predictions and observations related to the paradigm shift in Japan. It is possible that feeling loss of assurance could lead to a need for a substitute, and since FSC certification looks like a plausible substitute, those who need a substitute would support it. FSC certification could appear as a plausible substitute since its chain-of-custody resembles "in-group" standards that provided the benefits of long-term relationship assurance. Therefore, choosing to support FSC certification could emanate from the need to fill the vacuum left by the loss of the traditional patterns of Japanese business.

The paradigm shift and the social and economic pressures in the forest sector appear to be the reasons that FSC certification is gaining the support necessary for implementation, even though it does not seem to be an appropriate candidate for Japanese society. In this time of economic uncertainty, certification's function in trust-based, western societies could be giving it the appearance of being a substitute for the assurance which is being lost as Japanese society shifts toward including outsiders in everyday business transactions. This shift toward inclusion of outsiders is a new experience in most Japanese business

transactions. Having a vacuum where assurance once was creates tremendous insecurity about doing business with those with whom one has not had long-term relationships. In searching for ways to re-establish some measure of security, certification has the appearance of a social device which will provide some measure of assurance as relationships become more fluid and open to newcomers. In this view FSC certification functions like a personal reference. Personal references for newcomers have always been an important and necessary feature of Japanese society. Before newcomers are noticed and accepted by anyone, they must be introduced with their credentials and their associations (Nakane 1972; Sunder 1998). Japanese have relied on personal references to serve as evaluation for persons they haven't met before they will accept them.

Furthermore, North says that cheating, shirking, and opportunism are natural to transactions and third-party enforcement is necessary to provide legitimacy and equilibrium (North 1990). With certification, if there is periodical renewal, then that renewal could appear to function as a kind of enforcement. If evidence shows that a first party has lowered its performance below that expected for certification, certification can be taken away. Thus, with renewal perceived as enforcement, supporters of FSC certification could expect it to also serve as a substitute for the sanctioning and monitoring of the lost assurance system. They might also believe that the formality of certification as a social instrument can reduce risk and uncertainty, thereby, replacing the long-term relationships of the lost assurance system.

FSC certification could be viewed by its supporters as a replacement for the assurance which may be being lost in Japanese society. However, since Japan is not traditionally a trust-based society, it is important to remember North's warnings, thereby, not expecting the same outcomes in an adoptive society as certification has had in the societies where it originated. Certification may substitute for long-term relationships, but it may do so in a way that makes it function very differently in the forest sector in Japan from the way it functions in the societies where it originated. The vacuum created by the paradigm shift may be causing supporters of FSC certification to reach for a substitute that, in its original purpose, has no rational application in Japanese society.

If the paradigm shift is happening in the forest sector and if this shift is one of the main causes for the severe depression observed in the forest sector, there are reasons for innovation and experimentation, but none have been forthcoming. Concurrent with this situation, certification was introduced to Japan as a social instrument valuable in countries Japan has looked to for innovation in the past. In the vacuum of local innovation, imitation could have driven the introduction of FSC certification to Japan and still be a prominent factor in its growing

acceptance. Instead of being scrutinized and analyzed for rational application in Japan, it could be being accepted merely because of the appearance of positive performance outcomes in other societies which have been leaders in the environmental movement. It is unclear at this time what the outcomes of FSC certification will be in Japan. However, based on North's observations concerning outcomes when social instruments are adopted from another culture, there may be cause for concern about the implementation of FSC certification in Japan. As North mentions, if a social instrument is adopted from one society to another and if conditions in the two societies are different, it will not have the same outcomes in the adoptive society as it had in the one where it originated. The countries in which FSC certification originated, Europe and the Americas, have significant numbers of people who are concerned about environmental protection. This influence encouraged business people to create this scheme to meet consumer demand and respond to pressures from NGOs. They did this in order to be profitable. The situation in Japan is completely different — very few of these things exist. We can predict that the acceptance of certification will not have the same results in Japan that it has had in the societies where it originated. Most people in the forest sector are not aware of the possible divergent outcomes and their acceptance of FSC certification may be based on unrealistic hopes. It appears that FSC certification is being accepted in Japan based on insufficient information and vague expectations.

# Chapter 5

## Interviews with Forest Sector People

My decision to study the adoption of FSC certification in Japan grew out of my professional experience in the fields of finance and accounting. As an outgrowth of my research related to the changes in the field of accounting in Japan, I became interested in the current financial problems of the forest sector. Initiation of this research project began with an attempt to identify the causes of the financial problems, to find out if remedies were being proposed, and to discover which ones were successfully being activated to address the situation. During this process, I found that the industry was in a period of innovative stagnation. Proposed ideas for improving the situation were not finding support and the plans being activated to alleviate the financial decline were not finding success across the industry. Actors in the sector expressed hopelessness that anything could be done to remedy the situation. Coincident with my investigation of the forest sector's financial situation, I discovered that the movement to introduce FSC certification to Japan was being promoted in the forestry sector and that it was finding some support there. I also discovered that a significant number of actors in the sector were viewing it as a possible tool for improving the financial prospects in this industry.

### Preliminary Investigation of the FSC Certification Movement

In the summer of 1999, I began an informal investigation of the FSC certification movement in Japan by conducting informal interviews. These interviews provided many insights into the dynamics of the promotion of this movement and gave me an introduction to a growing group of forest sector people who were showing interest in the movement. This group included several Forest Agency personnel, several retired Forest Agency managers, researchers from institutions subsidized by government, private timber farmers, mill owners, wholesalers, financial consultants, and university forestry professors. I contacted many of these people to ask them about their impressions of the FSC movement. I asked them what factors were important in their decisions to join or not to join the promotion of the FSC certification movement.

During these months, I also attended FSC promotional meetings held by WWF Japan, first in Tokyo and later in forest communities throughout Japan. These meetings were industry oriented and attended mainly by local government administrators from prefecture level offices, sawmill managers, wholesalers, and timber farmers. I also attended workshops for the academic community

organized by university forestry professors. There was often overlap between business and academics in the attendees and the presenters at these meetings. The main purpose of both the academic and industry meetings was to gain support for FSC certification. I also joined the forest certification auditor training sessions sponsored by WWF and Sanwa Research Institute. SmartWood auditors from California provided classroom lectures, in-the-field simulations, and evaluated the participants' ability to perform audits at the standard expected from FSC. The other attendees were mostly members of forest industry associations such as forest management cooperatives, forest engineers' associations, consultants from forest management firms, local government personnel, and university professors and students. Even though the main purpose of the sessions was training, it was also clear that encouraging the promotion of FSC certification in Japan was a dedicated part of the agenda. All of these encounters helped educate me about the population I intended to study and helped me refine my research questions.

From talking with the people mentioned above and attending the meetings and sessions described above, I became aware that many of the people joining this movement did not have a complete understanding of the nature of FSC certification and its purpose. At meetings, I sometimes heard contradictory statements about FSC certification. There were frequent times when incomplete, sometimes inaccurate, information was disseminated with no challenge to its credibility. Discussions with some of the individuals involved revealed that they did not completely understand the purpose of certification and how it functions. It became more and more apparent that many of the promoters and followers of the movement were developing expectations for outcomes of FSC certification in the Japanese forest sector that were not congruent with the way that FSC certification has developed in countries where it has been successful.

Over the three years that I was involved with this movement, it continued to attract more promoters and gained a sizeable following. However, not all of the people who I met through the FSC certification movement chose to support it. From their opinions and their insights I developed a broader understanding of the dynamics surrounding the movement. I began to identify some of the personal and political motives of the promoters of FSC certification and heard some opinions and discussion about the possible inappropriateness and dangers of FSC certification to the Japanese forest sector, some of which were presented in Chapter 4 of this book. These views that FSC certification could cause unexpected problems for timber growers and that it is inappropriate for Japan were not opinions that I had heard openly or frequently discussed. I followed up on many of these observations to determine if they were opinions



based in fact and discovered that most of them were well thought out and credible. It was at this point in the investigation that my previous work in accounting made me wonder if the society-wide paradigm shift which has been affecting Japan's businesses over the last decade might be responsible in some way for the growing acceptance of FSC certification that I was witnessing in the forest sector. I turned to the literature and found the work of Yamagishi and other social scientists as potentially relevant to my investigation. Their work with the change in Japanese society and the associated loss of assurance as discussed in Chapter 4 of this book offered insights and possible explanations about the phenomena.

As a result of my investigation into the FSC certification movement and the application of insights from Yamagishi's work on the paradigm shift in Japan, I decided to focus on the relationship between the paradigm shift currently happening in Japan and the movement to introduce FSC certification to Japan. I began the formal investigation with the proposition that as the paradigm shift progresses, traditional socio-economic systems such as long-term business relationships, lifetime employment, and government regulations and subsidies will decline. The loss of these traditional securities in society could be felt as a loss of transaction and social assurance by those effected by the changes. The loss of assurance due to the paradigm shift could be central to the acceptance of this movement by those experiencing the changes in their business transactions and their social security. I chose as the main concern of my research an investigation into the reasons that some forest sector people are choosing to support this social instrument.

## **Interview Guide Development**

During this stage of the investigation, I decided that it was necessary to expand my knowledge of the range of attitudes that exist in the forest community with regards to certification. In order to accomplish this, I needed to have access to a wider sample of the population than my chance encounters at meetings and training sessions. I had developed many contacts with forest sector people during my months of working on this project, but I was concerned that the forest sector actors I had been involved with were not a sufficiently representative sample from which to base the creation of a formal survey. I chose interviews as a way to provide a more systematic assessment of forest sector actors and as a way to reach those who might not have been involved in the projects and meetings which I had had access to so far. By learning more about the research population, I hoped to discover an effective way to survey their attitudes about

certification, to refine my hypotheses, and to formulate the questionnaire that I would use in the later stage of the investigation.

I chose the focused interview format to initiate the formal investigation because it is a structured survey method but allows the respondents to elaborate on their views (Frankfort-Nachmias and Nachmias 1996). This suited my purposes well. The focused interview is conducted using an interview guide created from the research questions. The guide lists key questions which must be covered in each interview, but allows for the refinement and modification of the questions during the interviews. I wanted the respondents to have liberty to express their opinions and concerns and to explore their personal reactions and emotions, but I also wanted them to stay on track with my research questions. Using this approach, I could lead them to tell me why they were choosing to support or not support forest certification in Japan, what if any impact they are feeling from the paradigm shift, and what concerns they might have about issues related to assurance.

The interview guide that I created was divided into two sections. The first section was designed to find out how much the interviewees knew about certification in the forest industry, how much they knew about FSC certification, and whether or not they support FSC certification. The questions in the guide were as follows:

*Are you familiar with wood products certification?*

*Have you ever heard the name Forest Stewardship Council certification or FSC certification?*

*What do you think of FSC certification?*

*What is your overall impression of the FSC certification movement in Japan?*

*Do you support the FSC certification movement in Japan?*

The second part of the interview guide specified that it should be clearly separated from the first part for the participants. This would be accomplished by stating that now we would stop discussing forest certification, and that I would now like to ask some questions on the general topic of changes in Japanese society. The question that I would ask first is as follows:

*Have you noticed any significant changes in Japanese society over the last ten years?*

If the participant needed prompting, I would follow the first question with one or more of the following optional questions:

*Have there been significant changes in your industry?*

*Have there been significant changes in your ways of doing business?*

*Have there been significant changes in your community?*

*Have there been significant changes in the family structures of your family or other families in your community?*

The interview guide specified that, depending on the answers given to the preceding questions, I should follow up when possible with a question or questions related to desire for new forms of assurance. Each follow up question would be modified to relate to the exact situation the participant would be describing. Examples of these kinds of optional follow up questions that could be used if necessary were as follows:

*What impact has this change had on you?*

*Has this change caused you to be more or less secure?*

*Has this change created a sense of gain or loss?*

*Has this change made you aware of needing to replace anything?*

The intent of this interview guide was to provide an element of consistency over time and different situations. As long as I included the questions in this guide, I was free to use any others that I thought might encourage extensive responses from the participants.

## **Interview Procedure**

To gain access to large numbers of potential participants who would cooperate willingly, I chose three forest sector associations with which I had developed close ties to the leaders. Within the membership of these organizations, I chose individuals who would represent all aspects of the forest industry. I also chose to make sure that none were promoters of FSC certification since I believed their participation would bias the results.

Selecting these organizations gave me access to Japanese forest sector people who come from the full spectrum of attitudes and knowledge about certification. I carefully chose persons who would represent as many different roles in the forest industry as possible by working with each of the organization leaders. These leaders provided recommendations and information about those they recommended. They also provided lists of the members with information about the nature of their business and their locations. From the lists and the recommendations, I selected those persons that I would ask for permission to interview.

I conducted 58 focused in depth interviews with forest sector actors between June 2000 and May 2001. The interviews generally lasted 45 minutes to an hour. The respondents were all volunteers and were without exception very cooperative and open in their discussion of their opinions and feelings. I began each interview by telling the participant that I was conducting this interview as part of a research project on forest certification. I told them that the information that

they provided would be used without their names and with no descriptions that would identify them personally.

The purpose of the first section was to find out how much the participants knew about forest certification and whether or not they supported it. After having conducted only a few interviews, I changed the questions in the first section to include ISO as well as FSC. I added ISO because in the first interviews, ISO came up voluntarily. Therefore, I decided to include ISO certification to compare familiarity with certification schemes for all participants.

Since it is very common in Japanese culture for a person not to voice an opinion that is limited to a yes/no answer, the sequencing of the questions in my guide for this section worked well. The first questions encouraged the respondents to explain their opinions about these certification schemes before being asked whether they support or do not support one or both of these schemes. By eliciting their opinions first, everyone, even the most reticent, became comfortable enough to voice their reasons for supporting or not supporting certification.

The purpose of the second section was to determine if the participant recognized the paradigm shift. The first question was whether or not the participant had experienced any major social changes over the last ten years. If the participant was puzzled by this question, I used prompts such as asking if they had noticed any changes in their daily lives or in their dealings with people or organizations. I encouraged extensive answers by prompting the participants until they began to openly discuss their opinions and feelings.

To address the desire for new forms of assurance part of my investigation, I used their responses to the questions about changes in society as the springboards for asking about whether they felt more insecure due to the changes than before the changes, and if they felt something was missing. I then asked questions related to the response which would encourage the participant to discuss their needs and any ideas they might have concerning replacements for lost securities due to the changes in society. I followed this protocol for this section of the interviews with all participants and found that almost all participants cooperated well, some were very talkative with only the initial question asked, and almost all opened up with some prompting, providing spontaneous lengthy discussions.

## **Interview Findings**

In reviewing the interview responses, it became apparent that the respondents who support FSC could be divided into two groups and the respondents who do not support FSC could also be divided into two groups. The basis of this

categorization was first, whether they support or do not support the FSC certification movement in Japan, and second, was whether or not they are well informed about forest certification. Those persons interviewed who have little knowledge of forest certification and support FSC certification, I assigned to the S1 group. Those who are well informed and support FSC certification were placed into the group labeled S2. Those persons who are not well informed and do not support FSC certification were placed into a group I labeled NS1, while those who are well informed and do not support the movement were placed in a group labeled NS2. Other opinions and attitudes were not unanimous in each group but were voiced often enough by members in each group to further characterize the groupings. The opinions and attitudes indicative of each group are described below.

**Table 1** Classification of Interviewee

	Supportive for FSC	Not supportive for FSC
Poorly informed	S1	NS1
Well informed	S2	NS2

## **S1**

Of the 32 participants who fell into the group I labeled S1, all revealed that they have little knowledge about certification. Most reported that they have based their support on the information they have received from promoters such as local government officials, university academics, and NGO representatives. When questioned about the reasons for their decisions most of this group expressed trust in one or more of the officials named above. Within this group of supporters, the overwhelming sentiment was the hope that FSC certification would improve the financial situation of the forest sector in Japan. Their comments indicated that most of them see forest certification as a new and interesting international trend with the potential to be a solution for some of Japan's forest sector financial problems. Generally, they did not express critically appraised opinions revealing that they are only marginally informed about certification. They stated that they trust the opinions of those authorities they see as well informed on the subject and have not explored opposing opinions. Most of the persons in this category expressed their openness to international ideas and their belief that without outside influence the Japanese forest sector will not be able to solve its problems.

One forest farmer in this group reported that after many years of financial hardship because of the drop in timber prices, he has accumulated significant debt that he must pay to his credit union. He sees his situation as a very serious one and is at a loss for finding a way to improve his situation. He has considered selling his lands which have been in his family for several centuries. When I asked him about FSC certification, he did not immediately recognize FSC nor certification. After some explanation, he recognized it and said that he had agreed to support it. He then described a visit from a university forest professor who convinced him that certification would improve his situation. Upon recognizing FSC certification he expressed his hope that this professor and the FSC movement would help him improve his situation. He was obviously uninformed about FSC certification but willing to rely on the opinion of the forestry professor because of the professor's association with a well-respected university. He specifically stated that he intended to support FSC certification.

A local government forester told me that he had submitted a proposal to his office to support FSC certification. He said that his forestry community was in very poor financial condition, and that many timber farmers and his bosses were looking to him to find new helpful ideas. He did not want to be criticized for being ineffectual in his job. He stated that the main reason that he had chosen FSC certification for a management plan proposal was because a forestry professor had convinced him that this scheme would be good for the local community. When I asked him about how forest certification functions, he was unable to provide that information. He reported that he was relying on the forestry professors.

A prefecture official in charge of local forest products' promotion said that in order to get annual funding for their budget, his prefecture requires a new proposal from his office each year. He said that it is hard to find new projects year after year, and that FSC certification seems to be a new and interesting idea from outside Japan. He was introduced to FSC certification by WWF Japan and was impressed by the possibilities described to him. He is using that information to include FSC certification in his budget proposal for the next year. He sees FSC certification as an appealing ready-made project for his new budget proposal. He said that he does not yet understand how certification works and how it functions, but is trying to gain more information about it.

One private timberland owner mentioned her lack of confidence in Japan's national Forest Agency. She complained about the publications that show the well controlled forest management plans and inventory systems for privately owned forests as well as publicly owned forests that the agency circulates. She described these as *e ni kai ta mo chi* "rice cake drawn on paper" meaning "pie in

the sky.” She said that everyone in the industry knows that the Forest Agency’s plans are only propaganda and will never work. However, she said that she is hoping that since the FSC certification movement has been implemented successfully in many other countries and since it is being promoted by researchers and internationally connected people in Japan, maybe it will be the breakthrough that is so seriously needed for timber owners in Japan. She decided to place her trust in a local government official who is supporting FSC certification and is also very critical of the national forest plans which the Forest Agency created. She had learned a little about FSC’s history but has not yet learned much about how certification functions.

Another local government official voiced similar attitudes concerning his opinion of the Forest Agency. He stated that the agency is incapable of bringing any help to forest farmers. He was very frustrated that local level forestry officials are hampered in being able to help the farmers because they are controlled by national level plans. He became a supporter of FSC certification because it is a potential way to circumvent the national level controls. He said that he would become an open promoter of the movement if it would not cause him to be criticized due to his position. His introduction to FSC certification was by university forestry professors and WWF FSC promoters. When I asked questions about certification, he was unable to describe how it actually functions because of his lack of experience with this kind of social instrument.

Several forest farmers in this group said that they don’t have any expectation or hope for how they can survive in the current situation. They said that they are supporting FSC certification because they have to do something new. Several of them mentioned that the promoters have told them that FSC certification is an international standard. They voiced their opinions that because FSC certification is being promoted by well-respected university professors and knowledgeable government officials, they see no reason to refuse to support it. If those authorities think that FSC certification has the potential to create a breakthrough to a better situation, these farmers plan to support the movement.

## **S2**

The cluster of respondents which fell into the group of supporters that I labeled S2 consists of persons who feel that forest certification is inevitable in the Japanese market. Of the 14 people in this group, all expressed the opinion that due to international pressures and market trends, certification will have to be adopted in Japan whether it is appropriate to the Japanese forest sector or not. Many in this group mentioned that they believe that they have to support forest certification to defend their businesses against imported certified timber and

timber products. Most in this group are significantly more knowledgeable about certification than the S1 group of supporters and are not impressed with international trends as being valuable to Japan nor the idea that certification is a potential solution for Japanese forest sectors' financial problems.

One sawmill and timberland owner said that she does not like forest certification because it costs a lot, but she stated that she has to prepare for this movement at this early stage of its development. Based on what she has heard about this movement, she believes that she will have to be a "first comer" in order to maximize the possible advantages. Unless her operations are some of the first to be certified, she might lose the advantage which certification seems to offer. She doesn't plan to apply for FSC certification immediately because of the cost, but she wants to get prepared through attending conferences and workshops and talking to people to learn as much as she can at a minimum cost. She said that she will support FSC certification as a follower but is reserving her final decision about certifying her businesses until she learns more about it. Her discussion of how certification functions indicated that she is already fairly knowledgeable about it.

Another sawmill owner reported that he has already applied for and received ISO 9000 and 14000 series certification. He did this in the very early stages of the ISO introduction to Japan's forest sector. He thinks that people in Japanese society especially in the timber processing industry will become more and more conscious about environmental protection; therefore, the reason that he got interested in certification and the FSC movement is because he thinks others will follow it. He imports logs for his business and is therefore familiar with what is going on outside of Japan. He knew that many certified products are imported into Japan's market as uncertified due to the lack of chain-of-custody in Japan. He believes that he must support certification because if he does not he will be left out of this market when chain-of-custody for certification is more developed in Japan. His discussion indicated that he is very well informed about how certification functions.

### **NS1**

Within the non-supporters I gave the label of NS1 to a cluster of 10 respondents who are similar to the S1 group of supporters mentioned above because they have little to no understanding of what forest certification is. They are opposite to the S1 group in that they have no confidence and trust in the authorities promoting it. They are very skeptical of government, academic, and NGO forest sector actors. They see them as interfering in local affairs with little understanding of local issues. Most of the persons who fall into this group have had



bad experiences with one or all of the above mentioned authorities. When asked for details, all of them voiced the opinion that government at all levels has abandoned their interests. Many of them expressed the opinion that the promoters of forest certification are doing so for reasons other than the financial health of the forest industry. Many of them also voiced skepticism of anything non-Japanese as lacking relevance to the problems facing Japan's timber industry.

One large-scale timber farmer described a very bad experience with an innovation in forest management that was recommended by the Forest Agency and caused many financial problems for his business. In the early 1950s, he implemented in cooperation with the Forest Agency a new forest management plan which at the time was called "*kakudai zorin*" (National Accelerated Afforestation Program, NAAP) by adopting new silviculture methods, building new roads, and purchasing new machinery. As part of the program he cut all of the hard woods on his land in order to replant with fast growing sugi (*Cryptomeria japonica*) at a time when the price for the hardwoods was low. His lands are now near harvest age and are *sugi* monoculture and all same age. Even though he has loans to pay off for the implementation of the NAAP on his lands, he will not harvest because the cost of harvesting is higher than the market price. However, if he had continued to selectively cut the hardwoods as he was doing before he changed his practices, the price for the hardwood is high enough in today's market to offer a profit. He is very disillusioned with the newer forest management plans as well as with promoters of new plans even if they are authorities in their fields. He used to be very cooperative and accepted any request from the government agencies and university forestry professors with their research. Now he does not cooperate with any agencies or university professors. He believes FSC certification is just another way for NGO representatives, university professors, and government officials to promote their own interests. He predicts that the movement will end as fads end without having successfully helped the forest land owners.

## **NS2**

The group of non-supporters that I labeled NS2 is similar to the S2 group of supporters because they are also well informed about certification. The 2 people in this group, however, have fears that forest certification is not applicable to Japan's domestic market and will in fact make things worse for many in Japan's timber industry. The respondents who fall into this group have identified negative results for Japan's timber industry if Japan adopts forest certification. Generally, this group is open to innovation but critical in considering outcomes.

One retired forest professor who owns extensive holdings of mountain forest land said that there are many people in the forest sector who need help to survive, but it is important to consider that they are not all in the same situation. The smaller-scale and less profitable operations of timber farmers and mill owners need innovations and changes to help improve their situation, but certification will not work to help them because certification requires an expensive entry fee. This fee to become certified is very difficult for already financially depressed businesses to pay. Since certification would divide Japanese timber producers into certified and non-certified producers, thereby forming “good and bad” categories, it would probably be those who need help the most who would be left out. They would fall into the “bad” category even though their lands are no worse managed and possibly better managed than the larger businesses. Because of the expense of certification, those who are already better off will improve their advantages and those who really need help will be worse off because they will not be able to afford certification.

Due to my observations of the introduction of certification to Japan over an extensive time period, I was already aware of many of the attitudes expressed by those I interviewed. I expected the level of how informed a person was about forest certification to play a major role in their decision to support or not support certification. However, from the responses I received in these interviews, I became aware that having or not having trust in the authorities promoting certification and attitudes toward international trends seem to be playing a more decisive role in the choices forestry persons were making than I expected.

The second topic I introduced in the focused interviews was that of the paradigm shift currently happening in Japan. In order to determine if a respondent felt that a paradigm shift is affecting the forest sector in Japan, I opened the discussion by asking if he or she felt that there were social and economic changes happening in Japan and asked them to explain their experiences with those changes. A few of the participants said that they did not see significant changes happening in the forest sector nor in Japanese society as a whole. Some of the respondents talked about changes in the market, changes in employment, and changes in their business relationships. Some respondents discussed issues such as the impacts of government deregulation on business practices and the acceleration of competition for clients, capital, and resources. Several respondents voiced concerns about finding new ways to promote their businesses. Some are worried about locating reliable providers of the services and resources they need to operate efficiently. The change from long term employment to a more fluid employment environment was mentioned several times with the observa-

tion that Japanese businesses were not as committed to their employees as they were in the past and that employees were less committed to their employers. Some respondents discussed the decrease in the strength of family ties as an indicator of significant changes in Japanese society. Their experiences provided valuable insights I could use to create survey questions relevant to whether or not they were feeling the impact of the paradigm shift. Their reactions to the questions I asked helped me select survey items which respondents would most readily identify with and understand.

One timber farmer with a mid-size operation reported that he has not seen any positive developments in the forest sector over the last 20 years. He described the situation as one that has been gradually changing for many years. Timber prices in the market have been on a steady decline over more than 20 years and younger people have been leaving the community for longer than that. The only people left in his community are all over 60 years old now. Younger people leave for higher education and don't want to return because there are no jobs. They find high paying jobs in big cities and create new lives away from their hometowns. He said that this has been happening for many years and the changes have been accumulating slowly. He does not see any big new changes happening over the last ten years.

Another timber farmer with a mid-size operation said that due to the significant drop in prices for logs, timber farmers have been suffering financial losses for a long time. He pointed to the fact that sawmill operators have changed their business practices by shopping around for the cheapest prices for logs and purchasing logs anywhere they can get the best price. This has caused local timber farmers to lose their market for their timber since they cannot find other markets. Also, he complained that due to the high cost of transportation, local timber farmers are limited to selling to local sawmills. However, local sawmills can afford to pay transportation costs to bring in logs from other markets, mill them, and still sell their milled timber at a price that can allow them to make a profit. He said that this is possible because the price for finished products has not fallen like the price for logs. He also stated that this change in the business practices of the sawmill operators has changed the community. Before this change, the sawmill operators and timber growers had very close relationships making the community like a large extended family. Now they are just client and customer without strong community ties. Before imported timber came into their community, the timber farmers were a little better off than the sawmill operators, but now, that has changed and the saw mill operators are financially better off than the timber farmers. He believes that these changes are due to the government deregulation of transportation and importation of foreign products.

One sawmill owner reported that he had to give up employing long-term workers in his business and that he is very disappointed about this. He claims that hiring long-term workers increases fixed costs and makes his financial statements look worse. Today, he hires international short-term contracted employees at lower wages than he paid for long-term locally hired workers in the past. He now has three Japanese-Brazilian international contract workers and plans to hire two more as trainees because he can get extra subsidies from the government if he employs these Japanese heritage Brazilian workers. The Japanese government has specific immigration regulations that are more lenient to non-citizens who are of Japanese heritage. He sees this as a big and sudden change in his business practices, but one that he has to make to survive.

A large-scale timber farmer proudly reported that his family has owned his timberland for more than three centuries. Historically, the male children have succeeded the fathers in passing the land and business down through the generations, and most of the other family members have worked in the business. However, he is very sad today because his sons do not want to come back to their home to live and take over the business. They do not see tree farming as profitable nor a lifestyle that they and their families want to pursue. This timber farmer deplors the decrease in the strength of family ties and believes it has been caused by the decline in the timber farming business.

The third topic I introduced in the interviews was the concept of desire for new forms of assurance. I did this first by asking about insecurities that the respondents might be experiencing. They responded with concerns about changes in family relationships, retirement issues, social welfare, subsidies from governments, and job security. Many of their concerns were directly related to the reduction in the role of government in business and personal matters. The cancellation of government programs such as forest subsidies, safety nets for financial transactions, and tax sheltering were blamed for creating insecurities in business. The reduced commitment of government and private companies to their employees was blamed for personal insecurities. Many voiced concerns that family ties were weakening and, therefore, the basis of societal conduct was becoming less and less secure. To extend this discussion, I asked what they would do to re-establish the securities that they are losing. Some people said they want more public support such as additional social security or additional government subsidies. Others said that they have to seek securities on their own by creating new ways of finding customers and building business relationships. Several mentioned adopting new social devices such as performance ratings and professional opinion references. A few mentioned certification. The opinions and ideas expressed in this part of the interviews allowed me to select questions for

the most difficult part of the survey to create. I was able to hear from a cross section of the forest sector about the real issues that underlie their feelings of insecurity and desire to find replacements for the lost familiar securities. From these comments I devised questions which would measure the attitudes of the survey respondents related to desire new forms of assurance.

A sales representative of a timber products company reported that he feels very insecure due to the reductions in social securities such as pension plans and unemployment insurance. He is worried about these things because he believes he no longer has lifetime employment with his company. He thinks that in the next year or so his company will have to go through downsizing to survive and that he will be one of the employees who will be laid off. He joined this company immediately after graduation from a local high school and has spent more than 30 years working for them. He has devoted his whole working career to this company and does not have any marketable skills that he can use to get a job at the same level as the one he has now. He believes that the securities that he trusted are now disappearing and he does not see any replacements.

One timber farmer with a mid-scale operation said that his financial position has been getting worse and worse since the price for *sugi* logs had fallen. To make matters worse for him, both the Forest Agency and government of his prefecture changed their policies recently readjusting the few remaining subsidies for timber farmers. Those agencies decided that it was more cost effective to support large-scale farming operations rather than the smaller ones with subsidies and tax break incentives. This decision was made because government officials determined that larger-scale operations were more efficiently managed and were better investments of government money and support. He sees this as further indications that small and mid-scale timber farmers have been abandoned by government and no longer have anything to fall back on. He wants to have more official support to improve and maintain his forest.

As mentioned before, the people who participated in these interviews were very cooperative. Almost all of them openly discussed their concerns and voiced their opinions on the topics I introduced to them. From these interviews, I became much more familiar with concerns that persons in the Japanese forest sector have not openly voiced. Some of the well-informed respondents divulged criticisms and possible negative outcomes in this one-to-one focused interview format which I had not heard in public forums, written materials, nor in small group conversations. I was also made aware that in this relatively small but representative sample of the population the level of information that the respondents have about certification is generally low, and many of them have information that is inaccurate and misleading. Some influential persons have misleading

and biased information while others are very well informed through their own efforts to self-educate themselves on the subject. The decisions of some respondents as to whether they support or do not support forest certification were revealed to be primarily based on their personal relationship with others in the industry who have taken public stands on the issue.

Furthermore, in these interviews I noticed that persons who are actively trying innovative ideas are located in the margins of their organizations as predicted by North and mentioned in the chapter 4 of this book. Several of these innovators have changed from one company to another in order to gain variety in their work experience, which is very unusual for Japan. During the process of changing jobs they are in fact serving as channels of movement of information across traditionally closed boundaries within the forest industry, as described by Granovetter and mentioned in chapter 4 of this book. It is also worth noting that concern for environmental protection was almost never mentioned in these interviews, which further indicates that even though FSC certification was introduced to Japan by WWF, a green movement NGO, the acceptance and support for FSC certification is not driven by concern for the environment. Discussions in these interviews related to the value of forest certification for Japan focused almost entirely on its potential as a tool to revitalize the financially suffering forest sector.

In conducting these interviews, I did not expect the respondents to provide data for analysis to prove or disprove a hypothesis. I intended for these interviews to help refine the research questions and form a testable hypothesis. The information from the interviews was coded only in so far as categorization would provide insights about how I could write questions relevant to all participants who would be surveyed in a later stage of the investigation. This helped me systematically select from the large number of questions which I had considered as possible ways to access attitudes related to the paradigm shift, assurance, and forest certification, the ones that would be relevant to all in every group. I was encouraged from the results of the interviews because they did help to refine hypotheses and were also very valuable in helping to generate survey questions relevant to the population I intended to survey.

# Chapter 6

## Empirical Evidence

The initial goal of this research project was to gain a better understanding of the relationship between the paradigm shift currently happening in Japan and the movement to introduce FSC certification to Japan. As I followed the development of the FSC certification movement, researched the literature, and reviewed the results of the focused interviews, I found more and more evidence indicating that the impact of the paradigm shift currently happening in Japanese society was being felt in the forest sector and that the paradigm shift could be a significant factor contributing to the acceptance and support of the adoption of FSC certification by people in the forest sector. Furthermore, evidence also indicated that the loss of traditional assurances due to the paradigm shift was an important factor in this phenomena. As the paradigm shift progresses, social assurance which was created and maintained through traditional socio-economic systems such as long-term business relationships, life-time employment, and government regulations and subsidies has continued to decline. If people feel less secure in business as well as in their social lives, forest certification could be viewed as a possible substitute for the lost social assurance. Therefore, loss of assurances due to the paradigm shift could also be one of the main factors contributing to the adoption of FSC certification in Japan.

## Hypotheses

Based on the preliminary investigation and the interviews described in the previous chapter, the relationships between three constructs, impact of the paradigm shift, loss of assurance due to the paradigm shift, and support for FSC certification, were hypothesized. The loss of assurance due to the paradigm shift would be conceived as “desire for new forms of assurance” and as a key mediating construct between the constructs of “recognition of a paradigm shift” and “support for FSC certification.” The logical sequence would be that if a person was feeling the impact of the paradigm shift, the resulting changes would be felt as loss of security in both their professional and personal lives. Those securities were the assurances which society had provided previous to the paradigm shift. If a person felt the need to replace the lost securities with new securities, then they would desire new forms of assurance. If the person desired new forms of assurances, he or she would be more likely to accept innovations and more likely to support FSC certification.

Using this method, I developed a hypothesis, two sub-hypotheses, and a

mediating hypothesis. The main hypothesis states the relationship between the recognition of the paradigm shift and support of FSC certification.

*H1: Those people in the forest sector who believe a paradigm shift is taking place in society will be more likely than those who do not believe a paradigm shift is taking place to support the FSC certification scheme implementation into Japan.*

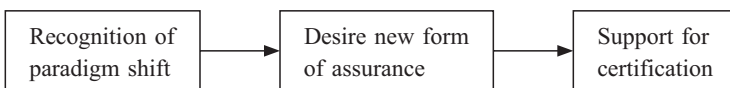
The following two sub-hypotheses are related to the causal process: belief in a paradigm shift leads to belief that a new form of assurance is needed and, therefore, a belief that certification might be useful as this new form of assurance.

*H2: Those people in the forest sector who believe a paradigm shift is taking place in society will be more likely than those who do not believe a paradigm shift is taking place to believe there is a need for a new way to create assurance.*

*H3: Those people in the forest sector who believe a new form of assurance is needed will be more likely than those who do not believe a new form of assurance is needed to believe certification can fill that need.*

It is possible that the only reason belief in a paradigm shift is related to support for certification is because it raises concerns about assurance. By controlling the effects of desire for assurance, there should be no relationship between recognition of a paradigm shift and support for certification. The following hypothesis will be used to test this possibility.

*H4: Need for a new form of assurance will fully mediate the relationship between recognition of paradigm shift and support for FSC certification.*



**Figure 1** Logic Path in Hypotheses

To test these hypotheses, I chose the survey methodology. I decided to use a written survey questionnaire since I intended to survey a larger population than would be practical using the interviewing method. The large number of survey items that were developed during the preliminary investigation and interviews had potential for the survey but needed to be refined and selected for efficiency. In order to develop the scales for the survey effectively, I constructed two pilot tests and analyzed results to select the most effective items.



## Scale Development

### *Items Generation*

In designing the empirical research for this study, it was necessary to create scales to measure participants' attitudes, which are associated with the recognition of the paradigm shift, desire for new forms of assurance, and support for FSC certification. In my search of the literature, I was unable to find any scales that could be directly used to test the hypotheses of this dissertation. However, in this investigation, I found previous research in which specific scales were created to measure constructs which were similar to the constructs in this research. I selected scales which might be usable from *Psychology Scale Database* as well as *Shinri Shakudo File*. These collections from the fields of clinical and social psychology provide researchers with scales successfully used in Japan to test attitude (Hirooka 2001; Hori 1994). I did not try to find any scales that were created outside of Japan mainly because if non-Japanese language scales were used, I would have to consider "back translation" issues to maintain accuracy. I decided not to do so because this research does not include international comparisons of attitudes.

I selected several candidate items from the scales mentioned above. However, the items for my research needed to measure not only the participants' attitudes toward general social change but also changes in their business and industry. Since none of the scales I reviewed are directly associated with my constructs, recognition of the paradigm shift and desire new forms of assurance, it was necessary to create additional items for the scales to measure these two constructs. I was able to use the responses from the focused interviews to create those additional items.

As for support for FSC certification, I found no scales previously created to measure participants' attitude on support for FSC certification. Also I could not find any scales to measure attitude on participants' support of specific social instruments in Japan. Frankfort-Nachmias and Nachmias (1996) show that we can describe individual attitude by content (what the attitude is about), their direction (positive, neutral, or negative feelings about the object or issue in question), and their intensity (an attitude may be held with greater or lesser vehemence). I decided to create a new scale to measure participants' attitude on support for FSC certification following their ideas.

I was, however, able to find two scales that had been used successfully in previous social psychology research that appeared to offer some items that I might be able to use. Both of the scales came from *Shinri Shakudo File* mentioned above. I used scales from this book as models to create the other items for my

questionnaire based on information from the interview responses. From these sources I created the candidate items to measure each of the three constructs, recognition of paradigm shift, desire new forms of assurance, and support for certification.

From the interview responses described in Chapter 5, I obtained useful information to create items for the first draft of the research survey questionnaire. Based on these responses, I made candidate items associated with issues such as those below to create a scale to measure recognition of the paradigm shift:

*changes in the timber market*  
*changes in consumers' behavior*  
*changes in logistics*  
*changes in employment*  
*changes in business relationship*  
*accelerated business competition*  
*loyalty to an organization*  
*government deregulation*  
*equality of the sexes*  
*changes in seniority systems*  
*changes in family relations*  
*changes in general Japanese society*

From the interview responses, I made candidate items associated with issues such as those below to create a scale to measure desire new forms of assurance:

*retirement*  
*social welfare*  
*job security*  
*taxation and subsidy*  
*insurance and savings*  
*laws and regulations*  
*professional recommendation*  
*rating and accreditation*

To measure how much subjects support forest certification, I made candidate items associated with issues such as those below to create a scale to measure support for FSC certification:

*familiarity with the concept of forest certification*  
*expectation for monetary benefits*  
*expectation for emotional rewards*  
*expectation for promoting sustainable forest management*  
*trustworthiness due to international reputation*

### ***Pilot Tests and Item Selection***

In total two editions of the survey questionnaire were sent out for pilot testing. These pilot tests were implemented to select the most effective items of the candidates to create two new scales, the *Paradigm Shift Scale* and *Assurance Scale*. After the first edition was analyzed the questionnaire was revised and sent out again. For the first edition, the questionnaire had 42 items designed to measure the two constructs, 22 for recognition of paradigm shift and 20 for desire new form of assurance. Three hundred fifty questionnaires were sent out to the sample population by regular mail. The participants were selected randomly from the directory of a forest owners' association.

On hundred and twenty one completed questionnaires were returned. I conducted factor analysis with principal component solution (without rotation), as well as calculated Cronbach's Alfa on the candidate items for each construct separately since the format of the questions for the two constructs was different. I selected 18 items, 10 items for recognition of paradigm shift and 8 for desire new forms of assurance, for the second edition of the pilot test. Reverse-coded items were recoded to maintain the same directions with other items before conducting factor analyses. Their average factor loadings are .57 and .63, and their Alfa coefficients are .72 and .74, respectively. The second edition was sent to another 216 persons from the forest owners' association who did not participate in the first editions of the pilot test. In this sample, 97 persons returned completed questionnaires by regular mail. When these questionnaires were returned the same analysis was repeated, and of the 18 items a total of 10 items were selected for use in the final survey, 5 items for each construct. Table 2 and 3 show the results of the factor analysis and the Cronbach's Alfa for the second pilot test. From the factor analysis, Factor 1 on both tables seems to represent the constructs, "Recognition of Paradigm Shift" and "Desire New Form of Assurance" which I want to measure in this study respectively. In both tables, Factor 2 and 3 do not appear to be interpretable, and, therefore, only Factor 1 looks meaningful. As a result, I selected these items which are high only for Factor 1 and created scales. I named these two scales *Paradigm Shift Scale* and *Assurance Scale* respectively. Cronbach's Alfa coefficients for each scale are also reported on Table 2 and 3.

To create a new scale to measure the construct, support for FSC certification, I set up a web page survey for a pilot questionnaire. The internet home page was created with CGI and Perl to maintain the survey's quality as well as to maintain privacy for the participants. CGI or the Common Gateway Interface is a standard for external gateway programs to interface with information servers such as web servers, permitting interactivity between a client and a host operating

**Table 2** Result of Pilot Factor Analysis: Recognition of Paradigm Shift

Item	Factor 1	Factor 2	Factor 3
Competition increase in business	<b>.68</b>	-.06	-.51
Prices over goodwill and reputation	<b>.65</b>	-.26	.13
No more keeping close relationship with customers	<b>.61</b>	.28	.04
Importance of returning favors and being considerate*	<b>.59</b>	-.05	.27
Reluctance to begin new customer relationship*	<b>.59</b>	-.01	-.59
Significant change in general Japanese society	.63	.01	.56
Decline of tradition and custom in industry	.55	-.31	.31
Increased loyalty to company*	.58	.54	-.30
Decrease in gender roles in business	.38	-.69	-.04
Disappearing seniority system	.24	.63	.35

Eigenvalue=3.21

Percent of Variance Explained=32.14%

\* =reverse item

Cronbach's Alfa = .70

**Table 3** Result of Pilot Factor Analysis: Desire New Forms of Assurance

Item	Factor 1	Factor 2	Factor 3
Purchasing unknown brand product with retailer's guarantee	<b>.69</b>	-.09	-.31
Support new social security programs with tax raise	<b>.67</b>	.09	.05
Trusting a loan guarantee corporation over an individual	<b>.63</b>	-.36	.20
No business with strangers even with reference in the trade*	<b>.62</b>	-.10	.23
No trust in companies' ratings*	<b>.55</b>	-.39	-.25
Saving money for unforeseen emergencies	.65	.51	-.12
Add more rules provide security in Japanese society	.25	.74	.27
Japanese society is moving toward a better situation*	.06	-.20	.86

Eigenvalue=2.53

Percent of Variance Explained=31.29%

\* =reverse item

Cronbach's Alfa = .68

system through the World Wide Web via the Hyper Text Transfer Protocol (HTTP). This system can be written with any languages and Perl is one of the most common languages to be used with this system. I did not use any paper versions of the pilot questionnaire for this construct. To complete the survey the participants logged in with the URL that I assigned to each by email.

One hundred twenty six emails were sent out to the members of a forest

certification study group which is operated by a forest management and policy research institute. This study group is a group of volunteers consisting of people who were interested in forest certification. The majority of the members are local government administrators and policy planners who have business connections with this research institute for issues related to forest business and management. The questions on the questionnaire were all about general timber certification, and not FSC certification specific. The reason I chose members of this group as participants for the pilot test was that they are rather familiar with the concept of FSC certification compared to the members of other organizations, and I could access all of the members by email. I sent each member an email asking them to join the survey and assigned a unique URL for each person. Out of 120, 67 participants actually participated in this cyber questionnaire and the same analysis was conducted as was conducted for the surveys for the other two constructs. Of the 10 items, 7 were selected for use in the final edition to create a new scale, *Support Scale*. The results of factor analysis and Cronbach's Alfa for this pilot test are also shown in Table 4.

**Table 4** Result of Pilot Factor Analysis: Support for FSC Certification

Item	Factor 1	Factor 2	Factor 3
FSC certification contributing to Japanese forest sector	<b>0.85</b>	-0.30	-0.10
Familiarity with FSC certification	<b>0.84</b>	0.10	-0.10
FSC beneficial to your own business	<b>0.82</b>	-0.06	-0.07
FSC good for Japan in general	<b>0.82</b>	-0.20	0.09
Japanese forest sector's support for FSC certification	<b>0.80</b>	0.11	-0.07
FSC certification promoting world-wide forest sustainability	<b>0.75</b>	0.41	-0.01
Trust in FSC certification's international reputation	<b>0.73</b>	0.04	-0.17
Japanese consumer supporting FSC certification	0.57	0.04	0.57
FSC certification functioning well in Japan	0.52	-0.10	0.63
FSC certification encouraging ecoactivity in Japan	0.37	0.77	-0.32

Eigenvalue=5.43

Percent of Variance Explained=49.41%

Cronbach's Alfa=.87

The final edition of the questionnaire has 5 items for recognition of paradigm shift, 5 items for desire new forms of assurance, and 7 items for support for FSC certification. Furthermore, I put 10 additional items to collect demographic information and 7 additional items to ask participants about their attitude toward other forest certification schemes such as ISO.

## **Scales**

### **Paradigm Shift Scale**

For this scale, I provided five statements of opinions related to social and business issues and asked participants to respond in two ways for each opinion. First, they were asked to describe how they assume that people around them would have thought about this specific opinion 10 years ago. Second, they were asked to describe how they assume people around them think now. Seven-point Likert scales were used for all questions ranging from 1, “very strongly disagree,” to 7, “very strongly agree.” Each item consisted of this pair of sub-questions. Because the purpose of these questions was to measure changes in their opinions over the ten-year period, using a seven-point scale was better to detect small changes than using narrower scales (e.g, 5-point scale). For each pair of the items, a score was calculated by taking the absolute value of the difference between the two paired answers. A composite score for each participant was calculated by averaging the absolute values of all the items. Each composite score was then converted to a five-point scale (the same range as the other two measures).

The Paradigm Shift Scale consisted of the following items:

1. *Competition in business is very sharp.*
2. *In choosing customers, prices are more important than goodwill and reputation.*
3. *It is not important to keep close relationships with your customers.*
4. *Returning favors and being considerate are important in every situation.*
5. *Doing business with strangers is less desirable than with acquaintances.*

This scale measures sensitivity to social change by asking the participants to consider a composite of the feelings of the people in their environment rather than only their own individual reactions to an item. Some people are more sensitive to changes in society than others and this method is intended to encourage the participant to consider the bigger picture.

### **Assurance Scale**

The response set for all items ranged from 1, “very strongly disagree,” to 5, “very strongly agree.” Each score for all the items in this scale were averaged to create a composite for the scale for each participant. The Assurance Scale consisted of the following items:

1. *I would buy an electric appliance with an unfamiliar brand if the retailer put a guarantee with it.*
2. *People should push the government to implement new social security programs even if they have to pay extra taxes.*

3. *I put more trust on a loan guarantee corporation than on an individual guarantor.*
4. *I don't do business with strangers even though they have credit information from an agency in the industry.*
5. *I don't trust companies' ratings at all.*

These items were designed to measure the respondents' attitudes towards situations in which social instruments could provide security and reduce risks.

### **Support Scale**

The response set for all items ranged from 1, "very strongly disagree," to 5, "very strongly agree." The following set of questions was duplicated in the survey for ISO certification. The main reason I asked participants to respond to items about ISO was to make this survey look more neutral even though the main focus for this project was FSC certification. The method of calculation for this section is the same as the one used for the previous section.

The Support Scale consisted of the following items:

1. *I am familiar with FSC certification.*
2. *FSC certification will contribute positively to the Japanese forest sector.*
3. *FSC certification will promote the world-wide sustainable forest business.*
4. *FSC certification will be beneficial to my own business.*
5. *FSC certification is reliable since it is an internationally accepted scheme.*
6. *FSC certification will be good for Japan in general.*
7. *Japanese forest sector people should support FSC series certification.*

These questions were created to measure level of support for FSC certification. The questions which were included for ISO certification were not used for this research since they are not relevant to the hypotheses.

### **Structure of Questionnaire**

In the first section of the questionnaire, I asked participants about their recognition level of the paradigm shift that is happening in the forest sector in Japan as well as in Japanese society in general using the *Paradigm Shift Scale*. In the second section of the questionnaire, I asked participants about their attitudes toward desire new forms of assurance with the Assurance Scale. In the third and fourth sections, I measured participants' attitude towards support for two certification schemes, FSC and ISO, with the Support Scale.

In the last section of the questionnaire, I asked participants to provide demographic information including age, gender, marital status, education, category of business, position in an organization, years of employment, company size,

income, years in current location, and presence of forest industry in their community. All of these items are self-explanatory except the last one which requires clarification. The item, presence of forest industry in the community, is intended to gather information about the significance of the presence of forest industry enterprises in the community where the participant lives. In other words, there are many or few forest-related enterprises in the community. The responses to many of these demographic items were later used as control variables for regression analysis in this research.

## Sample

The research sample I chose for the final survey was the members of two forestry associations that represent the full spectrum of actors in the forest sector. The chances that most members are familiar with forest certification such as FSC and ISO were high since their associations' magazines focused on the topic of FSC certification shortly before the survey was sent out. Also, workshops for their members on the topic of FSC certification were held in fall 2001. Another reason for choosing these groups is that due to my own affiliation with them, I had access to the mailing addresses for all members as well as permission from the general secretaries of the organizations to use those lists. I determined that I would exclude the members of these organizations who are academic professors and members who are representatives of NGOs. I excluded these members because many of the professors and NGO representatives are members of these organizations mainly because they are actively promoting forest certification. They have joined in order to influence the members to support forest certification. They are also separated into vying camps depending on which certification scheme they support. I determined that including these members in the survey with their very strong opinions and personal investment in the success of certification would create bias in the sample detracting from my attempt to correlate desire new forms of assurance, the paradigm shift, and support of forest certification. Also, this study does not intend to investigate the attitudes of the promoters. It is designed to investigate the attitudes of those persons who are the potential followers of the movement.

I excluded 4 targeted members who belong to both organizations to avoid the possibility of double entry. I also controlled for overlap of membership in the other organizations as well. I eliminated those persons who had participated in the early stages of the project so that they would not participate in the final survey.



## Survey Administration

I administrated the survey in June-August 2002. A total of 350 surveys were mailed out in July of 2002. Each survey was accompanied by a self-addressed stamped envelope to facilitate the return of the completed survey. A letter explaining that this survey was being conducted to measure the co-relationship between how much people in the forest sector recognize general social changes in Japan as well as changes in the forest industry, and how much they are interested in forest certification schemes was included in the mailing. Confidentiality was guaranteed to all respondents as well as anonymity.

Out of 350 surveys sent out, five were returned because the addressee had left the organization. 196 responses were received for a total response rate of 56.0%. Not all returned surveys had complete information; a reduced dataset of complete surveys is used to evaluate the research hypotheses and the number of valid respondents is reported in each case.

Answers to the demographic questions showed that the age of the respondents ranged from 25 to 80 years, with a mean of 48.35, and a standard deviation of 9.98. One hundred eighty five responses or 94.4% of all respondents were from males. Historically, the forest sector has been considered one of the most male-dominated industries in Japan. The situation is changing, but we can say that the forest sector in Japan is still a male-dominated society.

As for the respondents' marital status, out of 182 participants who provided information on their marital status, 142 or 78.0% were married. One hundred and thirty-seven or 74.9% respondents completed university-level education and 25 or 12.8% finished junior college-level education. These statistics showed that most of the participants were married and had attended college or university.

The pattern of years of employment of the respondents showed three peaks. One was new people with 1 to 3 years of work experience in their companies representing 25.9% of the sample or 44 people. Another was rather experienced people with 7 to 10 years in their companies representing 28.2% of the sample or 48 people. People with very long employment history in their current organization were 12.9% of the sample or 22 people. The mean was 14.4 years with a standard deviation of 12.55.

As for respondents' company size, the mean is 3.00, which showed that a significant number belonged to a company or an organization with the number of employees ranging from 30 to 99. Other respondents were evenly distributed over all of the company size categories. In this sense, the participants came from a very wide range of organizations in terms of size.

Respondents' average income fell between 25,000 and 49,999 US Dollars.

The number of years in their current location ranged from 1 to 80 years with a mean of 17.5 and a standard deviation of 13.86. However, half of the respondents fell within the range of 1 to 14 years in their current location.

I have analyzed survey responses to assess whether non-response bias is a concern with the data. To test for response bias, I obtained basic information about the survey population from the organizations. I compared the 196 respondents with the 154 non-respondents. The respondents did not appear to be different from the non-respondents in terms of age ( $t=-1.84$ ,  $p<.07$ ) and gender (Chi-square=.72,  $p<.39$ ).

## **Measures**

### ***Dependent and Independent Variables***

The dependent variable in the models is support for FSC certification and is measured with the Support Scale that I described in the previous section for this study. The independent variables are the recognition of paradigm shift and desire for new forms of assurance that are measured with the Paradigm Shift Scale and Assurance Scale respectively.

I have evaluated reliability and unidimensionality for each construct. Unidimensionality was assessed through factor analysis. From the factor analysis for each scale, every item in each scale showed a high factor load for one factor. Therefore, all items in each scale seemed to represent the construct of that scale. The unidimensionality of all three scales received support.

For reliability, Cronbach's Alpha was reported for each scale. All scales had  $\alpha >.70$ , providing a high reliability for predictor tests and hypothesized measures of constructs. The results of the unidimensionality and reliability for each scale are shown in table 5, 6, and 7.

**Table 5** Result of Factor Analysis: Recognition of Paradigm Shift

Item	Factor
Competition increase in business	.70
Prices over goodwill and reputation	.66
No more keeping close relationship with customers	.70
Importance of returning favors and being considerate*	.65
Reluctance to begin new customer relationship*	.76

Eigenvalue = 2.50

Percent of Variance Explained = 55.11%

\* = reverse item

Cronbach's Alfa = .74

**Table 6** Result of Factor Analysis: Desire New Forms of Assurance

Item	Factor
Purchasing unknown brand product with retailer's guarantee	.75
Support new social security programs with tax raise	.54
Trusting a loan guarantee corporation over an individual	.69
No business with strangers even with reference in the trade*	.59
No trust in companies' ratings*	.62

Eigenvalue = 2.32

Percent of Variance Explained = 50.42%

\* = reverse item

Cronbach's Alfa = .70

**Table 7** Result of Factor Analysis: Support for FSC Certification

Item	Factor
FSC certification contributing to Japanese forest sector	.61
Familiarity with FSC certification	.75
FSC beneficial to your own business	.70
FSC good for Japan in general	.75
Japanese forest sector's support for FSC certification	.75
FSC certification promoting world-wide forest sustainability	.73
Trust in FSC certification's international reputation	.78

Eigenvalue = 3.52

Percent of Variance Explained = 56.60%

Cronbach's Alfa = .82

### **Control Variables**

Selecting appropriate control variables is an important consideration of this research. In order to test the hypothetical relationship between dependent and independent variables, other variables that may be confounded with these variables should be controlled. I chose several control variables based on a review of forestry and other social science literature in the United States to include in the demographic section of the questionnaire.

Previous research on behaviors of consumers and retailers related to forest certification in the US indicates that age, gender, education, and income have a significant impact on support for timber products certification (Ozanne and Volsky 1997, Volsky and Ozanne 1997). Social science literature generally uses age, gender, marital status, education, income, and years in current location as control variables. In addition, research in business often includes years of employment and company size as control variables. Although not used in previous research, presence of forest industries in the community should also be included as a control variable because if the forest industry is dominant in a community, the community members are much more likely to be familiar with many of the issues related to the forest sector including FSC certification.

By blending the information from these sources, I chose the following control variables: age, gender, marital status, education, years of employment, company size, income, years in current location, and presence of forest industries in the community.

### **Analysis**

The hypotheses were tested by the mediated regression approach recommended by Baron and Kenny (1986). Mediation is a hypothesized causal chain in which one variable affects a second variable that in turn affects a third variable. The intervening variable, desire new forms of assurance in this study, can be a mediator. It may mediate the relationship between a predictor, recognition of the paradigm, and an outcome, support for certification if conditions are satisfied.

This approach involves examination of three separate regression equations. In the first equation, model 1, the dependent variable  $Y$  (support for FSC certification) was regressed on the independent variable  $X$  (recognition of paradigm shift) and the control variables. A significant positive effect of  $X$  would support Hypothesis 1.

$$\text{Model 1: } Y = a + bX + e$$

In the second equation, model 2, the mediator  $M$  (desire new forms of assurance) was regressed on the independent variable  $X$  (recognition of paradigm shift) and the control. A significant positive effect of  $X$  would support Hypothesis 2.

$$\text{Model 2: } M = a + bX + e$$

In the third equation, model 3, the dependent variable  $Y$  (support for FSC certification) was regressed on the mediator  $M$  (desire new forms of assurance) and the control. A significant positive effect of the mediator on the dependent variable would support Hypothesis 3.

$$\text{Model 3: } Y = a + bM + e$$

And, finally, in the fourth equation, model 4, the dependent variable  $Y$  (support for FSC certification) was regressed on the independent variable  $X$  (recognition of paradigm shift), the mediator  $M$  (desire new forms of assurance), and the control variables.

$$\text{Model 4: } Y = a + b_1X + b_2M + e$$

On condition that Hypothesis 1, 2, and 3 are all supported, the final requirement for mediation is that the effect of recognition of paradigm shift be less in model 4 than in model 1. If recognition of paradigm shift was found to have no effect on support for FSC certification, there would be evidence for “full mediation” and Hypothesis 4 would be supported (Baron and Kenny 1986, 1177).

## Results

Table 8 presents the means, standard deviations, and correlations for all variables included in the model. Several observations from these descriptive statistics might be worth reporting. As expected, age was negatively correlated with the support for FSC certification. It may be because older people are more reluctant to accept new ideas than younger people in society, and FSC certification may look like one of these new ideas. Contrary to my expectation, gender was negatively correlated with support for FSC certification. Because the proportion of female respondents ( $n=11$ ) was small in my sample compared to male respondents ( $n=185$ ), this correlation may be due to the sampling bias. Education was found to correlate with support for FSC, which is consistent with the previous research in the United States. Years of employment was positively associated

with support for FSC certification. This might be due to the high correlation between years of employment and age. Company size was negatively correlated with the support for FSC certification. People working in smaller scale companies would be more likely to accept newer and more innovative ideas to their organizations because they are closer to the margins. Finally, presence of forest industries in the community had significant correlations both with the recognition of the paradigm shift and support for certification. This may be because people who live in the community where the presence of forest industries is high can be sensitive to social change due to the decline of the industry in the community. They may also be sensitive to FSC certification issues because changes in the forest industry are having significant influences on their daily lives, and new topics in the forest industry such as FSC certification may readily attract their attention.

**Table 8** Means, Standard Deviations, and Correlations

Variable	N	Mean	s.d.	1	2	3	4	5	6
1. Age	196	48.35	9.98						
2. Gender	196	1.04	0.21	-.27**					
3. Spouse	182	1.78	0.42	.51**	-.33**				
4. Education	183	3.73	0.68	-.02	.04	-.14			
5. Year of employment	170	14.42	12.55	.39**	-.10	.13	-.02		
6. Company size	166	3.01	1.28	.02	.09	.14	.01	.37**	
7. Income	170	2.59	1.21	.49**	-.12	.35**	-.07	.27**	.13
8. Year in current location	175	17.47	13.86	.35**	-.04	.22**	-.20**	.31**	-.13
9. Forest industries in community	175	2.09	0.99	-.13	-.15*	.10	-.27**	.19*	.06
10. Recognition of paradigm shift	175	3.58	0.83	-.04	.05	.12	.04	-.10	.01
11. Desire new forms of assurance	175	3.49	0.56	-.01	.03	-.03	.18*	-.04	.09
12. Support for FSC certification	175	3.73	0.81	-.26**	-.19**	-.05	.19*	-.25**	-.16*

Variable	7	8	9	10	11
1. Age					
2. Gender					
3. Spouse					
4. Education					
5. Year of employment					
6. Company size					
7. Income					
8. Year in current location	.17*				
9. Forest industries in community	-.09	.04			
10. Recognition of paradigm shift	-.10	.18*	.17*		
11. Desire new forms of assurance	.11	-.02	.09	.46**	
12. Support for FSC certification	.03	-.06	.15*	.33**	.44**

\* $p < .05$  \*\* $p < .01$

Table 9 presents the mediated regression results for Model 1 through 4. For each model, hierarchical regression procedure was employed in which nine control variables were entered in the first step, and the independent variable(s) in question were entered in the second step.

In the first step of Model 1, the nine control variables explained 19 percent ( $p < .01$ ) of variance in support for FSC certification. In the second step, recognition of paradigm shift explained an additional 5 percent of variance in support for FSC certification. The  $R^2$  change in the second step was significant ( $p < .01$ ). The regression coefficient for support for FSC was also significant ( $\text{Beta} = .16$ ,  $p < .05$ ). The result provided the support for Hypothesis 1.

In the first step of Model 2, the nine control variables explained 3 percent ( $p < .01$ ) of variance in desire new forms of assurance. In the next step, recognition of paradigm shift explained an additional 26 percent of variance in desire new forms of assurance. The  $R^2$  in the second step was significant ( $p < .01$ ). The regression coefficient for recognition of paradigm shift was also significant ( $\text{Beta} = .52$ ,  $p < .01$ ). The result provided the support for Hypothesis 2.

In the first step of Model 3, the nine control variables explained 19 percent ( $p < .01$ ) of variance in support for FSC. In the next step, desire new forms of assurance explained an additional 19 percent of variance in support for FSC. The  $R^2$  change in the second step was significant ( $p < .01$ ). The regression coefficient for desire new forms of assurance was also significant ( $\text{Beta} = .36$ ,  $p < .01$ ). The result provided support for Hypothesis 3.

To examine the last conditions of mediation suggested by Baron and Kenny (1986), in Model 4, both recognition of paradigm shift and desire for new forms of assurance were entered at the same time in the second step. As a result, the effect of recognition of paradigm shift became no longer significant ( $\text{Beta} = .03$ , n.s.). According to Baron and Kenny, this result indicates that desire for new forms of assurance fully mediates the relationship between recognition of paradigm shift and support for FSC.

To confirm the above result that the effect of recognition of paradigm shift was no longer significant in the model 4, I also conducted the three-step hierarchical regression analysis in which the nine control variables were entered first, desire new form of assurance entered second, and recognition of paradigm shift was entered last. In the last step, entering recognition of paradigm shift did not contribute to the  $R^2$  change ( $\Delta R^2 = .01$ , n.s.). This ensures my conclusion of full mediation. Therefore, Hypothesis 4 was supported.

**Table 9** Results of Mediated Regression Analysis of Recognition of Paradigm Shift, Desire New Forms of Assurance, and Support for FSC Certification

Independent Variables	Model 1 Support for FSC	Model 2 Need for assurance	Model 3 Support for FSC	Model 4 Support for FSC
<b>Step 1</b>				
Controls				
Age	-.29*	.11*	-.32**	-.33**
Gender	-.30**	-.05	-.28**	-.28**
Spouse	-.03	-.22	.04	.04
Education	.13	.07	.10	.10
Years of employment	-.23*	-.10	-.19*	-.20*
Company size	-.05	.14	-.11	-.11
Income	.20**	.15	.15*	.14
Year in current location	.10	.03	.09	.09
Forest industries in community	.20*	.06	.17*	.18*
<i>Change R<sup>2</sup> (from zero)</i>	.19**	.03**	.19**	.19**
<b>Step 2</b>				
Recognition of paradigm shift	.16*	.52**		.03
Desire new forms of assurance			.36**	.38**
<i>Change R<sup>2</sup></i>	.05**	.26**	.14**	.16*
<i>F</i>	5.70**	6.80**	8.69**	7.87**
<i>R<sup>2</sup></i>	.28	.34	.38	.39
<i>Adjusted R<sup>2</sup></i>	.24	.29	.33	.35
<i>df</i>	154	154	154	154

In summary, results from the mediated regression analysis support all of the hypotheses in the study. Most importantly, the results from the regression analyses meet the Baron and Kenny (1986)'s conditions for full mediation. Therefore, the result suggests that desire new forms of assurance fully mediate the relationship between the recognition of paradigm shift and support for FSC certification.

The results of the empirical study indicate that the paradigm shift is being felt in the forest sector. Furthermore, the full mediation indicates that many of the forest sector people who support FSC certification are feeling loss of assurance in their business interactions due to the paradigm shift. This loss was also evident in the interviews which I conducted. These results taken together indicate that it is plausible that FSC certification is being accepted by many in the forest sector as a substitute for the traditional assurances being lost in the paradigm shift. If we place the results of this study in the context of the paradigm shift, we can see how the movement to introduce FSC certification to Japan has gained support from those in need of substitutes for lost assurance even though forest certification has no rationale for application in Japan as in the countries in which it originated.



# Chapter 7

## Discussion and Conclusions

Consistent with FSC's global goals, FSC certification was introduced to Japan as an environmental mission to improve forest management practices as well as to promote sustainable forest businesses. This was the original intent of FSC certification, and it found success in many countries because it was promoted by well-established NGOs, business people who saw market advantage with populations that were demanding environmental protection, and government regulations requiring attention to environmental concerns. For the most part, those incentives do not exist in Japan. Therefore, we have a situation in which a social instrument created to address problems in societies that have similar issues and cultural heritages is being adopted by another society with a different set of issues and a different cultural heritage. If, as this study indicates, certification is finding acceptance in Japan for reasons other than the ones that it is being proposed to address, decisions could be made with unrealistic expectations of outcomes. Those decisions may cause long range damage to the sector rather than help solve its problems.

Based on North's observations discussed in Chapter 4 of this book, if conditions in two societies are different, a social instrument adopted by one society from the other will not have the same outcomes in the adoptive society that it had in the one where it originated. Applying North's theory, we can expect that FSC certification will not function in Japan as it functions in the societies where it originated. The observations of this investigation and results of this study show that this is, in fact, already the case with this social instrument in Japan even though there is little public discussion and awareness of the phenomenon. If this phenomenon is acknowledged and consciously considered by forest sector people, beneficial outcomes would be more likely from the introduction of FSC certification to Japan.

Also discussed in chapter 4, March and Olsen's "*garbage can*" model describes how unexpected negative outcomes can result if decision-making is not rational. The results of this study indicate that many supporters of the movement are not well informed about FSC certification. Many followers are not aware of reasons that certification found success in other countries and are not prepared for the possible outcomes that may deviate from the expected improvements in their financial prospects which have been publicly associated with the movement. Furthermore, placing this movement in the context of the paradigm shift that has escalated the feelings of desperation in the forest sector, we see a mosaic of agendas that are not logically connected for the mutual benefit of all

concerned.

### **Social Dilemma for the Forest Sector**

By taking into account the context in which solutions to a social problem are introduced to a sector of a society, we see that the adoption of FSC certification has the potential to create a social dilemma for Japan's timber farmers. The term *social dilemma* is used by social psychologists to describe a situation in which one member of a group makes a choice to achieve immediate individual gain without considering the impact on the future of the group. That person takes the action because he or she can receive a higher payoff for a transaction than expected through cooperation with the group. The choice deviates from the cooperation expected by the group. This break from expected cooperation can harm the other members because the well being of all is based on mutually beneficial decision-making. The social dilemma presented by the introduction of FSC certification is that a timber farmer can choose to certify his or her operations with the hope of immediate personal gain. The personal gain would come from the promise of market advantage. However, if a few members of the sector who can afford certification choose to certify their operations, will their choice be valuable for the sector as a whole? If not, then the choice to certify their operations could sabotage the sector as a whole and their own interests in the long term by setting up a chain-of-custody that will favor imported certified products. Predicting the results of this dilemma is not possible at this time. However, by gathering information and careful analysis of that information, logical outcomes can be described which may help prevent wasted investments and irreversible damage to the sector.

One disparate outcome that may be developing due to lack of information is that timber farmers who are in serious need of help but cannot pay the price for certification could find themselves excluded from a certified product market. They might follow and support the FSC certification movement because they believe that FSC certification can be a vehicle to improve their financial situation. However, since they have little specific information about this new scheme, they do not understand the potential risks involved. For example, they do not realize how much it will actually cost in the long run. FSC certification cost is quite high initially, and it also requires annual auditing, approximately 10,000 US dollars a year for 1,000 hectares (Hayami 2000). Many of the timber farmers who have joined the FSC certification movement see it as a one-shot investment, and they don't realize how much it will cost to maintain. Once they become certified, maintaining the certified status is very important. Otherwise,

there is no reason for them to pay the initial certification cost that is only good for one year. In this situation certification would create an elite of affluent timber farmers whose forests are for the most part no more certifiable than their less affluent associates. The less affluent farmers who could not afford initial certification and the necessary maintenance of it would be disenfranchised even though their forests could meet or exceed FSC certification standards.

Furthermore, if those who cannot afford FSC certification support FSC certification, they could be promoting their own exclusion from the market for domestic timber products. As mentioned previously, certification of forestlands is a very expensive undertaking in Japan. This restricts certification to the more affluent timber owners. Most timber owners in Japan cannot afford the cost of certifying their operations, especially considering the expense of continual annual auditing obligations. Certification separates “good” from “bad.” Those who qualify are the “good” and those who do not are the “bad,” even though their forests would meet FSC certification standards. Therefore, those who are “good” could receive a market advantage. If certification divides Japanese forest producers between “good” and “bad,” this is no advantage to many in the forest sector because those who need the economic incentive most will be those who can least afford expensive certification. In addition, many timber farmers are not able to continue investing in high-production silviculture practices to maintain high-quality products. Their relatively low-quality timber is often dumped on the market for cash at below production costs nowadays. If certification is widely accepted, they will no longer even have this option.

If forest sector people accept FSC certification and it becomes successful in Japan, a chain-of-custody for certified products will also follow. FSC certification could cause serious problems even for those who can afford to be certified. Currently, there is a large amount of certified foreign timber products being imported to Japan. However, since there is not a developed chain-of-custody for certified wood products in Japan, these foreign certified products enter the Japanese market as uncertified. If forest sector people in Japan spend their time and energy to make FSC certification successful in Japan, they will create a chain-of-custody. Creating this chain-of-custody means that they will be creating a market for foreign certified product that is already in the Japanese market. If certification becomes widespread with a chain-of-custody for certified products, foreign certified imports would be favored over domestic products due to their significantly lower costs leaving all of the domestic producers out of the market. Therefore, bringing FSC certification to Japan, could make things worse for the domestic market than it is already.

In addition, the attention devoted to FSC certification as a possible solution

to the economic hardships of the forest sector can be diverting attention away from other beneficial initiatives. These initiatives might not have the more glamorous appearance that an international initiative such as FSC certification presents, but they might have more practical and substantive outcomes for timber farmers. For example, the innovation termed “value chain” could be adopted from other business sectors. This practice allows producers, manufacturers, and dealers in the forest sector, even timber production managers, more marketplace advantage by identifying customer needs and figuring out ways to supply them. Applying this method to the forest sector would be a significant change in the approach to timber production in Japan.

Another example is that biomass from forest production can be used to supply fuel for energy production. This has not been developed in Japan but there are indications that due to the high cost of energy, it could be a profitable market for timber producers if time and money were spent to put it into place specifically for local domestic timber use.

These initiatives have the potential to bring about improvement in the forest sector but none have found sufficient support for implementation. Since most local government administrators have to choose one policy over others, multiple innovations shared across governments is most often not possible. Also, the innovations that seem to be the most glamorous often capture the attention of administrators since they have to sell their proposals to others for approval. A movement like FSC certification with its international reputation can detract from these other possible solutions to the problems facing the Japanese forest sector.

These are examples of the risks that are possible if FSC certification is accepted. The risks range from simply wasting money to certify lands with no economic return to owners, to the more serious unanticipated outcome of creating a better market for foreign competitors. The hope that FSC certification can improve the prospects for the domestic timber producers could be preventing them from experimenting with other more productive solutions to their problems.

Considering both the anecdotal and empirical evidence collected in this research project, there are indications that supporters of FSC certification are making choices without full understanding of the potential outcomes. It is also possible that persons supporting FSC certification as an economic incentive could be misinformed. If so, there is the possibility that their choices are following the non-rational decision-making scenarios described in March and Olsen’s work mentioned above. To break out of the “*garbage can*” mode, actors in the forest sector will need to face the situation, describe it, and determine if FSC certification is a rational choice deserving prominence over other potential innovations for the forest sector, or if it can be modified through rational decision-

making to beneficially serve purposes relevant to the current needs of the forest sector in Japan.

### **Adaptive Possibilities for FSC Certification in Japan**

If forest sector people acknowledge that FSC certification can be adapted and modified to serve the specific needs of the Japanese forest sector and connect those needs to the potential of FSC certification, they can consciously and rationally adapt it to serve the Japanese forest industry. An example of the application of this concept is that if FSC certification were modified to be an assurance system through adaptive application, it could function like a referral system, a possible substitute for the personal reference system being lost due to the paradigm shift. Additional standards which are specific to the Japanese business culture could be added to the FSC ones. These could be written so that certified operations would be able to recognize each other as ones that follow and adhere to “Japanese good business practices.” Recognition of adherence to these Japanese defined good business practices would assure those who are certified that specific expectations will be followed in their transactions. In this system, certified businesses would have reliable good references to other certified businesses providing more security in business relationships.

FSC certification could also be adapted to create a systematic infrastructure for cooperation between timber farmers and other industry people connecting at the national and local levels. This could make use of FSC certification as an organizational entity to ensure that all actors at all levels of the sector are represented in finding solutions for the problems of the forest sector. FSC certification might be able to encourage cooperation where other organizations have failed with the pooling of resources and information to make efforts more substantial. For example, FSC certification could encourage the creation of cooperative management units as a potential innovation for Japan’s small and mid-size timber farmers. It would require timber owners to form cooperative groups that allow owners to combine their lands into management units. These groups would be able to hire professional timber production managers and the combination of lands would decrease the cost of management practices.

Another example is the possibility that FSC certification could be adapted in Japan to function as an inventory system tracking information for carbon sequestration investments. This function of FSC certification would be economic incentive by providing a source of income that does not rely on timber harvesting production. The concept of carbon sequestration investment has been discussed in the international finance community since 1997 when the Kyoto Protocol was

established. There are several ways to invest for carbon sequestration; however, one of the problems related to any investment scheme is how to monitor and track the amount of carbon sequestered in the forest. Japan has never had an accurate and reliable comprehensive inventory and monitoring system to estimate area and volume of standing timber. Certification could be adapted to provide this service and for the first time provide a system for carbon sequestration investment implementation.

### **Uncertain Future for Japan's Forest Sector**

The adoption of FSC certification in Japan is at best ambiguous in its purpose and promise at this time. The manifest goal of FSC in bringing certification to Japan is to improve the quality of the environment. The manifest goal of many promoters of FSC in the Japanese forest industry is the improvement of the financial situation in the forest sector. The information provided through this study indicates that a significant number of Japan's forest sector actors have decided to join the FSC certification movement based on this unsubstantiated hope that forest certification can offer much needed economic revitalization to their industry. However, the study also concludes that the latent motivation of many followers is the need to find new securities in this time of changes in their industry due to the paradigm shift. Serious consideration of the reasons why the loss of assurance is a motivator could help all involved create more realistic and appropriate goals for the adoption of FSC certification in Japan.

The seriousness of the situation requires education and research that will help forest sector people avoid the "garbage can" mode of dealing with the problems in the forest sector. One of the most critical issues which would help all in the forest sector make intelligent choices is to investigate the effect that certification's chain-of-custody might have on the Japanese timber market. Also, innovative ideas such as investigating the application of certification to inventorying carbon sequestration could be very valuable to all forest owners regardless of the size of their operations. Even though the original promotor, WWF Japan, did not at all intend it, FSC certification might be adapted to monitor carbon sequestration compliance. Research to investigate the impact that FSC certification could have on the Japanese forest sector is needed. From my experience with this project, forest sector people are very willing to cooperate and will welcome serious consideration of their situation.

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