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Perceptions of Forest Concession Staff Members on the Impacts of Forest Certification in Peninsular Malaysia

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This study determines the impacts of forest certification towards social, economy and environment criteria from the perceptions of staff members from three forest concessionaire companies. A lot of changes have been made to ensure the companies' operations are compliant with the principle and criteria of forest certification when it was introduced to the companies. Since the staff members are involved in every aspects of forest management, their views are vital to determine the impacts of the implementation of forest certification in their companies. Results reveal that certification had led to more positive impacts such as benefits to the staff members' social welfare and improving the sustainability of the forest. Nevertheless, it had been affecting these companies economically due to the additional cost of certification and the requisite annual inspections. On this other hand, this research exposes the impacts of forest certification and hopefully, it has provided useful information for the stakeholders regarding the issues on forest certification.

Key words: forest, sustainability, forest certification, sustainable forest management.

INTRODUCTION

In early 1990s, forest certification emerged and contributed to an astonishing revolution in forest management where the main objective is to promote sustainable forest management especially in tropical forests. The emergence of the certification systems was due to the concern of the general public on the increase of forest decline. Forest decline has resulted from the enormous human ability to alter large forest ecosystems (Contreras-Hermosilla, 2000) and the consequences of it are deforestation and forest degradation. This had led to several efforts to combat tropical deforestation which includes the establishment of forest certification, which came into existence in 1992 as a result of the United Nations Conference on Environment and Development (UNCED) or better known as "Earth Summit" in Rio de Janeiro, Brazil. At UNCED, developing and developed countries agreed on the Forest Principles, which are general guidelines for the management of forests relating to economics, environmental and developmental concerns (Auld et al., 2008). However, in the absence of governmental action, the World Wide Fund for Nature (WWF, now the World Wildlife Fund), brought together representatives of forest industry and environmental organisations in 1993 to form the Forest Stewardship Council (FSC) whose purpose is to support environmentally appropriate, socially beneficial and economically viable management of the world's forests (Sample, 2000). Since then, other forest certification schemes have emerged that provides a new dimension in managing the forests and remarkably contributed to a positive impact mostly to the forest diversity and the value of the forests.

The rationale for forest certification is the need for consumers to be assured by neutral third party organizations that companies involved in the forest products supply

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chain from the forest to the consumers are employing sound practices that will ensure sustainable forest management (Ozanne and Vlosky, 1997). The emergence of forest certification had positively affected the forest management practices. The great advantage of forest certification is that it could provide a means to identify tropical timber that was properly grown and harvested, thus allowing northern consumers to buy tropical hardwoods without feeling that they were contributing to tropical deforestation (Meidinger et al., 2003). As certification becomes more well-known, it is being increasingly recognized as a tool for promoting sustainable management (Innes and Hickey, 2005). In addition, forest certification is driven by a variety of interests. In supporting this, Rametsteiner and Simula (2003) had stated that "for industry and trade, it is an instrument for environmental marketing and market access, for buyers and consumers, it provides information on the impacts of products they purchase, for forest owners and managers, it is a tool for market access or gaining market advantage, for governments, it is a soft policy instruments to promote SFM and sustainable consumption patterns and for environmental movement, it is a mean to influence how forests are managed to promote, *inter alia* biodiversity maintenance."

Since the establishment of the certification program for forests, many benefits have been observed. For example, Hartsfield (2003) acknowledged several benefits including: i) well managed forests acknowledged by those implementing forest certification, ii) improved forest management systems including better recognition of ecological, economic and social impacts of forest management, iii) improvemed forest manager's relations with stakeholders and increasing credibility of the forest entities in the eyes of public and relevant stakeholders and iv) decreased need of regulatory enforcement for forest management. Other benefits include market benefits such as greater access to environmentally sensitive niche markets and increased client demands (Overdevest and Rickenbach, 2006), greater market share for certified producers (Meidinger et al., 2003), and in some cases better prices for wood products. In addition, Vogt et al. (2000) highlighted that forest certification has become a central focus of forest management and is considered by national and international agencies as a solution to many other environmental problems such as global warming, forest destruction and carbon sequestration. It has been seen as a practical tool to help ensuring the success of sustainable forest management and with the increasing impact has grabbed the attention of many forestland owners, governments and forest managers to adapt it into their forest management practices.

Forest certification programs and systems have grown substantially over the last decades. In 2002, the area of certified forest was estimated at 109 million ha (Atyi and Simula, 2002) and it has increased to approximately 300 million ha of world forests in 2009 (US Forest Service International program, 2009). However, despite the increase in the number of certified forests in the world, according to the PEFC Annual Report in 2010, only 9% of the world's forests have been certified with about 90% of the area is in Europe and North America. This is due to the challenges in governance and capacity of the developing countries.

Over the years, a number of forest certification programs have been developed and continuously evolved all around the world. The initiative in developing and organising the programs by related organisations can be divided into three types, which are the i) international schemes developed by dedicated organisations such as the Forest Stewardship Council (FSC) and the Program for The Endorsement of Forest Certification (PEFC), ii) national or regional schemes such as the Malaysian Timber Certification Council (MTCC), the Lembaga Ekolabel Indonesia (LEI), and the Sustainable Forestry Initiative (SFI), and iii) national schemes developed by the existing national standards organisation such as the Canadian Standard Association (CSA) (Nussbaum and Simula, 2005). These certifying organisations or bodies have their own guidelines or standards to be followed by those seeking their certification (Fisher et al., 2005). The standards can be categorized into two, which are performance-based (with requirements for specific actions, practices, or outcomes) or system-based (with criteria for a landowner to design a personalised management system for tracking of environmental performances). Currently, PEFC is the largest forest certification organization in the world with more than 230 million hectares of forest being certified under their standards (PEFC, 2011).

In Malaysia, forest certification emerged through direct initiatives of the states' forestry departments acting as trustees of Permanent Forest Estates (PFEs), through bilateral projects for sustainable forest management between these departments and international bodies, and through direct interest from individual forest concessionaires (Mohd Shahwahid, 2004). The Malaysian government had also participated in developing the scheme and the advantage of its involvement in forest management certification has provided some advantages in ensuring (Mohd Shahwahid, 2004): i) consistency of criteria and indicators applied, ii) balance in the views of the different parties involved, iii) greater accountability to the public, iv) greater transparency in the schemes used and v) an additional channel to represent their interest in labelling authorities. Moreover, forest certification has also served as a tool to promote SFM and receive support from various stakeholders which include the government and the private sectors. In Malaysia, there are 3 main forest certification schemes which are Malaysian Timber Certification Schemes (MTCS), Forest Stewardship Council (FSC) and Program for the

Endorsement of Forest Certification (PEFC).

This study focused on the perspectives of forest concessionaires' staff members towards the implementation of forest certification. While the forests in Malaysia are owned by the government, in certain cases the rights to harvest and manage these forests are usually allocated to private companies, also known as forest concessionaires. These companies are allocated with forest areas, usually referred to as concession areas, of a certain size to be harvested and managed over a certain period of time. In return, they have to pay certain charges for the timber to the government (Rusli et al., 2002). The staff members of the concessionaires are involved in the management of the forest land allocated to them. Among the responsibilities involved are the forest activities that ensure the economic, ecological, biological and socio cultural sustainability of the area (Thang, 2003).

Hence, the greatest factor contributing to the success of forest certification is the commitment from the people who deal with the forest itself. In order to achieve the required standard in forest certification, the objective is not only the forest concessionaires' company management sole responsibility, but the contributions from the forest concessionaires' staff members are essential to achieve it. This is because in ensuring the success of forest certification in a concessionaires' company, the staff members are needed to cooperate and work together with their company's management to fulfil all the criteria that had been set up by the certification bodies so that it can be achieved and leads to the awarding of certification. The staff members are involved in all aspects of forest management such as planning, monitoring, operating, inventorying and harvesting. Furthermore, when the forest certification is sought, there will be direct or indirect impacts towards the concessionaires' company and the staff members. It is not a surprise that forest certification and its impacts have drawn the interest of many researchers but little research that focused it from the perspective of forest concessionaires' staff members. This study is hoped to help in analyzing the impacts of forest certification from the perception of forest concessionaires' staff members. This study focused on the perceptions of forest concessionaires' staff members towards the implementation of forest certification. Hence, the objective of this paper is to determine staff members' perceptions on the impacts of forest certification socially, economically and environmentally.

Study Population

In this study, the respondents were the staff members of the forest concessionaires, who were granted concession areas by the respective state governments. The companies chosen for this study were the companies that had been certified as "well-managed forest lands", meeting the principles and criteria of the Forest Stewardship Council for their forest management operation. The companies selected were 1) Kumpulan Pengurusan Kayu Kayan Terengganu (KPKKT), Dungun, Terengganu, 2) Perak ITC Sdn. Bhd., Ipoh, Perak (PITC), and 3) Asia Prima RCF Sdn. Bhd., Mentakab, Pahang (APRCF). As of June 2009, there were four companies in Malaysia that were certified as "well managed forest lands" by the FSC. However, only three companies situated in Peninsular Malaysia were chosen for this study. These companies were readily evaluated by the Scientific Certification System, a certification body accredited by the FSC. The three companies were the Kumpulan Pengurusan Kayu Kayan Terengganu (KPKKT), Dungun, Terengganu, the Perak ITC Sdn. Bhd., Ipoh, Perak, and the Asia Prima RCF Sdn. Bhd., Mentakab, Pahang. Out of 109 staff members, 68 participated in the survey.

METHODS

Data were collected from September to November 2009 using a questionnaire consisted of 36 statements related to the impacts of forest certification on social, economy and environment that were associated to the respondents and their companies. The statements included in this section were based on the literature review and previous studies by other researchers with regard to the impacts of forest certification. Respondents were asked to rank (Likert Scale) the statements to each impact on five point scale, ranging from "strongly agree" to "strongly disagree".

Forest Certification Impact Index

In order to determine the impact, indexes of impact value were computed as perceived by the forest concessionaires' staff members. The method was adopted from Mohd. Ghazali et al. (1994) and it was adapted to suit the terms of definition of scales to suit the objective of this study. The unadjusted index value was derived from the Likert scale by calculating the average score for those agreeing with each of the individual statements. The result of the statements was rescored to derive the unadjusted index. The unadjusted index was then converted to the adjusted index value by using the formula below:

$$\textbf{Adjusted index} = \frac{\text{Unadjusted index} - \text{Minimum score}}{\text{Maximum score} - \text{Minimum score}}$$

The adjusted index value was constructed to reflect, via a single composite measure, the degree to which the individual staff member of the companies would consider the impact of forest certification. The unadjusted index values that ranged from one to five were converted to the adjusted index value ranging from a possible minimum of zero to a possible maximum of one hundred. The maximum score was referred to the highest point of the Likert scale which was five, and the minimum score was the lowest point, which was one. The adjusted index value was then assigned to one of the five discrete impact categories, with the ranges of; large positive impact (>70), somewhat positive impact (60.01 – 70.00), intermediate positive impact (50.01 – 60.00), somewhat negative impact (40.01 – 50.00), and quite large negative impact (0 – 40.00).

Table 1. Social Impacts of Forest Certification.

IMPACTS OF FOREST CERTIFICATION	ADJUSTED INDEX
Company's reputation	
Increased reputation of the company at the international level.	80.15
Increased reputation of the company towards States' Forestry Department.	81.62
Increased reputation of the company towards NGOs.	71.32
Increased reputation of the company towards local communities.	70.96
Average	76.01
Employees	
Increased awareness in abiding forest policies.	79.78
Increased awareness in following the guidelines in forest management.	81.25
My motivation to do job professionally had increased.	83.09
Increased experiences in forestry.	81.25
Increased chances to receive training in forestry.	79.04
Increased staff members' safety and health.	79.78
Average	80.7
Local communities	
Local communities get chance to involve in forest management plan.	71.69
Increased job opportunities to local communities.	75.37
Availability of information on the forest concessionaires' company and its management system.	71.32
Average	72.8

RESULTS AND DISCUSSION

The results showed that the index values for the 68 respondents ranged from 17.65 to 83.09. Table 1 shows the results for social impacts of forest certification, which were categorized into three categories, namely company's reputation, employees, and local communities.

One of the impacts of adopting forest certification is an increase in reputation. In this study, the increase in reputation is referred to as a boost in professional image, demonstrating excellent forestry practices by a company. Adopting forest certification in a way contributes to a good public image of a company for practicing a sustainable forest management (Rotterham, 1997). The index scores (%) for the increase in company reputation (towards organisations) were as follows: international level (80.15), states forestry department (81.62), non-governmental organisation (71.32), and local communities (70.96). From the average index of the statements, the value was 76.01, which showed that the increase in reputation had a large positive impact to the company. The staff members perceived that by adopting forest certification, it will surely benefit the reputation of a company. A good reputation and image at international level are important aspects for a company to establish and get recognized in the international market and trade whereas to the states forestry department, a good reputation represents the commitment of the company to manage the forest area awarded to them, sustainably. In addition, to the NGOs and local communities, an excellent reputation and image are required as evidence that the company responsibility is not only to the forest but also to the environment and communities surrounding it.

The second category of social impact of forest certification is towards the employees. Most of the benefits of forest certification contribute directly, especially to the staff members, as they are involved in managing the forest. The benefits for the staff members include improved safety and training, increased experience, and others. From their point of views, which were represented in the adjusted index, forest certification increased their awareness in abiding forest policies (79.78), increased awareness in following the guidelines in forest management (81.25), increased motivation to perform professionally (83.09), increased experience in forestry (81.25), increased chances to receive training (79.04), and increased safety and health (79.78). The above statements had an average index score of 80.7, indicating a large positive impact of forest certification.

The third category of social impact is towards the local communities. Forest certification brings improvements to the quality of life and creates job opportunities for the local communities. The index scores for the impact of

Table 2. Economic Impacts of Forest Certification.

IMPACTS OF FOREST CERTIFICATION	ADJUSTED INDEX
Employees	
Increased wages for staff members that had training and qualification.	67.65
Market access	
Increased market opportunities for certified products.	79.41
3 Company's Profit	
Increased company's profit.	77.94
Cost	
Increased company cost in process to get certification.	23.16
Increased company cost in the process of annual auditing.	20.96
Increased company cost in getting consultation for forest management/forest certification.	25.37
Increased company cost to provide training to the staff members.	21.69
Increased company cost to pay salary for well-trained staff members.	22.79
Increased company cost to provide safety equipment for staff members' usage.	17.65
Increased company cost to provide infrastructures and facilities for staff members' usage.	17.65
Average	21.02
Local communities	
Increased local communities' economic status through business opportunities.	66.91

forest certification to the local communities are as follows: chances to get involved in forest management plan (71.69), increase in job opportunities to local communities (75.37), and availability of information on the forest concessionaires company and its management system (71.32). The above statements had an average index score of 72.8, indicating a moderately positive impact of forest certification. As described in Principle 4 of FSC, the forest operations shall maintain or enhance the long-term social and economic well-being of forest workers and the local communities. From the positive results above, it can be concluded from the staff members' perceptions, forest certification has benefited them and the local communities. They agreed that by adopting forest certification, their rights and interests are being protected. In addition, the companies have given them opportunities for training, employment, and at the same time a good working environment, covering health and safety issues. Moreover, the impact of implementing forest certification will strongly contribute to the staff members' positive attitudes while at the same time increase their interests in forest certification.

Table 2 shows the results of economic impacts of forest certification. Based on the results, the respondents agreed that the increase in wages for well-trained staff members (67.65) is a result of adopting forest certification by their company. This condition is expected as the staff members will be paid a fair wage provided that they meet the standard and are commensurate with the activity being undertaken (Nussbaum, 2001). The respondents also perceived that forest certification has a moderately positive impact in helping to increase the economic status of the local communities (66.91). Forest certification has been proven to help local communities to boost their businesses and increase their chances in getting employed by the forest companies nearby.

Nevertheless, when it comes to the cost that the company needs to be bear as a result of adopting forest certification, the staff members perceived it as a big negative impact to the company, which can be seen by the low indices in several activities relating to the cost, averaging at 21.02. The activities that the respondents thought to be largely related to the incurred costs are as follows:

I To get the first certification (23.16)
II To conduct annual auditing (20.96)
III To carry out consultation in getting certification (25.37)
IV To provide training to the staff members (21.69)
V To pay salary for the well-trained staff members (22.79)
VI To provide safety equipment for the staff members (17.65), and
VII To provide infrastructures and facilities for the staff members (17.65)

The results were consistent with a similar study by Hain

Table 3. Environmental Impacts of Forest Certification.

IMPACTS OF FOREST CERTIFICATION	ADJUSTED INDEX
1 Employees	
Increased awareness in environmental importance.	81.25
2 Forest management	
Reduced deforestation.	78.68
Increased conservation of endangered species of flora and fauna.	76.47
Reduced negative impact towards soil structure and buffer zone.	76.84
Reduced soil damage and erosion.	81.99
Reduced the usage of chemical in the forest activities.	77.21
Forest regeneration was done naturally.	72.43
Increased the tree diversity in the forest.	73.90
Tree harvesting was done selectively.	81.25
Reduced the opening of forest canopies.	75.74
Reduced the loss and destruction of the smaller trees.	76.84
Average	77.13
3 Company	
Increased company effort to conserve forest biodiversity.	80.15

(2005), which reported that the respondents highlighted that forest certification entails additional costs and expenses to the forest company, which include the costs of training, safety, technique, and the environment. The study also stated that the respondents stressed that the increased cost of staff members' salaries are linked to the qualification or in the case of this study, the well-trained staff members. Initially, when a company management first decides to adopt forest certification, a major cost is needed in preparing and arranging an auditing process for the first time. The cost includes the shift in the company management in which several standards and practices are imposed to meet the criteria of the certification program. The changes in the company practices will require more time and funds while additional costs are needed to train the staff members.

In adopting certification, the company needs to bear additional costs for certification inspections and preparation for the first time in getting certified. Among the additional costs that the company needs to spend on are the initial cost of certification and the annual revisits by the certification team (auditors). In addition, major site visits for re-certification will also require costs to be borne by the company. The company also needs to spend money on consultations, infrastructures, and facilities to meet the safety requirements and also on training to improve the staff members' competency. Once the staff members are well-trained, then there is a high likelihood that the company will be required to pay a higher salary for their qualifications. There are also some additional expenses to the company, which are not easy to estimate, such as incremental costs due to sustainable management practices (Nebel et al., 2005).

However, adopting forest certification does not only lead to an increase in additional costs but also profit to the company. This is shown by the index of 77.94 for the increase in company profit. Although the costs may increase, the company can benefit economically from the adoption of forest certification, for example, through more efficient production systems, easier market access, and price premiums (Nebel et. al, 2005). Apart from that, the staff members believed that by adopting this program it had increased market opportunities for certified products. This is revealed by the index score of 79.41. Both of the index scores for these statements are more than 70, which indicate a large positive impact on the company.

Table 3 shows the results on economic impacts of forest certification. The environmental impacts of forest certification towards the employees are positive, which are in increasing the awareness in environmental importance (81.25). The respondents also perceived that forest certification had increased the company effort to conserve forest biodiversity with an index score of 80.15 (large positive impact). The increased awareness in environmental importance has resulted in positive behaviours in managing the forests (Hain, 2005), which in turn develops stronger biodiversity practices (Hagan et al., 2005) when compared to uncertified companies.

Forest certification is also meant to improve forest management with sustainable practices. The index scores for its impacts on the environment were as follows:

(i) reduced deforestation (78.68),
(ii) increased conservation of endangered species of flora

and fauna (76.47),
(iii) reduced negative impact toward soil structure and buffer zone (76.84),
(iv) reduced soil damage and erosion (81.99),
(v) reduced the usage of chemical in forest activities (77.21),
(vi) forest regeneration was done naturally (72.43),
(vii) increased tree diversity in the forest (73.90),
(viii) tree harvesting was done selectively (81.25),
(ix) reduced the opening of forest canopies, and
(x) reduced loss and destruction of the smaller trees (76.89).

The average index score of the statements were 77.13, which indicated a large positive impact.

This implies that the respondents observed that forest certification minimized the negative impacts of forest activities. This was due to the establishment and improvement of guidelines and standards in implementing forest activities. This includes several actions taken in accordance with the FSC standard demands, under Principle 6 (Environmental Impact), that “forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes and, by so doing, maintain the ecological functions and the integrity of the forest”. As a result, forest certification had contributed to positive impacts, specifically towards the sustainable forest management with the greatest contributions being in the area of environmental protection (Savcor Indufor, 2005).

Conclusion

The implementation of forest certification has provided positive impacts to all aspects of forest management, except the cost that need to be borne by the company. The respondents perceived that the economic aspect, which was related to the cost of the certification, had negatively impacted the company. The study found that certification had affected the companies’ way of operating, particularly in the management of the forest. Implementing forest certification had encouraged them to improve documentation, and be more specific in preparing records, training employees, and developing environmental practice standards. In meeting the standards, procedures and changes were implied by them in responding to the certification. Being implemented in the forest companies, forest certification benefited the staff members in many aspects, particularly their welfare. The staff members had better chances of receiving trainings and better safety. As part of the company, the staff members whose nature of the job was related to the forestry were mostly involved in the certification process. As a result, they gained a greater knowledge in the system. Despite the positive aspects, forest certification had negatively affect the companies as it required additional costs of preparing for audits and auditing costs as well as increased expenditures in providing trainings to the staff members. However, in a positive way, forest certification helped to increase the reputation of the company towards the government and at international level.

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