Journal of Forest and Landscape Research 1 (2015): 1–11
DOI: 10.13141/jflr.v1i1.251

Original research

Implementation of sustainable forest management: an application of the triple perspective typology of stakeholder theory in a case study in Sabah, Malaysia

Walter Lintangah[1], Norbert Weber[2*]

Abstract
The progress of the concept of Sustainable Forest Management (SFM) is dynamic and its success or failure during implementation can be evaluated in different ways. In a detailed survey in four Forest Management Units (FMUs) in Sabah, the current implementation of SFM at the FMU level was assessed based on the triple perspective typology of stakeholder theory. This approach encompasses conceptual, corporate and stakeholder centric point of view. The conceptual perspective explores the SFM concept and how it relates to the FMU holder – stakeholder interaction at the FMU level, the corporate perspective examined how the FMU holders put the concept into practise and address their stakeholders, while the stakeholder perspective analyses how the stakeholders attempt to accomplish their claims and interests through the corporate-centric (FMU holders) at the management level. The stakeholder analysis provides the platform for stakeholder identification, categorisation and their general perception and behaviour towards the overall performance of SFM objectives. The Stakeholder Relation Management (SRM) that integrates the FMU holders and stakeholder participation under the SFM concept were also identified. Different FMU holders are engaged with distinct objectives to be achieved, which determine their direct relationship with the stakeholders. The stakeholders were attributed to static and dynamic groups, which are determined by their existence, claims and interests, and involvement in various SFM programs and activities at the FMU level. They provided distinguished preference and agreement toward various issues and characteristics related to SFM objectives, implementation and stakeholder participation at the management level. Most of the respondents of the multi-interest stakeholder group agreed with SFM main contributions towards the elements of environmental objectives, followed by economic objectives and elements of social objectives. The approach for SFM assessment based on the different lenses of conceptual, corporate and stakeholder centric provides complementary evidence on the pragmatic implementation of SFM at the forest management level.

Keywords
Sustainable Forest Management (SFM); Stakeholder Analysis; Triple Perspective Typology; Stakeholder Relation Management (SRM); Forest Management Unit (FMU); participation

[1] International Tropical Forestry Programme, Faculty of Science and Natural Resources, Universiti Malaysia Sabah, Malaysia
[2] Professorship of Forest Policy and Forest Resource Economics, Technische Universität Dresden, Germany
***Corresponding author: nweber@forst.tu-dresden.de**

Contents

Abbreviations

CBD	Convention on Biological Diversity
CBRM	Community-based resource management
CI	Criteria and Indicator
CSR	Corporate Social Responsibility
DFR	Deramakot Forest Reserve
FAO	Food and Agriculture Organisation
FMU	Forest Management Unit
FR	Forest Reserve
GTZ	Gesellschaft für Technische Zusammenarbeit
ITTO	International Tropical Timber Organisation
IUFRO	International Union of Forest Research Organisations
JFM	Joint forest management
Kg.	Kampung
LTL	Long Term Licence Agreement
MOU	Memorandum of Understanding
MTC	Malaysian Timber Council
NCR	Native Customary Right
NGO	Non-governmental Organisation
PFR	Permanent Forest Reserve
RBJ	Rakyat Berjaya of Yayasan Sabah (a Forest Enterprise)
SFD	Sabah Forestry Department
SFM	Sustainable Forest Management
SFMLA	Sustainable Forest Management Licence Agreement
SRM	Stakeholder Relation Management
TPT	Triple Perspective Typology
UNCED	United Nation Conference on Environmental and Development Programme

1. Introduction

Sustainable Forest Management (SFM) has evolved as a concept to manage forests according to the forest principles with the main goal "to contribute to the management, conservation and sustainable development of forests and to provide for their multiple and complementary functions and uses" (IUFRO, 2005). Under the forest principles, it is proclaimed that "forest resources and forest lands should be sustainably managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generations" (UNCED, 1992). However, the SFM concept is dynamic, and the success of its implementation is governed by many factors. The principal and technical aspect of the concept has been developed over time with the involvement of many parties including local and international experts and organisations. People are key actors in the social-ecological system and disregard for local claims and needs has resulted in the failure of many forestry projects (Putz, 1994; Vanhanen et al., 2010). According to Nilsson (2001) to secure sustainable forest management, it must be comprehended that sustainable forestry is more an issue of human behaviour than an issue of trees and forests. How to build consensus among all stakeholders surrounding the issues of sustainability is one of the primary challenges facing the resource-based projects (Appiah, 2013, p. 37). The fundamental differences in visions about the forest, for example, have resulted in the failure of international negotiations for an international legally binding forest treaty (Arts, 2002; Lebel et al., 2004). Vanhanen et al. (2010, pp. 201-222) stipulated the forest stakeholders as people who depend directly on forests or participate in their management such as forest communities, forest managers and companies, conservationists, forest policy makers, development organisations, and scientist. They are facing the challenges related to understanding vulnerability, identifying adaptation options, and implementing adaptation with the changing of economic, social, global political environments and adaptation to climate change. Forest stakeholders are concerned and continuously have to deal with the questions of how the forests should look, what kind of products, services and experience it should be able to provide, and what functions the forest should perform (Gamborg and Larsen, 2003, p. 559). The conventional approach to describe and monitor status and trend of forests and forest management is through the application of established tools such as forest certification and the criteria and indicators (C&I) (Rametsteiner and Simula, 2003).

Sabah is the second largest of the thirteen states in the Malaysian Federation with a total land mass of about 7.49 million hectares. About 4.4 million ha or 58.8% of the land area is remaining under forest cover (MTC, 2010) with approximately 48.17% or 3.6 million ha of the land has been gazetted as Permanent Forest Reserve (PFR) to accommodate different purposes towards economic, social and environmental functions of the forest (SFD, 2011b). The SFM policy was launched in Sabah in 1997 after the successful implementation of SFM concept in Deramakot Forest Reserve (DFR), which was managed with the assistance and collaboration of the Malaysian Federal Government and international support of the German Agency for Technical Cooperation (Deutsche Gesellschaft für Technische Zusammenarbeit GTZ, now GIZ). Currently, there are 32 Sustainable Forest Management Licence Agreement (SFMLA)/Long Term Li-

CC BY

cence Agreement (LTL) signed by the Forest Management Unit (FMU) holders, with the task of managing most of the Commercial Forest Reserves (Class II) in the state. Apart from the SFMLA/LTL holders, the state government is also directly involved in managing nine FMUs that are under the jurisdiction of the Sabah Forestry Department (SFD). The experiences of SFM implementation in Sabah illustrate the importance of the role of stakeholders in the progress of the SFM concept at the forest management level. The stakeholder may influence the success or failure of the SFM in practice. Among the identifiable success factors in the progress of SFM implementation within the state are commitment, experience and resources of a broad community of interest that are elements of the partnership approach (SFD, 2011a, p. 211). The stipulated sources of challenge for implementation include " i) the complexity of problems, ii) understanding the dynamics of nature and iii) developing practical management planning system that respects both the complexity of the problem and the dynamics of nature" (SFD, 2011a, p. 235). The identified impediment for implementation is the concern of financial support required for SFM funding, the presence of local communities in SFM licence areas and the demand from wood processing industries (SFD, 2010, p. 201). Further issues are related to the lack of relations and mechanisms for corporate-stakeholder communication as a means of solving or discussing matters pertaining to SFM implementation involving both the FMU holders and their stakeholders (SFD, 2010, p. 209). These problems signify that research on the corporate stakeholder relationship under the SFM implementation is still of imperative necessity. This study was carried out so as to understand the contemporary implementation of SFM in Sabah with the focus on FMU holder-stakeholder relations at the forest management level.

2. Theoretical framework and methods

The stakeholder theory is "a theory about how business actually does and can work" (Freeman et al., 2010, p. 3). The primary purpose of the concept is to address three main problems of "understanding and managing a business, integration of ethics, responsibility, and sustainability with the usual economic view of capitalism, and understanding what it takes to be successful in current business world" (Freeman et al., 2010, p. 3). This theory provides the foundation for stakeholder identification, classification, and categorization and to understand their behaviour (Aaltonen, 2011). The stakeholder analysis as a tool under this concept is a process through which project managers try to apprehend and read the project's stakeholder environment in order to be able to define the right type of action concerning different stakeholders (Aaltonen, 2011). The three perspectives of stakeholder theory identified as Triple Typology Perspective of Stakeholder Theory [TPT] was introduced by Steurer (2006) to approach stakeholder management from three thematic perspectives of conceptual, corporate and stakeholder centric. The conceptual perspective explores how particular concepts (such as SFM) relate to business–stakeholder interactions. The corporate perspective focuses on how corporations address their stakeholders, and the stakeholder perspective analyses how stakeholders try to influence corporations (Steurer, 2006). The SRM under this concept is delineated as the transmission mechanism that connects the conceptual centric from societal groups to the business world (Steurer et al., 2005, p. 265). The Triple Perspectives Typology is incorporated into the second-order stakeholder theory by Donaldson and Preston (1995), which differentiates the descriptive, normative and instrumental aspect of stakeholder theory. The interrelations of the three concepts of corporate, conceptual and stakeholder centric and their relationship with the approaches for stakeholder relation management under the framework are shown in Figure 1.

The conceptual centric under this study is related to the overall SFM policy. The emphasis on this concept was to comprehend the general organisation and implementation of SFM concept and its interrelation with the corporate and stakeholders at the FMU level, respectively. SFM as the conceptual centric deliberates the normative human intervention towards the sustainability of the economic, social and environmental aspects of conservation, and the use of forests. It also covers administrative, legal and technical topics (Food and Agriculture Organization of the United Nations, 2013). The corporate perspective denotes to the FMU holders that manage the forest under SFM principles. Under the business case for sustainable development, the corporate perspectives seek to find how the firms can further their economic sustainability by giving consideration to social and environmental issues (Dyllick and Hockerts, 2002). The criterion for corporate sustainability constitutes a firm's eco-efficiency and socio-efficiency for the business case; eco-effectiveness and sufficiency for the natural case; and socio-efficiency and ecological equity for the societal case (Dyllick and Hockerts, 2002). The stakeholder centric is confined to many stakeholders who are directly or indirectly affected or can affect SFM in practice. This perspective analyses how stakeholders attempt to influence corporations (Steurer, 2006). It is focussed on stakeholder behaviour and understanding towards the current implementation of SFM at the FMU level. Stakeholder relation management is related to the question how the FMU holders and stakeholders manage their relationship to accomplish their interests and claims under the SFM implementation. It can advance an organisation's performance in many ways including through change in "the organisation's externally imposed mandates, funding sources, decision-making protocols, or accountability mechanisms" (Steurer et al., 2005, p. 7). Table 1 outlines the different approaches applied for the assessment.

2.1 Methods and Material

Various assessments of the SFM implementation at the FMU level were carried out under the different perspectives of conceptual, corporate and stakeholder. The method of the study is comprehensively referred to Lintangah (2014). Stakeholder analyses, questionnaire surveys, discussion via face-to-face

CC BY

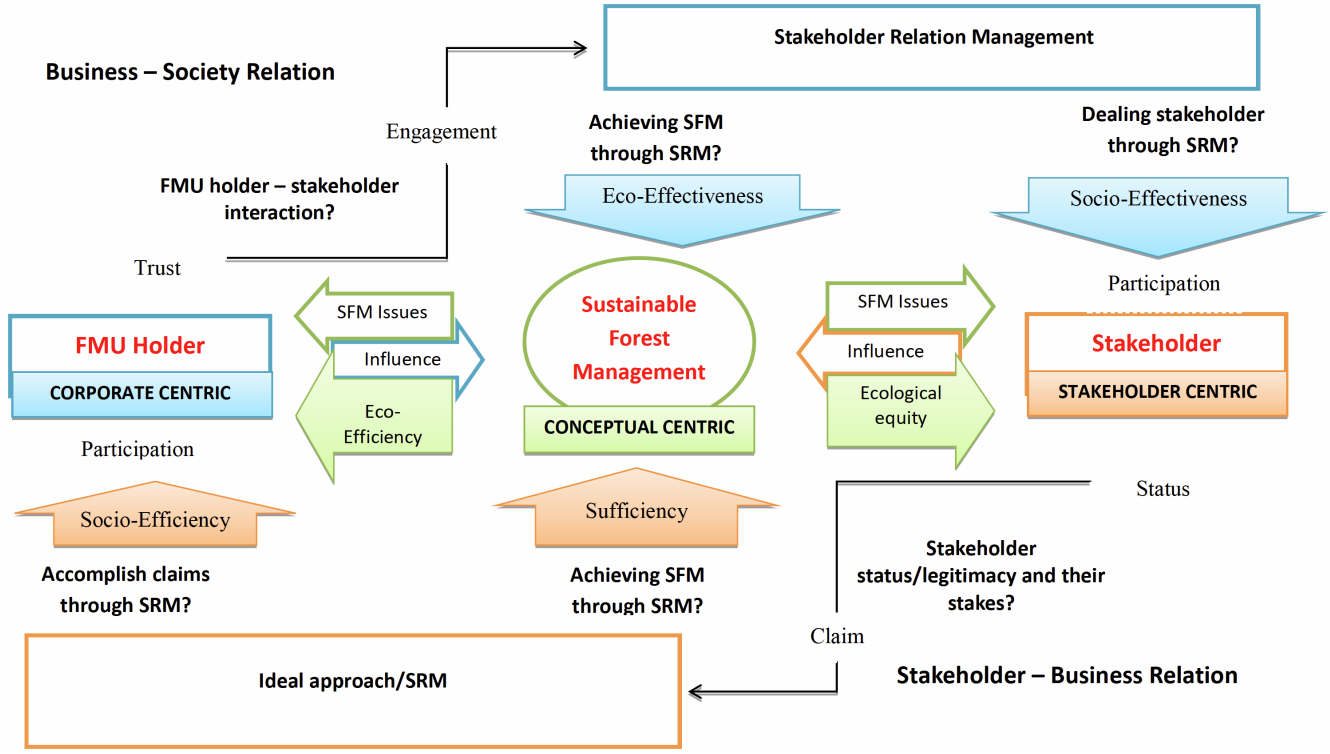

Figure 1. Conceptual framework of the study based on Dyllick and Hockerts (2002); Lintangah (2014); Steurer (2006)

interviews and literature reviews on reports and records associated with the SFM implementation ('lessons learned reports') were methods employed to collect information. The respondents include personnel of SFD and FMU holders, local communities and various stakeholders identified through expert interviews and snowball technique (Reed et al., 2009). Household samplings were used to investigate the stakeholders under the local community situated nearby or within the FMU area. The Q methodology (Watts and Stenner, 2012) and factorial analysis were used to identify the different stakeholder groups based on their behaviour and perception towards the current implementation of SFM. The approaches to assess SFM implementation under the different perspectives of conceptual, corporate and stakeholders are shown in Table 1. The 'conceptual' perspective evaluated the various elements of SFM policy under implementation, which constituted from sources comprising literature reviews, expert interviews, technical manuals, and managerial guidelines for SFM implementation at the FMU level. Furthermore, individual perception on the capacity levels of SFM implementation at the FMU level was identified through questionnaires survey and Q methodology. The questionnaire surveys apprehended the stakeholders' level of agreement, based on Likert Scale, towards the scenario of SFM implementation under the distinguished social, economic and environmental issues. The Q methodology was carried out to determine the stakeholders' attitude towards various statements (concourse) related to the SFM implementation at the FMU level.

Under the corporate perspective, direct interviews and questionnaire surveys were employed to comprehend the organisation and state of SFM implementation at the FMU level. FMU exist in various locations within the forest reserves throughout the state of Sabah. Each FMU was assigned to various FMU holders (corporates) that engage in managing the forests, i.e. state government, private FMU holders and state enterprise. In this study, four FMU areas were selected (two private FMUs, one under the state government, and one state enterprise). The FMUs concerned were FMU 10 (Sabah Forestry Department), FMU 16 (State Enterprise – Sabah Foundation joint venture managed by Rakyat Berjaya (RBJ) with Maxland Sdn. Bhd.), FMU7 (Private – Sabah Forest Industries Sdn. Bhd.) and FMU3 (Private - Timberwell Berhad). The corporate centric assessed the progress and capacity level of SFM implementation, approaches for Stakeholder Relation Management and the identification of Stakeholder Ranking based on their involvement in various programs and activities carried out in the respective FMU area.

The stakeholders in the FMU areas can be divided into two main categories of internal and external stakeholders. Internal stakeholders comprise the FMU workers, shareholders and forest managers while external stakeholders were referred to stakeholders outside the FMU holder's organisation. In this study, the stakeholders were categorised under two main groups, i.e. local community and multi-interest stakeholder group. The multi-interest stakeholder group was further differentiated according to different power relation (hard or soft

CC BY

Table 1. Triple Perspective Typology approaches for SFM assessment at the FMU level

Perspectives	Conceptual	Corporate	Stakeholders
Target	Overall SFM concept	FMU holders	Stakeholders
Data collection	Expert interviews (policy maker)	Interviews (e. g. forest manager)	Interviews (e. g. community representatives)
	Questionnaire survey	Questionnaire survey	Questionnaire survey
	Card sorting (Q methodology)		Card sorting (Q methodology)
	Literature review		meetings
Type of information	SFM policy and implementation	SFM operations and implementations at the FMU level (objectives, programs and activities)	Stakeholder involvement and engagement under SFM implementation and operation
	Stakeholder identification (potential and static)	Stakeholder identification (dynamic)	Stakeholder identification (dynamic)
SFM assessment	SFM objectives	Progress and capacity level of SFM	Level of stakeholder participation
	Issues pertain to SFM implementation	Approaches to stakeholder relation management	Approaches to stakeholder relation management
		Stakeholder involvement in SFM operations	Level of cooperation and conflicts
			Stakeholder dependency on forest and SFM implementation
Data analysis	Descriptive	Descriptive	Descriptive
	Factor interpretation (Q methodology)	Factor interpretation (Likert scale)	Factor interpretation (Likert scale)

power) that they possessed (Mitchell et al., 1997; Nye, 2004). This differentiation provides the identification of governmental or intergovernmental agencies, industrial and commercial groups, and other interest groups. Questionnaires were used to obtain responses from the multi-interest stakeholder group on their experiences and level of agreement toward various issues concerning the current SFM implementation in Sabah. The surveys were sent to 200 listed respondents of various institutions through online and printed copy. There were 104 returned by respondents, which represent a response rate of 43.6%. The respondents from the local communities were residents of the selected villages within or on the fringe of the four FMU areas involved in this study. A total number of 332 respondents participated in the study. They comprised respondents from eight villages namely Kampung (Kg.) Gana (FMU 3), Kg. Lupakon, Kaingaran and Kg. Sinua (FMU10), Kg.. Sumambu, Kg. Alutok and Kg. Tilis (FMU 7), and Kg. Dewara and Kg. Mangkuwagu (FMU 16). The assessment under the stakeholder centric included the stakeholder participation and involvement in SFM implementation, approaches for stakeholder relation management and the stakeholders' perceptions of the current SFM implementation at the FMU level.

3. Results

3.1 Conceptual Centric

The descriptive function of the SFM approach served as the normative basis on how the people should manage the forest in a responsible way in order to ensure the maximisation of social, economic and environmental benefits for current and future generations. It demonstrates the matters and objectives of the SFM to be adhered to by both the FMU holders and stakeholders. Furthermore, it provides an extensive means of

CC BY

stakeholder identification and the categorisation of static and potential stakeholders that grounded from SFM principles, forest legislation, and SFM programmes and activities.

There is a wide range of SFM documentation on international, national, and management levels either functioning specifically or as a combination of descriptive, normative, and instrumental aspects. These include the Forest Principles, Agenda 21, criteria and indicators for the ITTO guidelines on Sustainable Forest Management (ITTO, 2005),the Convention on Biological Diversity (CBD) and various forest-related laws and regulations at both federal and state level, which support the State Forest Policy on SFM. The Sustainable Forest Management Licence Agreement that is based on the Section 15 of the Sabah Forest Enactment 1968 provides the legal basis for the SFM implementation in the state. At the FMU level, the comprehensive Forest Management Plan attributes all the management prescriptions and activities for SFM implementation on the ground. The FMP is supported by other technical guidelines, operational plans and standards such as the Annual Work Plan, the Comprehensive Harvesting Plan, the Forest Management Standard and the Environmental Impact Assessment.

The various potential stakeholders were identified according to their interests and claims towards the different classes of forest reserve or particular established forest zonations inside the FMU area. The identification of static stakeholders is exclusively based on their existence in the written documents. The identified stakeholders can be grouped and differentiated along a distinct categorisation (e.g. potential or actual, active or static, and internal or external). The interaction of the stakeholders under the SFM concept can be explained by the attribute of their power (hard and soft power), and legitimacy and urgency (Mitchell et al., 1997; Nye, 2004). The details of stakeholder's information at different levels (international, federal, state, and FMU level), distinct types of power (hard and soft power) and their different interests and claims can be observed from the SFM documentation, relevant policy and legislation, and also extracted from records and reports at the organisational and operational levels.

The assessment under the conceptual centric results from the level of agreement by the multi-interest stakeholder groups on the SFM achievements towards the environmental, social and economic objectives. Most of the respondents agreed with SFM main contributions towards the elements of environmental objectives, followed by elements of economic and social objectives. Whereas the highest level of agreement concerning the environmental objectives was found regarding the issues of preservation of the natural habitat of wildlife followed by conservation of water catchment areas, and conservation of the diversity of wildlife species. The highest level of agreement with regard to economic objectives included sustaining the source of timber and non-timber forest products, diversified job opportunities and income, and the continuation of the contribution of timber harvesting to state revenue. In terms of social objectives, the most agreed to statement was related to opportunities given to stakeholders to express their opinions and concerns about forest management, opportunities and experiences for recreation, safety of workers and communities, and the conservation of special features of the forest for local communities. The statements least agreed to were related to the sharing of information with local communities, respecting local community rights, accessibility of forest resources to the local communities, and improving the standard of living of the local communities.

The results under the Q Methodology indicated some significant consensus statements among the identified groups towards the various matters and issues related to the current SFM implementation. These comprised the influential factors towards effective SFM progress that include the administration and leadership of SFD, and good collaboration between SFD and FMU holders. Other consensus statements were related to an agreement on the roles of SFM concept in encouraging investment in the forestry sector and its explicit influence towards the rural development in the state. It was agreed that stakeholder participation under the SFM concept could promote learning on the synergy of various forest uses and also can influence the decision-making process.

3.2 Corporate Centric

The four SFMLA holders selected in this study represent different arrangements in terms of SFM objectives and institutional backgrounds. There are many programmes and activities of SFM operations conducted at the FMU level, which embrace numerous stakeholders. The operations include plan preparation, social baseline surveys, implementation and supervision of SFM operations, as well as programmes of forest protection, forest conservation, and forest restoration. Different SFMLA holders indicated distinct levels of priority on every SFM element implemented in their respective FMU area. In FMU3, the objectives to be achieved are connected with the three elements of economic production, environmental services and the socio-economic function of the forest. The FMU holder is engaged with most of the SFM projects, but less involved with activities related to wood manufacturing, non-timber forest products and activities associated with recreation and ecotourism. The management of FMU7 is mainly associated with activities related to the economic production function of the forest, which includes timber harvesting, timber marketing, wood manufacturing and industrial forest plantations. This FMU was also highly involved in all activities related to environmental services that associated with the protection of water catchment areas, forest rehabilitation and the protection of biodiversity and wildlife habitats. FMU7 is relatively associated with activities connected to the socio-economic function of the forest, which includes culture, education, research, recreation, and harvesting of forest products for the local community, but recorded a response of 'not agreed' with hunting as an activity in their FMU area. The FMU10 is mainly oriented towards the protection of environmental services of the forest, which includes the conservation

CC BY

of water catchment areas, providing wildlife habitat, forest rehabilitation and biodiversity. It did not engage in activities related to the direct economic function of timber harvesting, except for non-timber forest production for the local communities, and activities related to recreation and tourism. The FMU entangled with activities related to the socio-economic function of the forest, including the element of hunting activity but 'not so much agreed' upon cultural activity and timber production for the local community. In FMU16, the main concern is activities related to the economic production of the forest with the exclusion of activities associated with non-timber forest products, recreation and tourism. The FMU is also highly concerned with activities related to environmental services and the socio-economic function of the forest with the exception of the element of hunting. The overall performance and current capacity level of forest management planning and implementation are differing amongst the FMU holders. However, they generally agreed on the increased level of their experience and planning for forest management and operation in their respective FMU area.

The SFM operations facilitate the identification of various stakeholders with distinctive claims and interests related to the operation undertaken on the ground. They are referred to as dynamic stakeholders. These active stakeholders can move into different positions of salience (latent, expectant or potential) "depending on their attributed possession of power, legitimacy, and/or urgency" (Mitchell et al., 1997). The attribute of urgency determines the dynamic stakeholders, which depends on their contemporary existence, the important or critical relation and the claim of the stakeholder (ibid). The combination of analytical and reconstructive approaches was used to identify and categorise the stakeholders based on their legitimacy and power. Stakeholders' participation in the various elements of SFM programmes and activities were determined by the FMU holders based on pre-listing SFM operations relevant to their respective FMU. The programmes and activities identified as having a greater involvement of stakeholders are those associated with community forests, followed by forest conservation, preparation of development and management plans, forest protection, human-resource development, ecotourism programmes and the administration of the FMU holders. Stakeholders with more connections in various programmes and activities in the FMU area were internal stakeholders (FMU workers), followed by SFD and contractors. Other stakeholders with higher ranking based on the weighted rank included the local community, consultants, business and trade, researchers and scientists, and other state government agencies.

3.3 Stakeholder Centric

3.3.1 Multi-interest stakeholder group

The multi-interest stakeholder group, as conceptualized in this study, consists of personnel from SFD and various government agencies, FMU employees, NGOs, consultants, educational and research institutions. Stakeholders under the multi-interest stakeholder group were mainly identified according to their organisation and job descriptions. Different organisations were engaged in SFM implementation with distinct roles and purposes, or claims and interests. Most of the stakeholders were connected with SFM implementation owing to their relationship with governmental services (70%). This was followed by stakeholders with occupations in fields connected with environmental conservation (64%), forest management and conservation (64%), wildlife and biodiversity conservation (45%) and forest plantation and restoration (45%). Others had professional relationships with employees or FMU contractors, forest communities, suppliers, forestry-based associations, consultants, manufacturers, educations, researchers and tourism. There were also stakeholders connected with SFM with regard to activities such as forest harvesting, forest plantations, community forestry, trade and industry, recreation, culture and tourism, agriculture, agroforestry and protection of environmental services. The multi-interest stakeholder group was categorized into three main sub-groups that include the SFD group, other government agencies and non-government organisations from the private sector. A further option to categorise the multi-interest group is given by their different response to Likert Scale questions concerning the current implementation of SFM at the management level. They bestowed their different background, interests, claims, and commitments to SFM implementation that also determined their engagement, cooperation, conflicts and level of participation with the FMU holder. A variety of indicators was used to determine the influential factors towards stakeholder commitment to SFM implementation. The main factors proved to be their adherence to sound management of the forest, protection and conservation of the environment, conservation of biodiversity, protection of water catchment areas, forestry education, research, and livelihood of the local communities and their job security.

3.3.2 Local communities

The study of local communities as stakeholders in SFM implementation was conducted in villages located within or in the vicinity of the selected FMU areas. The communities of the villages within the selected FMUs have a different background in terms of sociodemography, surrounding landscape characteristics and infrastructures development. The indicators of claim and interest of the local communities towards SFM implementation have been derived from their relation and dependency towards the forest. Their dependency on the forest is mainly related to the importance of the forest for their livelihood, including source for fruit and food, traditional medicines, wood and materials for buildings and boat making, and gathering of other non-timber forest products. The important forest products collected by the communities are resin, wood and material for house and boat making, wild honey, rattan and bamboo, firewood, game animals and raw material for handicrafts. Other reasons for entering the forest were associated with hunting, farming and recreational activities. Different villages displayed different levels of interest and

CC BY

claims towards the forest managed under the respective FMU holders. These claims and interests were mainly related to native customary rights on land including water catchment areas, old burial sites, farmland inside the forest, historical sites, places to collect forest resources such as wood for housing, game animals, foods, medicinal plants and other non-timber forest products as well as places for activities such as hunting, recreation, and religious activities. Community participation in SFM implementation differs based on contribution of SFM to their livelihood, cooperation and conflict level with FMU holders, issues and problems, and overall perception of their livelihood affected by the SFM implementation at the FMU level.

The contributions of SFM implementation were seen in elevating the standard of living and creation of job opportunities, development and maintenance of physical infrastructure, increased opportunities in terms of human resource development which include training and attending courses, changes towards a positive lifestyle, provision of health services and improving the quality of the surrounding environment. The respondents rated their overall agreement on the contribution of SFM implementation to the communities at a very low level (40.07%), medium (20.24%), low (18.86%), high (12.12%) and very high level (9.73%). Only a few respondents indicated the level of contribution under 'very high', which was related to improving environmental quality (17.28%), uplifting the living standard (13.11%) and increased job opportunities for the communities (11.11%). Other contributions of SFM rated at a very high level involved less than 10% of the total number of respondents. The contribution of SFM implementation rated at 'very low' by most of the respondents was confined to the provision of opportunities for human-resource development and attending courses (52.62% of all respondents). This was followed by contribution on provision for health facilities (52.17%), contribution to improving the welfare of the communities (46.01%), contribution towards positive lifestyle changes (43.61%), and contribution towards the maintenance of infrastructure (40.92%). Other contributions of SFM implementation at the FMU level, as indicated by respondents, are related to the provision of housing and woodlots for rubber and paddy field cultivation, participation in the forestry community projects implemented by the State Forestry Department, provision for recreation facilities, and development of infrastructure such as roads, bridges, schools and clinics.

There were various issues and problems related to SFM implementation encountered by the different villages at a distinct degree in their respective area. These include dispute of land boundary with the forest reserve under FMU, claim for native land (NCR inside FR): unclear land status and uncertainty of forestry community project sustainability, water catchment areas inside FMU areas, lack of consultations from the FMU holder, lack of interaction and cooperation with the FMU holder, respecting local practice and tradition, restriction on customary practices inside forest areas like agricultural activities and collecting forest produce, and lack of facility provision with regard to road and infrastructure maintenance. Further issues were the lack of understanding of the SFM concept and implementation, the lack of opportunities for job provision by the FMU holders and lack of involvement and cooperation with the relevant government or others agencies.

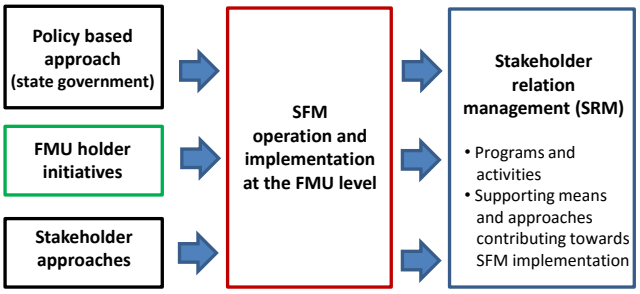

Figure 2. Identification of stakeholder relation management

3.3.3 Stakeholder Relation Management (SRM)

The stakeholder relation management within SFM implementation is associated with the management of internal and external stakeholder interaction so as to promote and support the attainment of SFM objectives at the FMU level. There are different approaches for stakeholder relation management under the SFM implementation, both by FMU holders and stakeholders, which depend on the different stakeholders' perspectives (Figure 2). The approach of SRM under the FMU holders may consist of Quality Management System, Human Resource Development and Standard Operating Procedures. The SRMs concerning the multi-interest stakeholder group include the so-called interagency planning team, stakeholder workshops and co-operation under the project steering committee. Most of the communities solve their problems by conveying the issues through meetings and representation by the heads of the villages or other relevant agencies or authorities which can deal directly with their problems, such as the SFD and other government agencies. The collaboration and co-operation between FMU holders and international institutions at the FMU levels include development projects, consultancy, funding, research, education and training programmes. The programmes are implemented through Memorandum of Understanding (MOU), contract agreement and various joint venture management committees. Among the highly agreed supportive elements for SRM are technical and management guidelines, such as the Forest Management Plan, the Annual Work Plan, and various federal and state laws. Table 2 summarizes the results of stakeholder relation management under the Triple Typology of Stakeholder Theory.

4. Discussion and Conclusions

In this case study, detailed insight was gained into attitudes and perceptions of individuals and stakeholder groups towards the implementation of SFM at the operational level in Sabah, Malaysia. However, it has to be mentioned here that these

CC BY

Table 2. Triple Perspective Typology approaches for SFM assessment at the FMU level

Perspectives	Conceptual	Corporate	Stakeholders
Focus	SFM concept	FMU holders	Stakeholders
Stakeholder identification and categorisation	Potential stakeholder • Static • Legitimate	Dynamic stakeholder • Static • Legitimate	Multi-interest stakeholder Local communities
Stakeholder interests, characteristics and circumstances	Interests and claims • International • National • Management level	Participation and involvement in SFM operation • Chain of operations and responsibilities • Programs and activities	Interests /stake/claims • Can affect or affected by SFM (e.g. forest dependency) • SFM contribution • Issues and problems
Patterns and contexts of interaction between stakeholders	Task and function	Conflict, or cooperation Patterns of communication; trust and influence Flow of information between the actors	Conflict, or cooperation Patterns of communication; trust and influence
Define options for Management (Supporting means and approaches contribute towards SFM)	SRM: Conceptual based approach – SFM Policy, Forest Law and Legislation, International and Regional Cooperation and Agreement on Forest	SRM: Corporate / FMU Holders based Initiatives – e.g. SFMLA/LTL, Forest Management Plan, Forest Certification, SOP	SRM: Corporate – Stakeholder-based initiatives – e.g. Community Forestry Project, Joint Forest Management, Community Based Forest Management

findings have not been cross-checked with the state of the forests in the respective areas. Most of the respondents of the multi-interest stakeholder group agreed with SFM main contributions towards environmental objectives, followed by economic objectives and social objectives. Similar to other regions in the world, an important question was whether or not community values were adequately represented under current policies, land management and tenure systems, certification schemes, management planning, and current research priorities (Kozak et al., 2008). A case study on evaluation of SFM implementation in two forest management models in Vietnam and Malaysia by Le et al. (2012) suggested that greater involvement from private sector and other stakeholders, including the local people, can advance the performance of forest management practice at the FMU level.

Furthermore, it became obvious that the SFM contributions at the management level are influenced by various factors. These mainly depend on the SFM objectives laid out by the different FMU holders, which were stipulated in the Sustainable Forest Management Licence Agreement or Long Term Licence Agreement. The management objectives could be delineated under the Malaysian concepts of Natural Forest Management (NFM), Industrial Tree Plantation (ITP), Conservation Area, and Social Forestry. Moreover, the type of forest reserve classification and the existence of local communities and other stakeholders in the FMU area determine the programs and activities undertaken by the FMU holders in their respective area. Contributions to SFM are stipulated as improving environmental quality, providing job opportunities, facilitating infrastructure development and maintenance, and uplifting the living standard of the communities. The pertinent issues and problems faced by the local communities are related to their claim and dependency on the forest land. Balancing of complex interests between people and forest resources necessitates partnership and negotiating approaches and outcomes, in which "local knowledge is recognized, valued and used" (Nasi and Frost, 2009, p. 4). There are manifold approaches for Stakeholder Relation Management under SFM at the Forest Management Unit level, which include the concepts of partnership, participation, coopera-

CC BY

tion and collaboration under programs such as community forestry, Community-based resource management (CBRM), Joint forest management (JFM), Corporate Social Responsibility (CSR) programs, inter-agencies involvement, and contract forestry. Adapted to the specific situation, these will promote and support the SFM implementation at the FMU level. SRM creates opportunities for participation by the stakeholders, which in turn promotes effective and efficient implementation of SFM at the FMU level. Especially social aspects can be enhanced through community forestry initiatives. Rebugio et al. (2010) described successful ways to improve community forestry. In their study, characteristic elements were a legally stipulated community forestry policy, and the reinvention of forestry agencies. They claim "a more supportive and facilitative role to assist communities to improve their livelihood and the condition of the forests. As such, the forestry agency has to reinvent itself to be able to cope with this new role, and maintain relevance" (Rebugio et al., 2010, p. 366). Further aspects refer to the promotion of sustainable livelihoods of the people, comprehensive and continuing capacity building of the community, availability of funding support, as well as the consideration of varying interests of local community and other stakeholders to participate in decision-making on forest management and benefit sharing from the forests. These findings could be confirmed by our study as well.

Summing up, the combination of Triple Typology of Stakeholder Theory with Stakeholder Analysis provides an analytical tool for business-stakeholder relationship under SFM implementation at the management level. It is suitable for deepening knowledge and providing critical information for SFM enhancement. The approach can be considered as a well-suited instrument for the assessment of interrelations between corporations and stakeholders. Thus, it can crystallize the focus on three different aspects, based on a theoretical or pragmatic background, respectively. It integrates the human perspective under the stakeholder theory to achieve social objectives for sustainability under SFM policy, within a wider scope of the ecosystem approach and the concept of sustainable development.

Acknowledgments

This study was financially supported by the Ministry of Malaysian Higher Education (MOHE) and Universiti Malaysia Sabah (UMS). We also would like to thank two anonymous reviewers for their valuable suggestions for improvement.

References

Aaltonen, K. (2011). Project stakeholder analysis as an environmental interpretation process. *International Journal of Project Management*, 29(2):165–183, doi:10.1016/j.ijproman.2010.02.001.

Appiah, M. (2013). Understanding the complexities and resource sustainability in Afram Plains, Ghana. *Environmental Management and Sustainable Development*, 2(1):34–50, doi:10.5296/emsd.v2i1.3040.

Arts, B. (2002). 'Green alliances' of business and NGOs. New styles of self-regulation or 'dead-end roads'? *Corporate Social Responsibility and Environmental Management*, 9(1):26–36, doi:10.1002/csr.3.

Donaldson, T. and Preston, L. E. (1995). The stakeholder theory of the corporation: concepts, evidence, and implications. *The Academy of Management Review*, 20(1):65–91, doi:10.2307/258887.

Dyllick, T. and Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business Strategy and the Environment*, 11(2):130–141, doi:10.1002/bse.323.

Food and Agriculture Organization of the United Nations (2013). Towards sustainable forest management, promoting sustainable management of forests and woodlands.

Freeman, R. E., Harrison, J. S., Wicks, A. S., Parma, B. L., and Colle, S. D. (2010). *Stakeholder theory: The state of the art*. Cambridge University Press, Cambridge.

Gamborg, C. and Larsen, J. B. (2003). 'Back to nature' a sustainable future for forestry? *Forest Ecology and Management*, 179(1-3):559–571, doi:10.1016/S0378-1127(02)00553-4.

International Tropical Timber Organization (2005). Revised ITTO criteria and indicators for the sustainable management of tropical forests including reporting format. ITTO Policy Development Series No. 15.

IUFRO (2005). *Multilingual Pocket Glossary of Forest Terms and Definitions*. IUFRO, Wien, Austria.

Kozak, R. A., Spetic, W. C., Harshaw, H. W., Maness, T. C., and Sheppard, S. (2008). Public priorities for sustainable forest management in six forest dependent communities of British Columbia. *Canadian Journal of Forest Research*, 38(12):3071–3084, doi:10.1139/X08-146.

Le, D., Lintangah, W., Pretzsch, J., Weber, N., and Bao, H. (2012). Implementation of sustainable forest management in two different forest management unit models in Vietnam and Malaysia. In *Tropentag 2012, Göttingen, Germany, September 19-21*.

Lebel, L., Contreras, A., Pasong, S., and Garden, P. (2004). Nobody knows best: alternative perspectives on forest management and governance in Southeast Asia. *International Environmental Agreements*, 4(2):111–127, doi:10.1023/B:INEA.0000040415.96194.b5.

Lintangah, W. (2014). *Stakeholder Analysis in Sustainable Forest Management in Sabah, Malaysia*. PhD thesis, Technische Universität, Dresden.

Malaysian Timber Council (2012). Malaysia Forestry & Environment (Facts and Figures).

Mitchell, R. K., Agle, B. R., and Wood, D. J. (1997). Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts. *The Academy of Management Review*, 22(4):853–886, doi:10.2307/259247.

Nasi, R. and Frost, P. G. H. (2009). Sustainable forest man-

CC BY

agement in the tropics: Is everything in order but the patient still dying? *Ecology and Society*, 14(2):40.

Nilsson, S. (2001). Future challenges to ensure sustainable forest management.

Nye, J. S. (2004). *Soft power: The means to success in world politics*. Public Affairs, New York, 1st ed edition.

Putz, F. E. (1994). Approaches to Sustainable Forest Management. CIFOR Working Paper No. 4.

Rametsteiner, E. and Simula, M. (2003). Forest certification - an instrument to promote sustainable forest management? *Journal of Environmental Management*, 67(1):87–98, doi:10.1016/S0301-4797(02)00191-3.

Rebugio, L. L., Carandang, A. P., and Dizon, J. T. (2010). Promoting Sustainable Forest Management through Community Forestry in the Philippines. In Mery, G., Katila, P., Galloway, G., Alfaro, R. I., Kanninen, M., Lobovikov, M., and Varjo, J., editors, *Forests and society*, volume v. 25 of *IUFRO world series*, pages 355–368. International Union of Forest Research Organizations and Available from IUFRO-WFSE/Metla, Vienna and Vantaa, Finland.

Reed, M. S., Graves, A., Dandy, N., Posthumus, H., Hubacek, K., Morris, J., Prell, C., Quinn, C. H., and Stringer, L. C. (2009). Who's in and why? A typology of stakeholder analysis methods for natural resource management. *Journal of Environmental Management*, 90(5):1933–1949, doi:10.1016/j.jenvman.2009.01.001.

Sabah Forestry Department (2010). Annual Report 2010.

Sabah Forestry Department (2011a). Annual Report 2011.

Sabah Forestry Department (2011b). Fact Sheets of Forest Reserves in Sabah.

Steurer, R. (2006). Mapping stakeholder theory anew: from the 'stakeholder theory of the firm' to three perspectives on business-society relations. *Business Strategy and the Environment*, 15(1):55–69, doi:10.1002/bse.467.

Steurer, R., Langer, M., Konrad, A., and Martinuzzi, A. (2005). Corporations, stakeholders and sustainable development I: a theoretical exploration of business–society relations. *Journal of Business Ethics*, 61(3):263–281, doi:10.1007/s10551-005-7054-0.

United Nations Conference on Environment and Development (1992). Non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests.

Vanhanen, H., Rayner, J., Yasmi, Y., Enters, T., Fabra-Crespo, M., Kanowski, P., Karppinen, H., Mainusch, J., and Valkeapää, A. (2010). Forestry in Changing Social Landscapes. In Mery, G., Katila, P., Galloway, G., I. Alfaro, R., Kanninen, M., Lobovikov, M., and Varjo, J., editors, *Responding to global drivers of change*, volume 25 of *IUFRO world series*, pages 201–222. International Union of Forest Research Organizations, Vantaa, Finland.

Watts, S. and Stenner, P. (2012). *Doing Q methodological research: Theory, method and interpretation*. SAGE, London.

CC BY