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Improving forest governance in Belize:
stepping stones towards community forest management

by

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DEDICATION

To my child, who provided the motivation to go the extra mile, in the realization that she will live with the consequences of the decisions in natural resource management being made in Belize today;

To the people of Conejo, Sundaywood and Boom Creek Villages, that someday soon the dream will be realized.

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To Almighty God for the courage and inspiration to achieve this goal; to my thesis committee, for their sound technical advice and words of wisdom, especially to M.Sc. Cornelius Prins and Dr. Glenn Galloway, for providing the extra moral and technical support; to M.Sc. Bastian Loumann and the FINFOR project for technical support and for financing a portion of the investigation; to my husband, Dwight, for his patience, understanding, love and support during this journey; to my parents, Carlos and Amira Santos, and the rest of my family, for being there for me always; to the Government of Belize, particularly the Ministry of the Public Service and the Ministry of Natural Resources and the Environment, for facilitating the process to pursue this course of studies; to my colleagues at the Forest Department, especially Mrs. Carmita Flores and Mr. Celedonio Chiac, for their patience, assistance and support; to Lisel Alamilla and Bartolo Teul of the Ya'Axche Conservation Trust, for their encouragement and interest in this research, and logistical support during the field phase; to Greg Choc of the Sarstoon-Temash Institute of Indigenous Management, for providing greater insight into the realities of the impacts of resource management decisions at the local level and for demonstrating that with the right conditions, communities are capable; to Senator Pulcheria Teul and the Toledo Maya Women's Council, who always emphasized the importance of inclusion of women in resource management, and for logistical support during the field phase of the research; to Wayne Bardalez, for his assistance in carrying out the surveys and interviews in the communities; and last but not least, to the communities of Conejo, Sundaywood and Boom Creek for the warm welcomes and never-ending patience and collaboration.

BIOGRAPHY

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Palabras claves: manejo forestal sostenible, manejo forestal comunitario, estándares, capitales de la comunidad, medios de vida, Toledo, Belice.

RESUMEN

Con el propósito de determinar el entorno y el potencial para el manejo forestal comunitario en Belice, se cumplió tres actividades principales durante la investigación: a) el desarrollo de estándares para el manejo forestal sostenible, b) la evaluación de manejo forestal sostenible en Belice, y c) una evaluación de los capitales de la comunidad en tres comunidades (las aldeas de Conejo, Sundaywood y Boom Creek) en el distrito de Toledo, Belice.

El desarrollo de los estándares se hizo a través de una serie de cuatro filtros, involucrado revisión de literatura, y revisiones de parte del Departamento forestal de Belice, actores en el sector forestal de Belice y una revisión y aprobación final del comité consejero de la tesis. El estándar fue utilizado como la base de la encuesta para la evaluación del desempeño del país en manejo forestal sostenible. Las encuestas fueron distribuidas a representantes de los sectores de la Comunidad, el Gobierno, ONG, Privado, y Otros. Un total de 57 encuestas fueron recolectadas. Se calificaron los indicadores en una escala de dos (desempeño débil) a cinco (desempeño fuerte). Los cinco sectores calificaron el desempeño bajo del nivel aceptable (tres), con la dimensión Institucional como el más débil. La evaluación de los capitales determino que los capitales más débiles en las tres comunidades son financiero y físico, mientras los más fuertes son social, cultural y natural. Las comunidades reconocían la necesidad de adquirir capacidades y conocimiento en temas de manejo forestal.

En el análisis final, fue determinado que el marco político, legislativo e institucional no es favorable para el manejo forestal comunitario, pero a pesar de esta, hay dos comunidades en Toledo que han logrado éxito con el desarrollo de planes de manejo forestal sostenible para sus bosques comunitarios.

Santos, T. 2009. Improving forest governance in Belize: stepping stones towards community forest management. M.Sc. Thesis. CATIE, Turrialba, Costa Rica.
Key words: sustainable forest management, community-based forest management, standards, community capitals, livelihoods, Toledo, Belize.

SUMMARY

In order to determine the environment and potential for community forest management in Belize, three main activities were carried out during this investigation: a) the development of sustainable forest management (SFM) standards, b) an evaluation of sustainable forest management in Belize, and c) an assessment of community capitals in three communities (Conejo, Sundaywood and Boom Creek villages) in the Toledo District of Belize.

The SFM standards were developed through a series of four filters involving literature review and revisions by the Belize Forest Department, other forest sector stakeholders in Belize and the final revision and approval by the thesis committee. The standard was then utilized as the basis for a survey instrument to carry out the assessment of the country's performance in SFM. The survey instrument was distributed to representative from the Community, Government, NGO, Private and Other sectors. A total of 57 surveys were collected. A score sheet ranging from two (poor performance to five (outstanding performance) was utilized to rate the indicators. The results showed that all five sectors' average score for performance in SFM in Belize was below acceptable level and that the Institutional dimension was considered the weakest. The community capitals assessment determined that in all three communities the weakest capitals were financial and physical while social, cultural and natural were the strongest. The need to acquire specific forestry skills and knowledge was recognized by the communities.

In the final analysis, it was determined that the current policy, legislative and institutional framework is not favorable for community forest management, but in spite of this, two communities in Toledo have succeeded in developing sound SFM plans for their community forests.

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LIST OF UNITS, ABBREVIATIONS AND ACRONYMS

AI	Appreciative Inquiry
APAMO	Association of Protected Areas Management Organizations
APO	Annual Plan of Operations
BELTRAIDE	Belize Trade and Investment Development
BERDS	Biodiversity and Environmental Resource Data System of Belize
CBFE	Community-based Forest Enterprise
CFM	Community Forest Management
CBO	Community-based Organization
CBSFM	Community-based sustainable forest management
CIFOR	Center for International Forestry Research
CATIE	Centro Agronómico Tropical de Investigación y Enseñanza
EIA	Environmental Impact Assessment
FAO	Food and Agriculture Organization of the United Nations
FD	Forest Department
FLEG	Forest Law Enforcement and Governance
FMP	Forest Management Plan
FSC	Forest Stewardship Council
GOB	Government of Belize
GPS	Global Positioning System
IDS	Institute of Development Studies
ITTO	International Tropical Timber Organization
LTFL	Long Term Forest License
LTPFP	Long Term Private Forest Permit
MBR	Maya Biosphere Reserve
MLA	Maya Leaders Alliance
MNRE	Ministry of Natural Resources and the Environment
NAVCO	National Association of Village Councils
NGO	Non-Governmental Organization

NFP	National Forest Program Facility of the FAO
NPAPSP	National Protected Areas Policy and System Plan
NTFP	Non Timber Forest Product
PEFC	Pan-European Forest Council
RIL	Reduced Impact Logging
SATIIM	Sarstoon-Temash Institute for Indigenous Management
SD	Sustainable Development
SFM	Sustainable Forest Management
SRA	Social Responsibility Agreements
STNP	Sarstoon-Temash National Park
THFI	Toledo Healthy Forests Initiative
YCT	Ya'Axche Conservation Trust
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification and Drought
UNCED	United Nations Conference on Environment and Development
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations Collaborative Program on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
USAID	United Nations Agency for International Development

1 INTRODUCTION

The forest management setting in Belize has undergone significant changes since the forest sector was established under British colonial rule. Today the forests are faced with pressures that were not present in early colonial times, such as a growing population, expanding areas under agriculture to feed this population, and demands of rural residents for equal access to forests. Still operating under a colonial policy (the 1954 Forest Policy of British Honduras), the Belize Forest Department is faced with the massive challenge of overseeing the sustainable management of the country's forest resources, even as its own resources to operate continue to diminish, and the policy and legislative framework limit the extent to which it can foster creativity and innovation to overcome the challenges.

Fortunately, efforts are underway to modernize the national forest policy and its corresponding legislations, under the auspices of the Food and Agriculture Organization (FAO) of United Nations' National Forest Program Facility (NFP). Among the many focal areas being investigated under this project are the opportunities presented by community-based forest management. Belize has very little experience in this area, although several pilot projects have been initiated by partner NGOs in the sector.

This study analyzes the option for the formal inclusion of community-based sustainable forest management (CBSFM) as an element of a revised sustainable forest management framework for Belize. The current policy, legislative and institutional structure is evaluated utilizing a comprehensive set of sustainable forest management standards which were developed specifically for this study, to determine the barriers they pose to CBSFM. Additionally, three communities in Toledo are used as case studies to assess the opportunities and challenges at the local level, through the strengths of the seven community capitals: human, social, cultural, political, financial, physical and natural. Based on the results of the analyses, recommendations are made on how CBSFM could and should be built into a revised forest governance structure for Belize.

1.1 Background

1.1.1 Belize

Belize, a British colony till 1981, is the only English speaking nation in Central America. The country, bordered by México in the North, Guatemala in the west and the Caribbean Sea in the east, lies between 15° 52' and 18° 30' North Latitude and 87° 28' and 89° 13' West (BERDS 2009). The country spans an area of 23,963 km^2 (8,867 square miles), including approximately 1,000 cays (BERDS 2009), and is divided into six Districts (Figure 1). It is home to the largest unbroken barrier reef in the Western Hemisphere, which stretches the country's entire coastline. The terrain is low and flat in the coastal and northern ranges, and low mountains can be found in the central and southern regions, up to 1,124 m.

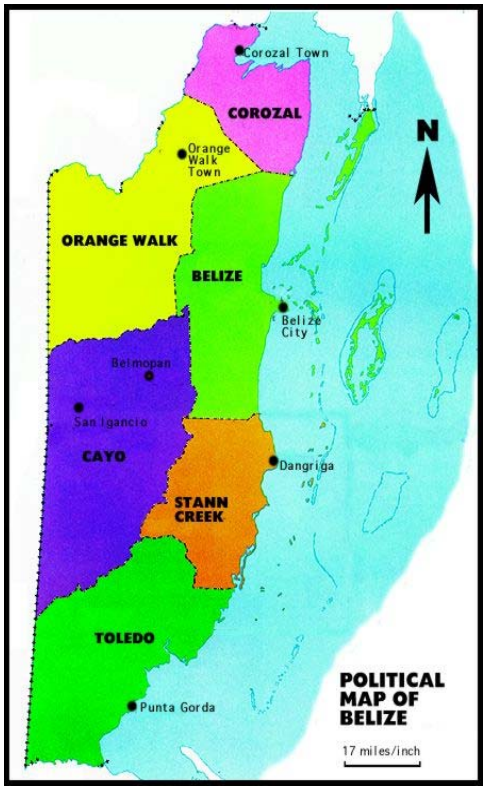


Figure 1: Political Map of Belize
Source: http:www.belize.net

Belize is estimated to have 69.1% forest coverage. Meerman and Sabido (2001) classify several forest ecosystems, including lowland broadleaf forest and shrubland (51.4%), submontane and montane broadleaf forest (10%), include mangrove and littoral forest (4.2%), submontane pine forest (2.1%) and lowland pine forest (dense) (1.4%). Approximately 36% of

the terrestrial area is under some form of protection, while only 14% of the marine territory is protected. Approximately 24% of the total national territory (marine and terrestrial) is protected. Protected area categories are National Parks, Nature Reserves, Wildlife Sanctuaries, Natural Monuments, Archaeological Reserves, and the extractive Marine and Forest Reserves.

Two seasons characterize the climate; the rainy season, which generally occurs during June to November, and the dry season during the remaining months. Rainfall averages at 1200 mm in the north, to more than 4000 mm in the south (BERDS 2008). The mean temperature varies from 81°F/ 27°C along the coast to 69°F/21°C in the hills (Belize National Meteorological Service 2008).

The country's population at mid-year 2007 was 311,500, with an annual estimated growth rate of 3.3% (Statistical Institute of Belize 2007) and the population density is currently at 35 persons per square mile (Statistical Institute of Belize 2008). There is a diversity of cultures including Mestizos (48%), Creoles (25%), Maya (11%), and the Garinagu (6%). The tourism industry dominates the economy, followed by the agricultural sector with exportation of sugar, citrus, bananas and marine products. Gross Domestic Product in 2007 (at market prices) was reported at 2,291.3 million Belize dollars (USD 1 ≈ BZD 2) (Statistical Institute of Belize 2008).

1.1.2 The Maya Homeland

The struggle for formal recognition of a Maya Homeland began as far back as the mid to late 19th Century, when the Colonial British government was engaged in logging in the colony. In an attempt to subdue the Mayas, they established 10 Maya Reservations, with a total area of 77,000 acres (Cho 1997) in the Toledo District. These reservations were never formally demarcated nor constitutionally declared as Maya communal property, and consequently they were not recognized by the Maya people (Cho 1997). Nonetheless, the communal land system flourished, both within and outside of these Reservations, up to present day. In the mid 1990's the Government issued several large logging concessions to both foreign and national companies, in areas adjacent to Maya communities. The outcry by the Maya community and its leaders lead to the suspension and eventual cancellation of some licenses and further strengthened the Maya people's resolve for a Maya Homeland. In recent

years some members of the Maya community have become involved in the commercialization of timber from adjacent forests.

1.1.3 The Case of Conejo and Santa Cruz Villages

In 2007 the communities of Santa Cruz and Conejo, Mayan villages in the Toledo District, successfully brought a suit against the Government of Belize, on the basis that the Government of Belize has failed to "recognize, protect and respect their customary land rights, which they claim are based on traditional land use and occupation by the Maya people, including the people of Santa Cruz and Conejo Villages" (Conteh 2007). They further state that this violates sections 3, 3(a), 3(d) 4, 16 and 17 of the Belize Constitution. The Supreme Court ruled in favor of the two communities, granting the following:

a) A declaration that the claimants' villages of Santa Cruz and Conejo and their members hold, respectively, collective and individual rights in the lands and resources that they have used and occupied according to Maya customary practices and that these rights constitute "property" within the meaning of sections 3(d) and 17 of the Belize Constitution.

b) A declaration that the Maya Villages of Santa Cruz and Conejo hold collective title to the lands their members have traditionally used and occupied within the boundaries established through Maya customary practices; and that this collective title includes the derivative individual rights and interests of Village members which are in accordance with and subject to Santa Cruz and Conejo and Maya customary law.

c) An order that the government determine, demarcate and provide official documentation of Santa Cruz's and Conejo's title and rights in accordance with Maya customary law and practices, without prejudice to the rights of neighboring Villages.

d) An order that the defendants cease and abstain from any acts that might lead the agents of the government itself, or third parties acting with its acquiescence or its tolerance, to effect the existence, value, use or enjoyment of the property located in the geographic area occupied and used by the Maya people of Santa Cruz and Conejo unless such acts are

pursuant to their informed consent and in compliance with the safeguards of the Belize Constitution.

1.1.4 Implications of the case

The underlying implication of this case is that customary land rights in Conejo and Santa Cruz are to be respected. Notwithstanding this, the Maya Leader's Alliance (MLA) has lodged another case in the Supreme Court for recognition of customary land rights in all the other Maya communities in Toledo.

Irrespective of whether the customary land rights will be legally acquired for all the Maya communities in Toledo, the Forest Department will have to respond accordingly and adjust to this new reality. The Toledo District is one of the most densely forested regions of the country, and most of these communities lie within or adjacent to forests and declared protected areas. New governance mechanisms will have to be explored to accommodate the new concept of communally owned, 'tribal' lands. Belize has had very little (if any) experience in this regard. It has been suggested already by the Attorney General's Ministry that some changes in legislation and governance will be required so as to normalize the Maya Lands into the Laws of Belize. Since the Supreme Court judgment, two Mayan communities, Conejo and Santa Teresa (the latter being adjacent to Santa Cruz), with the support of a local NGO (under the auspices of a USAID Central America Watershed Project), the Sarstoon-Temash Institute for Indigenous Management (SATIIM) have embarked on community-based forest management initiatives, in an attempt to control their forests and foster sound use and management of the forest resources. These two communities, along with SATIIM, have highlighted the need for change in the approach to forest governance and forest management in Belize. It is imperative that the forest sector, especially the regulatory bodies, respond to this need for change.

1.2 Objectives of the study

1.2.1 General objective

To propose guidelines for the incorporation of community-based forest management within the forest governance structure of Belize.

1.2.2 Specific Objectives

i. Conduct community capitals assessments in Boom Creek, Conejo and Sundaywood villages in the Toledo District.

ii. Develop standards of sustainable forest management applicable to Belize

iii. Conduct an evaluation of sustainable forest management in Belize utilizing the standards, identifying barriers and opportunities for improvement.

2 CONCEPTUAL FRAMEWORK

2.1 Sustainable forest management (SFM)

The forests of the world serve a variety of uses for mankind and the environment. The range of forest goods includes food, water, wood and fiber. Equally important is the vast array of services provided by forests, for both man and the environment. Climate regulation, flood regulation, water purification, nutrient cycling and soil formation are only a few of the vital ecosystem services. Alcamo and Bennett (2003) outlined the strong links between ecosystem goods and services and human well being, whereby in a well functioning system, the forest goods and services support security, basic material for good life, health and good social relationships. Thus the need to properly manage and utilize the forest is hinged to the well being of mankind. Sustainable forest management is a means to securing these invaluable ecosystem goods and services.

There have been changes in the management of forests throughout history. Pretzsch (2003) and Person (2003) have identified these seven different stages, of which the global trend is increasingly towards the last three:

1. Traditional forest use by local communities: holistic, endogenous relationships, local knowledge;
2. Forest use by colonial powers; specialization: fragmentation of resources;
3. Forests as the basis of national growth: accumulation of capital and its transfer to sectors;
4. Internationalization: orientation towards technology and international markets;
5. Polarization: industrial forestry, social and conservation forestry;
6. Globalization: choices between democratization and devolution or privatization and deregulation;
7. Poverty reduction, governance, institutions and implementation of law.

Among other more recent developments in the global SFM landscape are the Forest Law Enforcement and Governance (FLEG) process which aims to combat the threats posed to forests by illegal logging, trade, poaching as corruption. There is also the United Nations Collaborative Program on Reducing Emissions from Deforestation and Forest Degradation in

Developing Countries (UN-REDD Program). The program is aimed at "tipping the economic balance in favor of sustainable management of forests so that their formidable economic, environmental and social goods and services benefit countries, communities and forest users while also contributing to important reductions in greenhouse gas emissions" (UN-REDD 2009).

The International Tropical Timber Organization's (ITTO) (2009) definition of sustainable forest management is "The process of managing forests to achieve one or more clearly specified objectives of management with regard to the production of a continuous flow of desired forest products and services without undue reduction of its inherent values and future productivity and without undue undesirable effects on the physical and social environment." The Center for International Forestry Research (CIFOR) likewise defines SFM as: "a set of objectives, activities and outcomes consistent with maintaining or improving the forest's ecological integrity and contributing to people's well-being both now and in the future" (CIFOR 2008). Emphasis is placed on maintaining a supply of the forest goods and services for the future, not just satisfying today's needs

De Camino (2008) states that forest management should no longer be defined in a technical sense, nor should it be meaningful only for foresters, if we are to meet the Agenda 21 goals of sustainable development. He goes on to define good forest management as "a process that gives value to forest as an on-going activity. In addition: 1) it entails the intervention in the forest for the extraction of wood and other products and services; 2) the harvest of goods and services is within the productive limits of the system and its carrying capacity, and its level guarantees the permanent functioning of the ecosystems; 3) the operation is profitable according to the manager's criteria; 4) all actors involved in or affected by the process participate in its design, execution and evaluation and in the distribution of the costs and benefits of the policy and specific practices, according to their rights and responsibilities; 5) it is part of a sustainable development, which means that it is not isolated from national development and related sectors, or from the rights of future generations."

It is now widely accepted that forests can be managed for a variety of purposes and for different ends, including wildlife management, timber production, preservation of nature,

provision of goods at the local level, and for traditional uses. All the definitions of SFM are built on the foundation that management should be "ecologically sound, economically viable, and socially acceptable" (Ros-Tonen *et al*. 2005).

2.1.1 International standards of sustainable forest management

Several standards of SFM have been developed throughout the world. While each set of standards is unique, they all include the following general primary elements (Higman *et al*. 2005):

1. A legal and policy framework
2. Sustained and optimal production of forest products
3. Protecting the environment
4. The well being of people
5. Forest plantation considerations

Among the internally accepted global standards, some of the most common are the standards proposed by the Forest Stewardship Council (FSC), the International Tropical Timber Organization (ITTO), the Center for International Forestry Research (CIFOR) and the Pan-European Forest Council. Other national and special focus standards are in existence and in practice in various different countries, such as the Lepaterique SFM standards in Central America.

The standards of SFM set a benchmark for performance. Countries or forest management organizations utilize standards to determine the level of performance in, or achievement of SFM. The standards are accompanied by an evaluation mechanism in which a 'grade' of performance may be determined. Table 1 below summarizes the principles/criteria of some of the internationally and regionally recognized and accepted standards. Each set of standards is accompanied by indicators for evaluation (not included in the table).

Table 1: Principles/Criteria of internationally accepted SFM standards

FSC Principles	ITTO Criteria	CIFOR Principles	PEFC Criteria	Lepaterique Criteria
Compliance with laws and FSC principles Tenure and use rights and responsibilities Indigenous people's rights Community relations and workers' rights Benefits from the forest Environmental impact Management plan Monitoring and assessment Maintenance of high conservation value forests Plantations	Enabling conditions for sustainable forest management Extent and condition of forests Forest ecosystem health Forest production Biological diversity Soil and water protection Economic, social and cultural aspects	Policy, planning and institutional framework are conducive to sustainable forest management Maintenance of Ecosystem Integrity Forest management maintains or enhances fair intergenerational access to resources and economic benefits Concerned stakeholders have acknowledged rights and means to manage forests cooperatively and equitably The health of forest actors, cultures and the forest is acceptable to all stakeholders Yield and quality of forest goods and services are sustainable	Maintenance and appropriate enhancement of forest resources and their contribution to global carbon cycles Maintenance of the health and vitality of forest ecosystems Maintenance and development of the productive functions of forests (timber or non-timber products) Maintenance, conservation and appropriate enhancement of biological diversity in forest ecosystems Maintenance and appropriate enhancement of protective functions in forest management (particularly concerning soil protection and water management) Maintenance of other socio - economic functions and conditions	Existence of a legal, political, institutional, technical and socioeconomic framework which promotes and guarantees the sustainability of forest management and the conservation of the forest resources. Forest cover Forest health and vitality Contribution of forest ecosystems to environmental services Biological diversity in forest ecosystems Productive functions of forest ecosystems Scientific and technological capacities for the development of the forest resource Maintenance and improvement of the multiple socio-economic and cultural benefits of the forest ecosystems required to attend the needs of society in general.

2.1.2 Forest governance

The United Nations Commission on Global Governance defines governance as "…the sum of the many ways individuals and institutions, public and private, manage their common affairs. It is a continuing process through which conflicting or diverse interests may be accommodated and co-operative action may be taken. It includes formal institutions and regimes empowered to enforce compliance, as well as informal arrangements that people and institutions either have agreed to or perceive to be in their interest." Governance therefore, in the context of this investigation, refers to many institutions (rules of the game), both formal and informal, that determine the access to and use of the forest resources. It involves both public and private organizations, as well as civil society participation.

Good governance in forestry creates a more equitable distribution of the available resources among members of society while maintaining the forest's capacity to generate goods and services (Soto 2008). Some principles of good governance include i) an agile and decentralized administration and processing, ii) an inclusive harmonization processes which link all actors, iii) sustainable management of the forest ecosystem and iv) contribution to national development and mitigation of poverty (Soto 2008). It is not possible to conserve and sustainably manage natural resources of common use (such as irrigation water, common pastures and shared forests) without collective action and corresponding rules of the game (Ostrom 2003).

The process of decision-making, and the process by which decisions are implemented or not, are now considered as forest governance in the general sense. The Institute of Governance in Canada defines governance as "the traditions, institutions, and processes that determine how power is exercised, how citizens are given a voice, and how decisions are made on issues of public concern". Forest governance refers to this very process within the forest sector itself. The governance systems, comprising both formal (written laws, regulations, rules, policies) and informal elements (traditional practices, codes of conduct etc.), determine the process of governance: the taking of decisions and rendering of account (Institute of Governance 2009). The same characteristics apply in the governance of forests.

In many instances, especially in forest dependent communities, the informal governance systems are common.

Higman *et al*. (2005) state that 'forest governance is about the policy, legal and institutional conditions that affect how people treat forests'. They add that good forest governance supports and encourages the implementation of SFM. Some of the important constituents of good governance include a) rule of law, b) transparency, c) equity, d) efficiency and e) accountability (Higman *et al*. 2005). In situations where poor forest governance prevails, the implementation of SFM models could encourage change towards good governance by (Higman, *et al*. 2005):

i. Bringing decision-makers and local affected stakeholders together encouraging an environment of understanding, appreciation and respect for each others' perspectives;
ii. Demonstrating what can be achieved through good forest management, even within the context of governance constraints;
iii. Improving the awareness of the rights, roles and potentials of local actors.

There are some very severe and strongly impacting consequences of poor forest governance. Among them are cronyism, corruption, poorly resourced and inflexible forestry institutions, predatory business practices and inequitable access to forest resources. The social costs related to this are loss of livelihoods, loss of cultural assets and knowledge, rising inequality, and loss of the forest asset base for national development ,by stripping of forests for short term gains (Higman *et al*. 2005).

2.1.3 Sustainable forest management and development

The World Commission on Environment and Development defines sustainable development as "Development that meets the needs of the present, without compromising the ability of future generations to meet their own needs (Higman *et al.* 2005). Sustainable development seeks to balance growth and consumption with the capacity of the limited ecosystem goods and services. SFM therefore plays a key role in promoting and achieving

sustainable development, by its concept of maintaining sustainable supplies of the forest goods and services.

SFM can be used as a tool in the alleviation of poverty, especially in rural areas where there is a greater dependency on forests. Forests provide a series of goods and services to local people which support their daily lives. These goods and services range from bush meat, medicinal plants and edible fruits which can be used for daily sustenance, to firewood, lumber and non-timber products for craft making, allowing the generation of income at the home and community level. Policies and/or legislation that restrict local access to the forests are in effect limiting the options of local communities to subsistence and diversified livelihood options.

It should be considered that a forest may not provide a full means of living for a single family, or an entire community, but it may offer an alternative source of income generation. It can be thought of as "a contributor" to people's livelihoods. There are local people who make a living solely off forest related activities such as eco-tourism or by working for larger logging companies, but by and large, in the more forest dependent communities, the livelihood strategies combine activities such as farming, fishing and occasionally small scale timber harvesting (or non-timber forest products in the case of arts and crafts).

2.1.4 Community forest management

"People's needs and rights to a stable livelihood base" can no longer be ignored in the name of conservation and development (Ros-Tonen *et al*. 2005). The Rio Conference in 1992 further solidifies this notion in declaring that "cultural and spiritual value of forests, the necessity of stakeholder participation, the vital role of forests in maintaining ecological processes and balance, the need for biodiversity conservation, the protection of indigenous rights, and the right of forest dwellers to have an economic stake in forest use" are fundamental considerations if sustainable development is to be achieved (UNCED 1992).

It is estimated that globally more than a billion people depend directly or indirectly on the forest, and that the poverty indices tend to be higher in communities that depend on forests as opposed to those in urban or more favorable rural areas (The World Bank 2004). Most

countries in Latin America have adopted the concept of sustainable forest management and many, such as Mexico, Guatemala, Nicaragua, Bolivia, Peru and Brazil, use community forest management as a strategy in attaining equitable, and participative forest management. Sabogal *et al.* (2008) state that community forest management is one of the most promising options for resolving the dilemma of reconciling preservation of the environment with economic development. To this end, community forest management pursues planned use of different forest types by local populations, be they indigenous communities, farming communities or larger buffer municipal communities. According to Sabogal *et al.* (2008) the two major objectives of community forest management are i) to secure the well being of the affected communities, and ii) to contribute to forest conservation so as to ensure continued supply of the ecosystem goods and services. De Camino (2008) mentions several ways in which forests may contribute to local communities' needs:

1. Safeguarding the subsistence of communities: by having access to the forest and its resources, communities can secure regular subsistence supplies for the home, such as meat, medicine, and building material;
2. Increase in income: the harvesting of forest products allows for generation of income from sales. It may be the only income generated in the home, or it may complement other activities such as farming;
3. Improving food security and reducing hunger: forests provide food for the home and also supplement what is obtained from agriculture. Firewood is often used to cook and a variety of traditional medicinal plants from the forest are, for many people, the only source of immediate medication during illness. Forests also provide inputs for farming systems such as mulch for soil protection, contributing to the recycling of nutrients, conserving water and soil, and providing shade for animals and crops;
4. Reduction of vulnerability: forests may act as a reserve or safety net, providing income in times of hardship such as crop failure, unemployment, or other emergencies. The forest also provides protection against natural phenomena such as floods and hurricanes;
5. Increase of well-being: forests provide none material products that contribute to a feeling of well-being, such as spiritual or cultural values.

The shift in paradigm towards community forest management coincided with the global concern of tropical deforestation, and a greater consciousness that rural communities occupy significant portions of natural tropical forests, and that their exploitation by timber extraction companies and illegal logging may actually compromise their livelihoods.

2.1.5 SFM in practice

The broad spectrum definition of sustainable forest management permits and encourages the implementation of a wide variety of approached and activities. For instance, in one tract of forest there may be management actions that cover wildlife, protected areas, silvicultural, traditional use and watershed management, all falling within the scope of the definition of sustainable forest management.

Natural forests (primary, secondary), plantations, high conservation value forests, tropical, temperate, mangroves and degraded forests, among others are all examples of the various categories and types of forests, and while the management techniques vary, the objective remains the same: to maintain the ecosystem goods and services provided by the forests, for the purposes of mankind and the environment.

The El Peten region of Guatemala provides a good example of the successful application of the principles of SFM. The Maya Biosphere Reserve (MBR), under the administration of the National Protected Areas Commission of Guatemala (CONAP), was established as a protected area in 1990. The area residents, who prior to the establishment of the park had open access to the area, were now restricted from entry. This resulted in social conflicts and the rejection of CONAP by the residents (Carrera *et al*. 2002). In 1992, after experiencing an increase in illegal forest activities, CONAP approved a Master Plan for the RBM, in which areas of protection and areas of multiple-use were declared. Consequently several communities (and a few commercial enterprises) were awarded forest concessions in the Multiple Use Zone. Noteworthy is the fact that Guatemala now has 345,560 hectares of FSC certified community managed forests (Rainforest Alliance 2008).

The community forest concessions have had several positive results in the communities. On one hand they have managed to put in place a functional governance mechanism (rules of

the game) and overcome conflicts of interest and created a shared vision. Secondly, the concessions have created new livelihoods, developed human and social capital and conciliated conservation and poverty alleviation (Prins 2005).

One such community in Peten is Carmelita which in 1997 acquired a 25 year concession over an area of 53.797 hectares (de Camino and Breitling 2007). In 2001 the concession area became certified as a sustainable forest management operation by the FSC. Since the granting of the concession the community in general has seen worthwhile improvements in their socio-economic condition such as increased incomes, improvements in health and education, the strengthening of human capital, infrastructural development and increased participation of women in the better organized social organizations (de Camino and Breitling 2007). In the environmental aspects there has been a noted reduction in the impacts of forest harvesting compared to before, a reduction in illicit activities, the stabilization of the agricultural frontier and protection against forest fires, among others (de Camino and Breitling 2007). There are however examples where the community concessions were not as successful, but the Carmelita experience has demonstrated that it has been possible to achieve sustainable forest management and improve livelihoods in the process, through active community involvement.

2.1.6 Legal and policy framework of forest management in Belize

The standing, substantive policy framework for forest management in Belize is the 1954 policy of British Honduras (former colonial name for the country of Belize) (Annex 1). This policy guides the provisions of the Forests Act, Chapter 213 of the Laws of Belize, Revised Edition 2000-2003.

The 1954 Forest Policy states that: "The Government of British Honduras is, in order to establish the Forest Estate, to survey, demarcate, and constitute as Forest Reserves by proclamation, all Crown Land areas, in any of the following categories" (Forest Policy of British Honduras 1954):

a. land unsuitable for permanent agriculture but supporting or capable of supporting forest.

b. land capable of producing a greater sustained financial return, if retained or developed as forest than if used for other purposes.
c. land which is best kept or put under forest for the better protection of watersheds, catchment areas, drainage basins, steep hill slopes and for the prevention of erosion, the control of run-off, the regulation of steam-flow and the stabilization of the climate.
d. areas which are required for the production of fuelwood for use in towns and villages or by local industries, or for the production of rough building and fencing materials for local use.
e. areas which from time to time may be set aside as nature reserves.

As a direct result, some 20 Forest Reserves have been declared in the Forest Act Subsidiary Laws of Belize, Revised Edition, 2003, spanning an area of approximately 939,809 acres (Belize National Protected Areas Policy and System Plan 2005). These forest reserves, as outlined in the policy, are aimed at "preserving and developing the Crown Lands Forest Estate". Forest management within the reserves is implemented through long term forest licenses for sustainable forestry, through partnerships with the private sector. The Forest Department encourages that forest reserves be managed on a long-term basis but this has not been legislated. Exploitation of forest products is allowed under the Forests Act, through the following types of licenses:

1. "a forest license for sustained yield working of timber or other forest produce, except chicle or crown gum. Such license shall be in such form as the Minister shall determine in each case;

2. a forest license not on a sustained yield basis for the working of timber or other forest produce, except chicle or crown gum and whether in a timber salvage area or not;

3. a forest permit for the working of timber or other forest produce in a timber salvage area where the royalty value of the produce does not exceed one thousand dollars;

4. a petty permit for the working of timber or other forest produce where the royalty value of the produce does not exceed fifty dollars;

5. a chicle license."

Licenses for up to one year are issued by the FD, based on the capacity of the forest to supply the timber, and the capacity of the applicant to carry out commercial operations. In the cases of the forest reserves, the licenses are for a 40 year period. Given that the policy still applies and that the legal framework is based on this outdated policy, conflicts among the various stakeholders in the forestry sector are common.

The Forest Department is one of 5 Departments in the Ministry of Natural Resources and the Environment. It is mandated to "Oversee the Sustainable Management of Belize's Natural Resources". Its mission is "To foster Belize's economic and human development through the enforcement of relevant policies and regulations for the sustainable management of the natural resources, strategic alliances and efficient coordination with relevant stakeholders." Responsibilities range from forest and protected areas management to wildlife protection and mangrove management and the enforcement of all related legislation.

The National Protected Areas Policy and System Plan guide the development and management of the national protected areas system, of which Forest Reserves form a part. Outdated policies and legislation coupled with a large mandate and depleting resources, have generated an effect on the capacity of the organization to effectively implement its duties. The impact of this is felt; inter alia, in the decline of the forest resources and the often tenuous relationship with stakeholders.

In the international arena, Belize is party to several multi-lateral environmental agreements such as the United Nations Convention to Combat Desertification (UNCCD), the United Nations Convention Framework on Climate Change (UNFCC), the Ramsar Convention on Wetlands and the United Nations Convention on Biodiversity (UNCBD), among others.

2.2 Community capitals and livelihoods

Inseparable from the concept of sustainable forest management (and sustainable development) is the dimension of human well-being, as reflected in the aforementioned criteria and indicator sets. Both sustainable development and sustainable forest management place mankind at the center of management goals as opposed to many traditional views that considered local populations a major part of "the problem" in need of resolution. This is a very strategic approach to poverty reduction as the resources which surround societies determine their way of life or livelihoods. The sustainable livelihoods concept, first introduced by the Brundtland Commission on Environment and Development, was expanded during the United Nations Conference on Environment and Development, where it was identified as a broad goal for poverty eradication (Krantz 2001).

The sustainable livelihoods approach looks at the complex interactions of the various resources and assets that people use to make a living. These include the tangible assets such as land and forests, but also intangibles such as the individual human capacities, social networks and relationships, and political affairs. These are divided into what is known as the seven community capitals, shown in Figure 2.

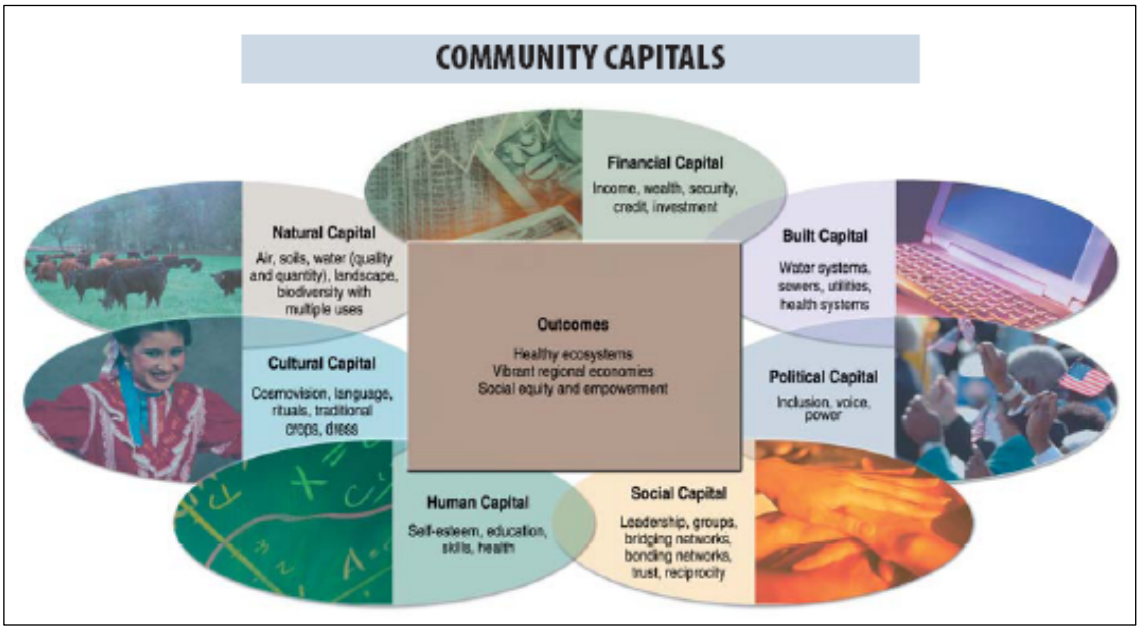


Figure 2. Community Capitals
Source: Flora, *et al.*

The community capitals approach to sustainable livelihoods serves to identify the assets (resources) within a community and the strength of these assets. Flora and Fey (2004) found that the communities that paid attention to all 7 types of capital were most successful in supporting healthy, sustainable communities and economic development. These seven community capitals are:

1. Human capital: skills, education, talents, self-esteem, health etc. of individuals in a community
2. Social capital: leadership, groups, bridging networks, bonding networks, trust, reciprocity within the community
3. Cultural capital: cosmovision, language, rituals, festivals, traditions, food, dress, ethics etc. of the people in the community
4. Political capital: access to power, access to political agents and government officials, power to negotiate with political agents, government, companies etc.
5. Natural capital: air, soil, water, landscape scenery, biodiversity, wildlife, parks, farmland etc. within and surrounding the community
6. Financial capital: income, wealth, security, credit, investment, remittances, grants etc. available in and to the community
7. Physical capital: infrastructure within the community such as telephone, electricity, water and sewer systems, housing, roads etc.

The ideal scenario is a balance among the community capitals. When this occurs healthy ecosystems, vibrant regional economies and social equity and empowerment are possible. In the reality of developing countries there is almost always one or several of the capitals that are deficient, creating imbalances in the community. Apart from identifying what are the community capitals, the approach also highlights the interaction among the capitals by demonstrating how investments in one capital can have positive impacts and consequently build on other capitals. For example, investing in capacity building in forestry skills will have the effect of improving skills, and may also have a double effect of generating more or alternative incomes (financial capital). Owing to the newly acquired financial security, the

family may then be more inclined to participate actively in community activities, thereby positively impacting on social capital. The interactions of the capitals are numerous, highly interactive and very complex.

In identifying community capitals, some may be determined to be weak and others strong. Another opportunity of using this approach is that by pointing out the weaker capitals, the areas of possible intervention by various partners and the community itself may be highlighted. Partner agencies such as government, NGOs, development agencies, churches and the community itself, can then focus their efforts on strengthening and building these "weak" areas and have a greater impact in the community.

The community capitals form a part of a larger framework for investigating sustainable rural livelihoods, known as the IDS (Institute of Development Studies) sustainable rural livelihoods framework (Figure 3). Scoones (1998) states that "the framework shows how, in different contexts, sustainable livelihoods are achieved through access to a range of livelihood resources (community capitals) which are combined in the pursuit of different livelihood strategies (agricultural intensification or extensification, livelihood diversification, and migration)". The analysis of the formal and informal institutions that influence livelihoods sits at the center of this framework.

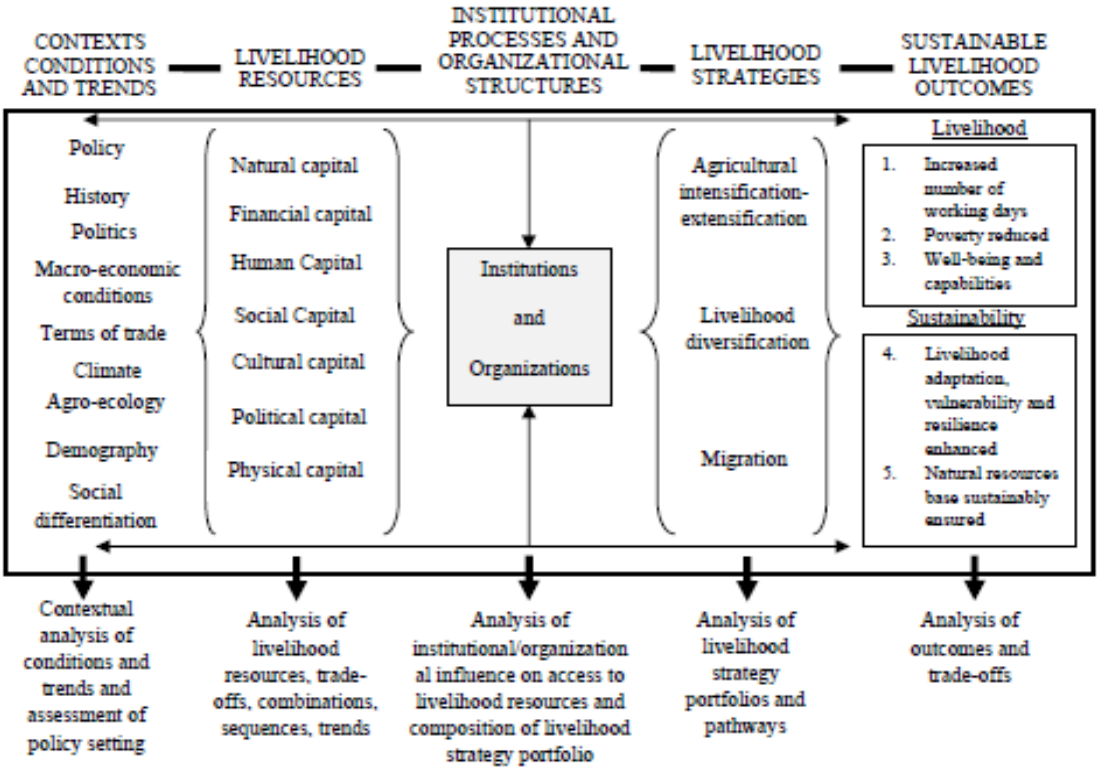


Figure 3: Sustainable rural livelihoods framework
(Source: IDS in Scoones 1998)

2.3 Appreciative Inquiry (AI)

Appreciative Inquiry is an approach that looks at the glass half full instead of half empty. The "appreciative" eye hones in on things that are functioning well, not on the problems. The new quest for new knowledge and understanding is referred to as "inquiry". The conceptual background of appreciative inquiry is founded in social constructionism in which "how and what we think about determines what we care about and do" (Emery *et al.* 2004). In other words, if we focus on the problems we create more problems, but if we focus on solutions, we are more likely to construct promising solutions. The AI process encourages those involved to think and talk about what works, and what can be done to make it work better. There are several key components to the AI process:

- The power of story telling
- Recognizing the wisdom of others
- The importance of curiosity in the quest for doing better
- The value of listening to stories

- The primacy of conversations and dialogue

The 4 stages in the traditional AI process are:

1. Discovery: discovering what is working well; positive core
2. Dream: envisioning what might be; shared images for a preferred future
3. Design: finding innovative ways to create that future
4. Delivery: sustaining the change

Emery, Fey and Flora (2004) included two more stages:

- Define: decide what to focus on (done before the discovery stage)
- Debrief: Celebrate successes and reflect on work done together (last stage).

3 METHODOLOGY

3.1 Study Area

3.1.1 Toledo District

The study area of this investigation is the Toledo District of Belize, specifically the communities of Conejo, Sundaywood and Boom Creek. Toledo spans 19 percent of the total land mass of the country, with four thousand four hundred and thirteen square kilometers (4,413 $km^{2)}$. Southern Belize, which includes the entire Toledo District, receives the highest levels of rainfall annually, in the range of 4000 mm per year on average. The region is characterized by mostly lowland broadleaf forests and of relatively low elevation. The Maya Mountains Massif, the largest block of mountains in the country with the highest peak of 1,124 m, lies in the northern section of the district.

The estimated population of Toledo District at mid-year 2007 was 29,300, of which 82% live in the rural areas (Statistical Institute of Belize 2008). The major ethnic group distribution is as follows: Maya (62.8%), Mestizo (11.9%), Garifuna (10.0%), East Indian (7.9%) and Creole (5.7%) (Statistical Institute of Belize 2008). The 2002 Poverty Assessment Report estimated the population of people living in poverty in Toledo District at seventy nine percent (79%). Fifty six percent (56%) of these are said to be living in indigent poverty. While Toledo has the smallest portion of national population (9.5%) it has the largest percentage of poor people compared to the rest of the country, with 24.9% of the district population considered poor (Figure 4). The social and cultural dynamics of the district, however, allow for a differing perception of poverty. The prevailing perception among the residents is one that reflects an abundance of natural resources and cultural diversity (Hutchinson 2006). The major economic activities of the district are agricultural production of crops such as rice, cacao, bananas, livestock, as well as forestry, and some tourism.

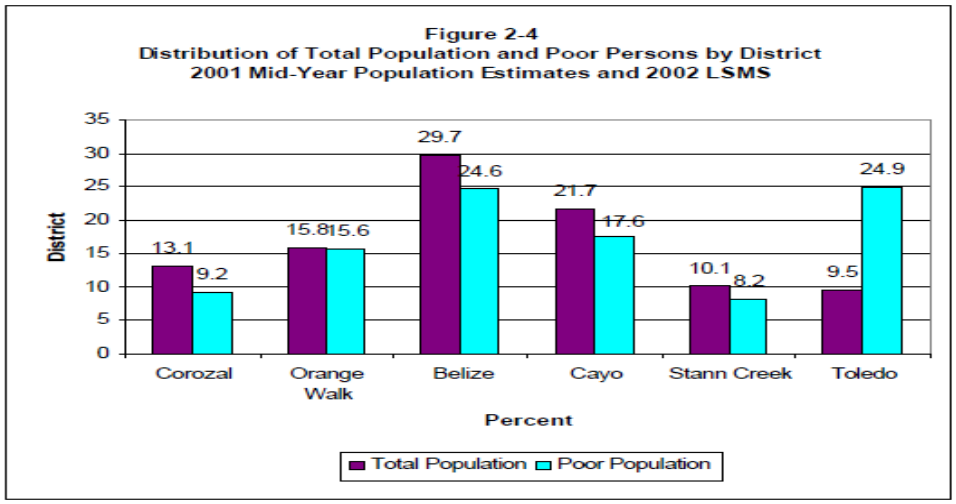


Figure 4: Distribution of Total Population and Poor Persons by District
Source: Belize Poverty Assessment, 2002

The three communities initially selected for study were Conejo Creek, Santa Cruz and Otoxha villages. Conejo and Santa Cruz were initially selected because of the recent declaration of communal lands in these communities by the Supreme Court. Otoxha's recent experience in forestry in which villagers had been working together for some five years or so, plus the forest inventory that was carried out in 2008, made them an ideal case study as well. However, as the research commenced, the political tensions increased with the Maya Leaders Alliance (MLA) and the Government of Belize, when the MLA presented a case to the Supreme Court of Belize requesting that the same judgment of communal property granted to Santa Cruz and Conejo Village, be applied to the other Maya communities in Toledo. This flared tensions between the two parties, and consequently there was apprehension from all players in discussing the issues, for fear that the information being gathered would be used in the court case. Even within the broader Maya community there was disagreement as some leaders stood up against the latter communal land case before the Courts. That situation remains unresolved to date of writing of this thesis.

Upon arriving in Belize and discussing with the various partners involved, it was determined that Otoxha would not be a good case to review since the forest inventory results did not support sustainable forestry in the Otoxha forest. The results were much more favorable in the forests of Boom Creek, and this community also had experience in logging as

a group for a few years. It was also decided to continue the planned work with the Conejo community, which had by that time finalized and submitted a forest management plan to the Forest Department. Sundaywood, a neighboring village to Conejo, was also involved in the forest inventory exercise conducted by the Forest Department in 2008, and was in the process of discussion with a local NGO to undertake the very first steps towards sustainable forest management.

The three communities that were finalized as the study areas were Conejo Village, Sundaywood Village and Boom Creek Village, all of which were at different stages of the forest management process, with varying experiences and forest management. Also of consideration in the final selection process was that Boom Creek was not a Maya community, therefore the social and cultural behaviors were expected to be different.

3.1.1.1 Conejo Village

At the 2000 census, the population of Conejo Village was estimated at 131 people and 22 households, with an average household size of 6 (Statistical Institute of Belize 2008). Personal communication with the leaders of the community suggests that at the time of the research the population was approximately 200 people, distributed into 31 families (Makin 2009). Conejo Creek Village is a buffer community of the Sarstoon-Temash National Park (STNP) (Figure 5). The adjacent forests of the community are secondary growth forests.

Conejo Village is a Ketchi Maya community. The Ketchi culture is still very much practiced in Conejo, with traditional ceremonies and activities such as the fajina (community clean up of common areas) still being upheld. The Alcalde system of leadership, a traditional practice, is still in use in these Maya communities: the Alcaldes are the traditional leaders of the communities, and in many cases command greater respect than the Chairman of the village. Farming is the main income earner, with many of the villagers practicing subsistence farming.

3.1.1.2 Sundaywood Village

The Statistical Institute of Belize estimates the population of Sundaywood at 209 persons, at the 2000 national population census. There was a total of 39 families with an

average distribution of 5.4 persons per household. The chairman of the community indicated that the current population is approximately 287, with about 48 families (Tush 2009). Sundaywood is also a Ketchi Maya community. Like Conejo Creek, most of the residents practice farming, which is the main income generating activity. Sundaywood is also a buffer community of the STNP.

The cultural practices are still very much upheld today as they are in Conejo Village. The community lands span approximately 3,931 hectares, of which 2,185 hectares of broadleaf were assessed by the Forest Department to be viable for medium to long term forest management (Cho 2008). The broadleaf forest is a secondary growth forest.

3.1.1.3 Boom Creek Village

Boom Creek Village is a Mestizo community settled along the banks of the Moho River. Its population during the 2000 census was estimated at 100, distributed among 17 households with an average distribution of 5.9 persons per household (Statistical Institute of Belize 2008). The Chairman of the village indicated that the population is at about 120, with about 16 families (Moralez 2009). A similar assessment that was conducted by the Forest Department in Sundaywood was done for Boom Creek Village forests, and it was determined that the area of 1,730 hectares of broadleaf forest were suitable for sustainable long term management.

Figure 5: Toledo District Map highlighting study areas

3.2 Development of SFM Standards

The objective of the set of standards to be developed through this research is to provide a means of evaluation of the implementation of sustainable forest management initiatives in Belize. A formal set of SFM principles have not been developed nor officially adopted in Belize to date, although several monitoring and evaluation parameters are being utilized by the Forest Department. CFM itself is only recently garnering attention as local people become more actively involved in the affairs of their communities, including logging. The local communities in southern Belize have vocalized their discontent with what they consider to be the inequitable access to the benefits of the forests in which they reside, and have been persistent in their demands for equal opportunity to access and benefit.

Definitions

I. Standard

A standard comprises a set of principles, criteria and indicators that:

- serves as a tool to promote sustainable forest management
- forms the basis for monitoring and reporting, and
- is a reference for the evaluation of actual forest management (Lammerts van Bueren and Blom 1996)

II. Principle

CIFOR (1999) defines a principle as a fundamental truth or law as the basis for reasoning or action. In the context of SFM, principles provide the framework for the sustainable management of forests. Meanwhile Maini (1993 in Lammerts van Bueren and Blom 1996) defines a principle as a fundamental law or rule as a guide to action, a rule of conduct, a fundamental motive or reason for action, especially one consciously recognized and followed.

A more elaborated and specific definition of principle is outlined by Lammerts van Bueren and Blom (1996): "A principle is a fundamental law or rule, serving as a basis for reasoning and action. Principles have the character of an objective or attitude concerning the function of the forest ecosystem or concerning a relevant aspect of the social system that interacts with the ecosystem. Principles are explicit elements of a goal, e.g. sustainable forest management or well managed forests."

III. Criteria

Criteria are defined by the Forest Stewardship Council (FSC) as a means of judging whether or not a principle (of forest management) has been fulfilled. Maini (1993 in Lammerts van Bueren and Blom 1996) suggests that criteria are distinguishing characteristics of a thing by which it can be judged.

Lammerts van Bueren and Blom (1996) summarize a criterion as a state or aspect of the dynamic process of the forest ecosystem, or a state of the interacting social system, which should be in place as a result of adherence to a principle. The way criteria are formulated should give rise to a verdict on the degree of compliance in an actual situation.

IV. Indicators

The definition for an indicator as suggested by Maini (1993) is "any variable that can be measured in relation to a specific criterion (indicators are diagnostic and reveal the health of a particular forest ecosystem)". The FSC refers to indicators as variables which can be measured in relation to specific criteria.

An indicator as defined by Lammerts van Bueren and Blom (1996) is a quantitative or qualitative parameter which can be assessed in relation to a criterion. It describes in an objectively verifiable and unambiguous way, features of the ecosystem or the related social system, or it describes elements of prevailing policy and management conditions and human driven processes indicative of the state of the eco and social system.

The standard was developed through a "filtering" process, in which an original set was drafted by drawing on several existing standards. Eight different sets of standards were utilized in this first filter. These were: 1) the FSC standards (2002), 2) CIFOR Generic standards (1999), 3) the Lepaterique Regional and National standards (IUCN 1997), 4) CIFOR-CMF standards (Ritchie *et al*. 2000), 5) Pedroni and de Camino, and the thesis standards of 6) Moran (2005), 7) Amaral (2001), 8) Carrera (2000) and 9) Torres (2008). The second filter was done with the technical staff of the Forest Department on March 16th, 2009, with the intention of developing a standard appropriate to them. The third filter was done on March 31st, 2009, with other stakeholders including community representatives, NGOs and CBOs. Some adjustments were made to the standard based on the input from these stakeholders, to make it more realistic to the local, "on the ground situation". A final filter was done with the thesis committee providing feedback on the final draft of the standard. After this final filter, the standard was finalized, and for the purposes of the evaluation, it was placed in an interview format. Figure 6 demonstrates the filtering process of the standard development. The results of the development process are elaborated in Section 4.

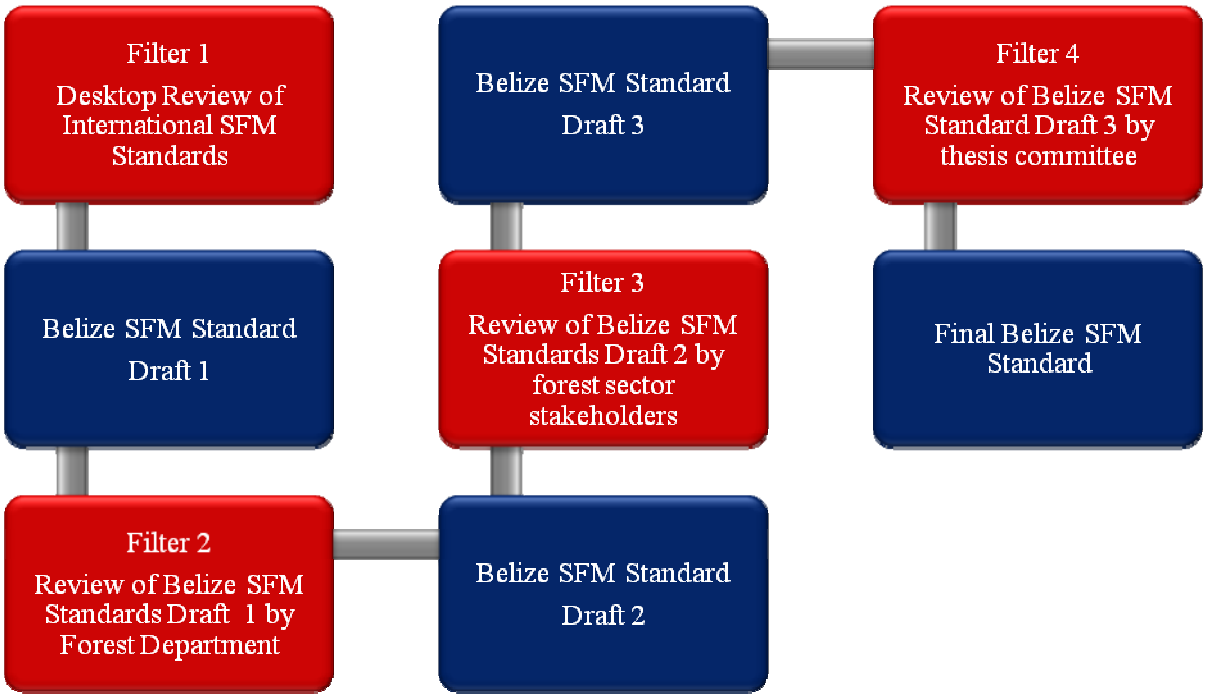


Figure 6: Process of Belize SFM standard development

3.3 SFM Evaluation

The standards mentioned in section 3.2 above were utilized to conduct the performance evaluation of sustainable forest management in Belize. The standards are divided into four dimensions with corresponding principles, criteria and indicators. The survey instrument (Annex 2) was distributed to individuals from five sectors, namely government (14), NGO (15), private (12), community (nine) and "other" (seven). A total of 57 surveys were conducted.

The community surveys were completed by residents of Sundaywood, Conejo, Boom Creek and Rancho Dolores. It was evident from the interviews that the survey instrument was too complex for community level, therefore in all the community interviews, the survey was led by the researcher so as to better explain the questions directly. Government representatives from various line ministries completed the survey, including the Forest Department, the Department of the Environment, the Policy Unit of the Ministry of Natural Resources and the

Environment, Department of Local Government and Rural Development, the Ministry of Economic Development and the Minister of Agriculture.

Some of the NGO's which completed the survey were Program for Belize (PFB) (the only NGO directly involved in sustainable forest management on its privately held lands), Ya'Axche Conservation Trust (YCT), Toledo Institute for Development and Environment (TIDE), Sarstoon-Temash Institute for Indigenous Management (SATIIM), and the Association of Protected Areas Management Organizations (APAMO).

Private sector surveys came from private logging agencies such as The Wood Depot and Yalbac Ranch and Cattle Ltd., as well as private individuals working in the field of forest and/or natural resources management and social development. Organizations such as GEF-Small Grants Program (GEF-SGP), the National Association of Village Councils (NAVCO), Belize Trade and Investment Development (BELTRAIDE) and students fell under the sector of "Other". The scoring system in Table 2 was used.

Table 2: Scoring system for SFM standard

Value	Description
1	Not sufficient information (not enough information to evaluate)
2	Poor performance (not satisfactory, very weak or deficient)
3	Fair performance (acceptable but there is much room for improvement)
4	Good performance (there is still some room for improvement)
5	Very good performance (outstanding)

3.4 Community Capitals Assessment

The Define, Discover, Dream and Debrief stages of the Appreciative Inquiry process were applied during the community capitals workshops in all three communities. The methodology was the same in the three workshops, although due to time constraints in some cases, the analysis did not go into as much details as would have been desired. Prior to commencing the appreciative inquiry process, the concept of the community capitals was

explained and discussed with the participants. Each capital was explained as an account, such as a bank account, in which various assets are saved, a methodology suggested by Emery *et al*. (2006). As an example, natural capital was explained as an "environmental account" in which the community had land, forests, wildlife, water, soils and landscape scenery in safekeeping. Likewise, human capital was explained as the "people account" which housed skills, leadership capabilities, information, knowledge and wisdom that reside within the communities. After this explanation, volunteers were asked to explain to the researcher and the rest of the participants, their understanding of the capitals. This was done to ensure that they understood the concept, and to encourage greater participation. The workshop then proceeded to the various stages of the Appreciative Inquiry.

3.4.1 Define Stage

In this first stage of the AI process, it was decided what to focus on during the workshop, to look at what was the overall goal. The workshop participants were asked to consider what it is that they truly wanted or desired in regards to the forests surrounding their communities.

3.4.2 Discover Stage

During this stage participants were encouraged to consider what was working well in their community. The participants in each workshop were divided into two groups. These two groups were asked to discuss a situation in their community in which a problem was successfully solved, and to identify what worked, what were the assets (capitals) in that "story" and how things are better as a result. This process is called "mapping the capitals". After the problem was identified and discussed, and the assets identified, a volunteer from each group was asked to make a presentation on their groups' results. During this stage, the current situation of the communities' capitals was determined.

Once the group work results were presented, there was a plenary discussion in which all the participants evaluated the relative strength of the capitals they had identified in their groups. The scoring below was used for the evaluation of the strengths of the capitals:

Table 3: Scoring system for evaluation of strength of community capitals

Score	Strength	Description
1	Very weak	The capital is very poor in the community. There is much need for improvement.
2	Weak	The capital is poorly developed, but some improvement is taking place.
3	Strong	The capital is strong but could be developed further.
4	Very strong	The capital is very well developed in the community.

3.4.3 Dream Stage

The workshop participants were then asked to discuss in plenary what they saw as their perfect community. What would be in place? Who would be doing what? How and why? This stage helped to identify a future, desired situation. By stating the vision for their community, they themselves identified their common aspirations, goals and dreams, and not those imposed by others. Thereafter, the results of the discover stage (current situation) could have been compared to the results of the dream stage (desired situation), with a view to identifying the gaps that were present. This final analysis was done by the researcher after the workshop.

3.4.4 Debrief Stage

In this last stage the researcher presented the results of the exercise to the representatives of the communities at a separate workshop. The identified capitals and their relative strengths within the community were discussed. Also, based on the community's desired situation in the dream stage, the gaps between the actual and the desired were also presented. These gaps were identified as potential areas for intervention and investment by the community itself and its partners, bearing in mind a forest management focus.

3.5 Stakeholder Analysis

The "Who Counts Most" methodology of CIFOR was utilized for the stakeholder mapping exercise. The objective is to identify specific actors who are crucial in the social

component of sustainable forest management, based on their degree of importance to the situation. There may be other relevant actors who are not primary actors, but whose influence plays a major role in the process. This includes actors such as political Area Representatives who have the ear of the leaders in Government. The Who Counts Most methodology utilizes seven dimensions in which stakeholders or actors can be placed, based on *people-forest* interactions (Colfer C.J.). These seven dimensions are:

1. Proximity to the forest: How close is the actor physically to the forest?
2. Pre-existing rights: Does the actor hold pre-existing rights to the forest?
3. Dependency: Does the actor's livelihood depend on the forest?
4. Poverty: Does access to the forest resources have an impact on the actor's level of poverty?
5. Local knowledge: Does the actor possess local knowledge of the trees, plants and animals in the forest?
6. Forest/culture integration: Are there aspects of the actor's culture and values that are linked to the forest?
7. Power deficits: Does the actor have power over the use and protection of the forest?

These seven dimensions are scored per each identified stakeholder, with a scoring scheme of high (1), medium (2) and low (3) importance. (Refer to Figure 18). The average score per actor determines the actor's level of importance in sustainable forest management. Other relevant stakeholders were also pointed out, and the stakeholder mapping proceeded by pinpointing and discussing the various actor roles, influences and relationships. The stakeholder mapping also helped determine contradicting points of view as well as common visions. Identifying common ground among the stakeholder is of utmost importance as it establishes a point of departure for cooperation and collaboration. It was intended that the stakeholder mapping was to be done in groups, but because of time constraints it was done as a plenary exercise. The results can be found in Section 4.

3.6 Data Analysis: coupling community capitals with SFM results

It was considered necessary to determine how the results of the community capitals, taken together with the SFM evaluation were interrelated on the ground. Since the sustainable rural livelihoods framework (Figure 3) scrutinizes both the macro and micro-level elements in natural resource management and livelihoods, it was used to conduct the analysis to assist in interpreting and understanding the complexities between the capitals at the community level, the macro policy, institutional and legislative environment, and their effects on a) the livelihoods of the communities and b) the sustainability of the natural resources.

This framework analyzes the context (policy, history, politics etc.), and the existing livelihood assets (capitals), the institutions' and organizations' influence on access to resources and livelihood strategies, and the outcome of these strategies. Several questions were asked in the analysis such as:

- Are the community capitals influencing community performance in SFM or is the causal relationship the other way around?
- Are there elements in the macro framework of SFM that support/hinder the strengthening of community capitals most relevant to SFM?
- Are there elements of the community capitals that do or potentially could support/hinder the achievement of SFM?
- Why is it that communities are not as involved in SFM as the private and NGO sectors?
- Why is it that one of the communities is ahead of the others in its quest for SFM? What were their success factors?
- How did they accomplish this in spite of the inexistence of a favorable enabling environment?
- How does or might the macro-environment influence their performance and success?
- How do or might the strengths of the community capitals influence their performance and success?
- How do or might the macro-environment and the strengths of the community capitals, taken together, affect the sustainability of their SFM initiative?

The analysis gave greater insight into the "cause and effect" of the current state of affairs with community capitals in the three study areas and with sustainable forest management in Belize.

4 RESULTS AND DISCUSSION

4.1 Belize SFM Standard

Taking into account the definitions of sustainable forest management and its standards outlined earlier, this standard is divided into four dimensions of forest management, being i) institutional, ii) socio-economic, iii) environmental and iv) production. It is further separated into principles, criteria and indicators in each respective dimension. Each dimension is comprehensive and encompasses the elements that should be in place for sustainable forest management to be achieved. The absence or failures of any element in any dimension shows a shortfall in SFM implementation. This standard was utilized to conduct the SFM performance evaluation.

GOAL: FORESTS SURROUNDING COMMUNITIES ARE WELL MANAGED WITH THE ACTIVE PARTICIPATION OF LOCAL ACTORS

INSTITUTIONAL DIMENSION

PRINCIPLE 1: THE INSTITUTIONAL FRAMEWORK SUPPORTS SUSTAINABLE FOREST MANAGEMENT

Criterion 1.1 National policies, plans and legal instruments support sustainable forest management

Indicator 1.1.1	The legal and political framework enables equitable access to the forests and its resources
Indicator 1.1.2	Non-forestry policies and legislation do not act as disincentives to SFM

Indicator 1.1.3	SFM is compatible with and incorporated into national development goals
Indicator 1.1.4	There is recognition of the relationship between well-managed forests and poverty alleviation
Indicator 1.1.5	The forest component is included in rural development projects
Indicator 1.1.6	Land use policy and planning provides guidance for land use and development
Indicator 1.1.7	Procedures and processes for legitimizing forest activities are not excessively bureaucratic
Indicator 1.1.8	Related resource management policies are harmonized with SFM policies
Indicator 1.1.9	There is no negative political interference

Criterion 1.2 Information that promotes SFM is generated, disseminated and readily available

Indicator 1.2.1	An adequate, accessible forest information management system exists
Indicator 1.2.2	The institutions carry out research to support SFM
Indicator 1.2.3	An effective environmental (forest) education and training program is in place
Indicator 1.2.4	Traditional knowledge is documented and utilized
Indicator 1.2.5	Effective vertical and horizontal communication among stakeholders exists

Criterion 1.3 Institutional capacities exist for SFM

Indicator 1.3.1	The forest sector is comprised a sufficient number of professionals/technicians/workers trained in the various aspects of forest management
Indicator 1.3.2	Local opportunities exist for training in forest management

Indicator 1.3.3	Local communities possess technical capacities to implement forest management activities
Indicator 1.3.4	Law enforcement actions are effective in reducing illegal forest activities
Indicator 1.3.5	The regulatory bodies in the forest sector are adequately equipped (staff, equipment, vehicles) to provide support to SFM
Indicator 1.3.6	Mechanisms for conflict resolution in forest use and management exist and are utilized when required
Indicator 1.3.7	Stakeholders participate in exchange programs to share and implement new knowledge

Criterion 1.4 Economic conditions promote SFM

Indicator 1.4.1	Economic incentives for SFM exist
Indicator 1.4.2	Sustained and adequate financing mechanisms for SFM exists and is accessible
Indicator 1.4.3	There is national recognition of the economic value of the environmental services produced by forests
Indicator 1.4.4	There is stakeholder willingness to pay for the continued management of ecosystem functions to ensure the continued supply of forest goods and services
Indicator 1.4.5	There is knowledge of and access to markets for forest goods and services
Indicator 1.4.6	Efforts are made to compensate private forest owners for the provision of forest ecosystem services

SOCIO-ECONOMIC DIMENSION

PRINCIPLE 2: THE MANAGEMENT OF FOREST RESOURCES GENERATES LOCAL BENEFITS

Criterion 2.1 People link their own and their children's future with the management of forest resources

Indicator 2.1.1	People's dependence (reliance) on and/or interaction with the forest form(s) part of their livelihood strategies
Indicator 2.1.2	People are knowledgeable and appreciative of the goods and services provided by forests
Indicator 2.1.3	The relationship between the forest, culture, health and well-being is recognized and respected
Indicator 2.1.4	Local actions are taken to ensure the protection and conservation of forest resources
Indicator 2.1.5	Common, harmonized vision/goals for forest management and community development exist

Criterion 2.2 Local actors and communities have acknowledged rights and means to manage forests

Indicator 2.2.1	Local and indigenous rights and customs are acknowledged and respected
Indicator 2.2.2	Land tenure is clearly defined and legislated
Indicator 2.2.3	Local actors participate in a meaningful way in the formulation of forest policies
Indicator 2.2.4	Local women participate actively in forest management activities and decisions
Indicator 2.2.5	Local actors possess the interest and the capacity to engage in sustainable forest management activities
Indicator 2.2.6	Local rules for the use of and access to forest resources exist
Indicator 2.2.7	The role/participation of NGOs and civil society in mentoring local stakeholders in forest management is adequate and effective
Indicator 2.2.8	The forest authority and the government are accommodating to and supportive of communities interested/involved in SFM (positive attitude)

Criterion 2.3 Local actors and communities have a reasonable share in economic benefits from forest management activities

Indicator 2.3.1	Mechanisms for benefit sharing exist and are seen as equitable by all actors
Indicator 2.3.2	Equitable employment and training opportunities exist from carrying out forest management activities
Indicator 2.3.3	Workers rights conform to national and/or ILO standards
Indicator 2.3.4	Educational opportunities exist for local children/people
Indicator 2.3.5	Priority of resource access is given to local actors
Indicator 2.3.6	Level of conflict is acceptable to all stakeholders

ENVIRONMENTAL DIMENSION

PRINCIPLE 3: FOREST MANAGEMENT MAINTAINS ECOSYSTEM INTEGRITY

Criterion 3.1 The forest landscape is maintained

Indicator 3.1.1	Forest cover is maintained or increased
Indicator 3.1.2	There is no evidence of unauthorized change in land use
Indicator 3.1.3	Degraded and impacted forests are rehabilitated

Criterion 3.2 Measures are taken to reduce disasters from fire, diseases and contamination

Indicator 3.2.1	Measures taken to prevent, control and combat forest fires are effective
Indicator 3.2.2	Measures taken to prevent and control pests and diseases are effective

Indicator 3.2.3 Measures taken to prevent contamination of the forest are effective

Indicator 3.2.4 Other resource uses do not conflict with the objectives of sustainable forest management (e.g. petroleum mining, agriculture activities)

Criterion 3.3 Ecosystem functions are maintained

Indicator 3.3.1 High conservation value areas are known and protected

Indicator 3.3.2 Water quality and quantity is maintained

Indicator 3.3.3 Measures are taken to minimize impacts on aquatic ecosystems

Indicator 3.3.4 Measures are taken to minimize erosion and soil degradation

Criterion 3.4 Biological diversity is maintained

Indicator 3.4.1 Wildlife habitats are maintained within acceptable limits

Indicator 3.4.2 Measures are taken to protect rare and endangered species

Indicator 3.4.3 Forest management activities contribute to the biological corridors on the landscape

Indicator 3.4.4 The introduction of exotic species is kept at a minimum

PRODUCTION DIMENSION

PRINCIPLE 4: FOREST PRODUCTIVITY PERMITS THE MANAGEMENT AND SUSTAINABLE MULTIPLE USE OF THE FOREST RESOURCES FOR THE LONG TERM

Criterion 4.1 The quality and quantity of forest resources are adequate for sustainable forest management

Indicator 4.1.1 An inventory of forest resources exists and that the inventory technique is technically sound

Indicator 4.1.2	Timber and non-timber forest products exist in quantities and qualities adequate for sustainable management
Indicator 4.1.3	The rate of harvesting of forest products does not exceed forest productivity

Criterion 4.2 The infrastructure is conducive to undertake forest management activities

Indicator 4.2.1	Road networks are adequate and maintained to allow accessibility for forest management activities
Indicator 4.2.2	Timber harvesting and processing equipment is available to undertake forest management activities
Indicators 4.2.3	Means of transportation, communication, supply of water and energy is available to undertake forest management activities
Indicator 4.2.4	Office space is available for writing, planning, logistics, meetings etc.

Criterion 4.3 Forest management activities are guided by a comprehensive forest management plan

Indicator 4.3.1	A comprehensive (implementable or adaptable) forest management plan exists and is adhered to
Indicator 4.3.2	The management plan is periodically reviewed
Indicator 4.3.3	Planning and management takes place with the appropriate involvement of stakeholders
Indicator 4.3.4	Techniques for reduced impact logging are utilized
Indicator 4.3.5	Periodic compliance monitoring and performance evaluations are conducted
Indicator 4.3.6	Processing methods of forest products are adequate and efficient
Indicator 4.3.7	EIA assessments are incorporated in management plan

Criterion 4.4 Sustainable forest management activities are profitable

Indicator 4.4.1	Economic feasibility of forest management is determined prior to initiating forest management activities
Indicator 4.4.2	Comparison of profitability of forest management activities with alternative investments is determined
Indicator 4.4.3	Reliable accounting systems exist and are utilized
Indicator 4.4.4	Annual financial reports are presented to relevant stakeholders (for transparency)

4.2 SFM Evaluation

The data from the completed surveys was entered into an excel spreadsheet in which average scores were calculated for each criterion and principle. The overall perceived SFM performance utilizing the standards is illustrated in Figure 7 below.

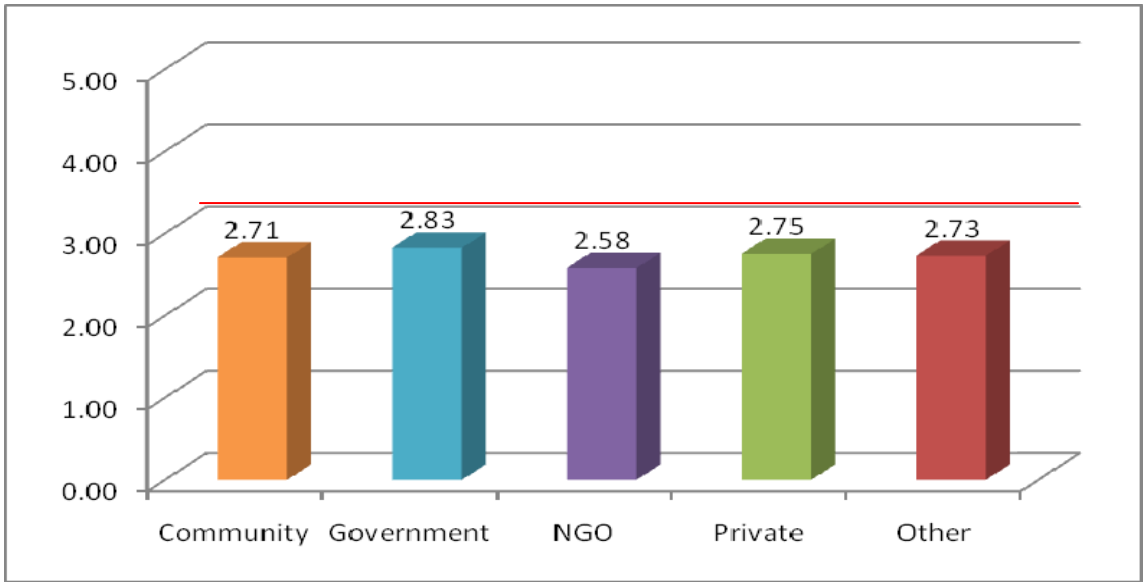


Figure 7: Overall perception of Belize's performance in sustainable forest management

The most obvious and noteworthy point of highlight in this graph is that all sectors scored performance in sustainable forest management at below acceptable level (under three). The average scores were all very similar, with the lowest being that of the NGO sector, at 2.58. The Government, Private and "Other" sectors' scores were higher with 2.83, 2.75 and 2.73 respectively. The Community sector's average score was in par with the other sectors,

with a score of 2.71. The similarity in the scores points to a shared perception of poor performance in SFM in Belize.

It is important to note at this point that the response "Do not know", which acquires a score of 1, was most common in the community sector surveys. This suggests that there is a gap in knowledge of forest management and the activities taking place in the sector, whether locally or nationally. Figure 8 illustrates the frequency of 'Do not know' responses across the sectors.

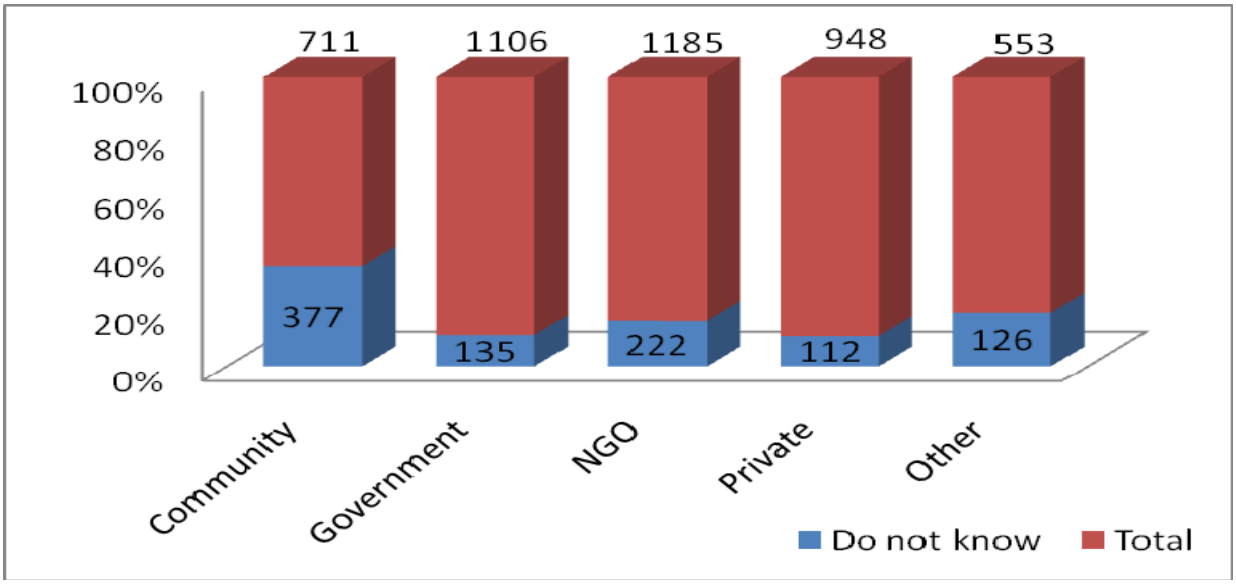


Figure 8: Frequency of "Not sufficient information" in surveys

The community sector frequency of 'not sufficient information' accounts for 53% of the total number of questions in the survey (377/711). The "Other" sector follows with 23% (126/553), and NGO sector with 19% (222/1185). The Government and Private sectors' "Not sufficient information" responses both accounted for 12%, with a total of 135/1106 and 112/948 respectively. Note that the total number of responses was calculated by multiplying the total number of survey questions (79) by the total number of surveys per sector: Community (9), Government (14), NGO (15), Private (12) and Other (7).

Overall, respondents expressed the greatest lack of information or knowledge in Principle 1, the Institutional Dimension (338). The second highest was Principle 4, the Production Dimension, with a frequency of 300 'Do not know' scores. Principle 2 (Socio-economic Dimension) follows with 175 and Principle 3 (Environmental Dimension) with 159. It is clear that efforts at public education and information should be geared a) towards the local

level if CFM is to become a viable option, and b) at educating and informing more about the institutional and productive aspects of SFM in Belize.

Similarly, the fact that all sectors perceived performance in forest management as below acceptable or poor, demonstrates that the sector as a whole has a lot of work to do to bring the performance perception up to par. It would however, be erroneous to state that the true performance in forest management in Belize is poor, as the set of standards utilized in the study is not a formally, nationally adopted monitoring and evaluation tool. However, the fact that a comprehensive monitoring and evaluation tool has not been developed nor adopted by the country speaks to an obvious weakness in the sector. Notwithstanding with this study, a significant step forward has been taken with the development of the protocol for "Monitoring and Evaluation of Long- term Forest Licenses in Belize". These two standards could serve as a starting point for the development of a more detailed, comprehensive set of performance standards for the country.

In comparing performance perception by sector (Figure 9), the communities consistently scored performance in each SFM dimension lower than all other sectors. It must be noted again that all scores were on average below the acceptable level (3), with the highest being 3.04, by the private sector in their perception of performance in the production dimension. This was followed by the score of 3.01 in the Community sector for the Production Dimension and 3.00 in the Environmental Dimension by the Government sector. Noteworthy in the graph is that the Institutional Dimension received the lowest scores across all the sectors, indicating a poor perception among the sectors of this Dimension in SFM.

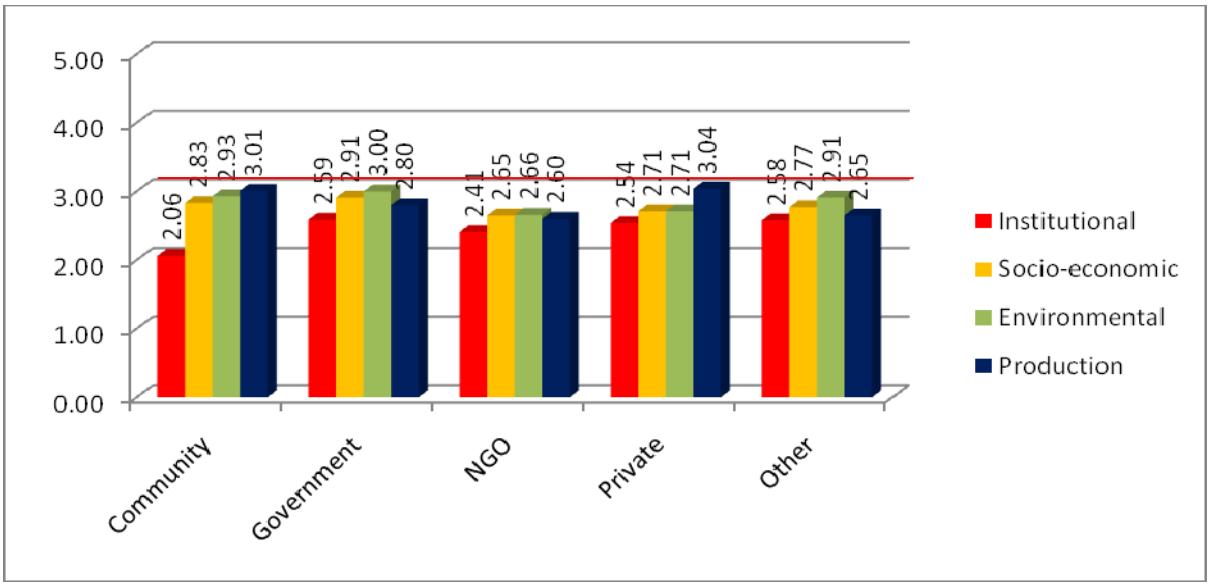


Figure 9: Sector comparison of performance by dimension

4.2.1 Institutional Dimension

The institutional dimension of SFM encompasses the national policies, plans, information management, institutional capacities and economic conditions in relation to its influence on sustainable forest management. Regulatory institutions and organizations within a given sector exist to establish a framework and provide direction. These institutions play the role of facilitating and fostering best practices and technologies in the proper management of natural resources (Prins 2008). De Camino and Breitling (2007) state that institutions and organizations linked to the forestry sector are among the weakest, least financed, least resourced and least powerful, reflecting the common perception that this sector contributes little to the economy. The results of the surveys conducted in this exercise suggest that the same is true in the case of Belize. The survey results in this dimension are depicted in Figure 10.

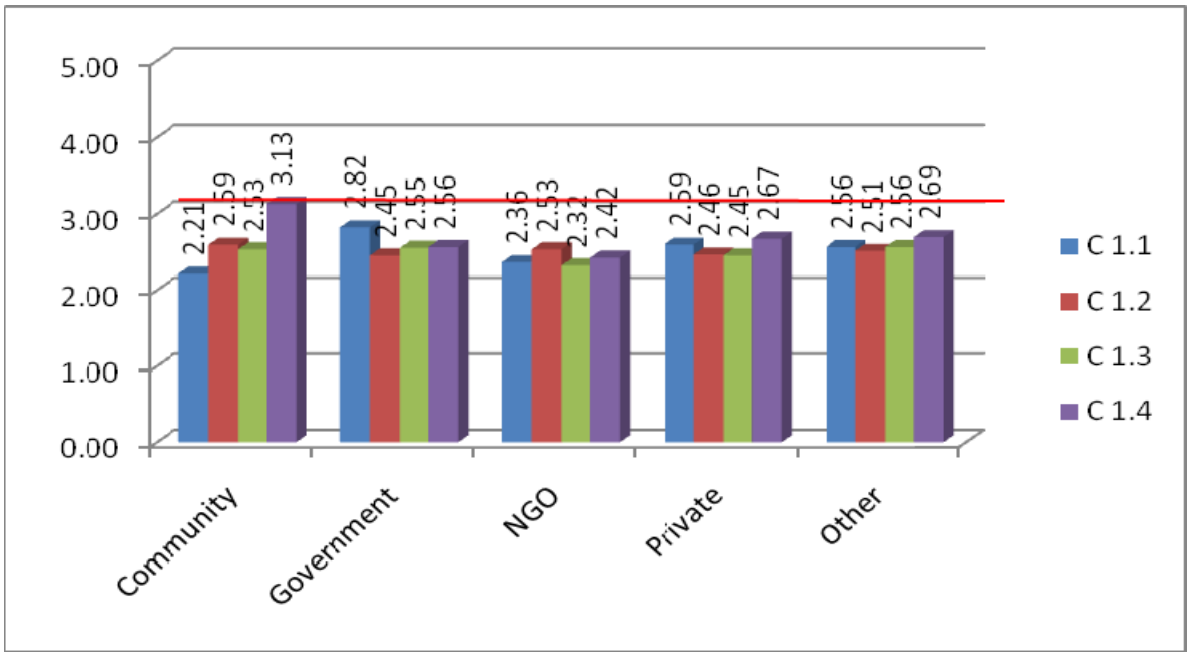


Figure 10: Performance in Institutional Dimension

In relation to Criterion 1.1 (the national policies, plans and legal instruments support sustainable forest management), all sectors rated performance as poor. Government sector respondents scored this criterion the highest (2.82) compared to the other three criteria. This is not a surprise as establishing national policies plans and legal instruments is the business of the government, but even in light of this, the sector respondents were not satisfied that performance is acceptable.

Performance in the information management criterion (C1.2–information that promotes sustainable forest management is generated, disseminated and readily available) was considered poor, with the lowest average scores by the Government (2.45) and the Private sectors (2.46). Those interviewed felt that there is not sufficient knowledge or information being shared in regards to forest management in Belize. Information does exist, but is housed in various organizations, in various forms, and in a fragmented manner. The Forest Department manages the biodiversity clearing house mechanism for Belize, a hub for digital biodiversity information for Belize. However, the reality is that while desperately needed, for undetermined reasons, the mechanism is not functioning. A quick check on the website revealed that data was last uploaded in January 2008 (Belize Biodiversity Clearing House Mechanism home page 2009).

The existence of institutional capacities for sustainable forest management (Criterion 1.3) was considered to be poor by all sectors. The consistency in the scores of this criterion indicates that the respondents share the perception that institutional capacities are deficient in the sector. It is felt that the sector needs more professionals trained in forestry, and that the regulatory body, the Forest Department, should be more adequately equipped to support the various facets of forest management. However, for improvements to be made in institutional capacities, the indicators of Criterion 1.1 should be strengthened to place forest management at the forefront of the national development agenda.

Criterion 1.4 states that "economic conditions promote sustainable forest management". All sectors, with the exception of the community sector, once again are of the same opinion, that the economic conditions do NOT support sustainable forest management. Interestingly, the Community sector responded to this Criterion as acceptable with a score of 3.13. This may be because respondents to the survey have seen the economic benefits from the forests and thus feel that on a personal basis, the economic conditions (e.g. markets) exist for them to engage in forestry. Within this criterion, scores were consistently low for the indicator that 'sustained and adequate financing mechanisms for SMF exist and are accessible". The NGO sector score for the indicators referring to recognition of economic value of forests, willingness to pay for forest conservation and compensation for private forest owners, averaged poor. The economic valuation of Belize's natural resources was listed as a recommended activity under the National Protected Areas Policy and System Plan (2005), however work on this has not commenced as yet in this area.

4.2.2 Socio-economic Dimension

According to Higman *et al*. (2005), the well-being of people is a required element in achieving sustainable forest management. They further outline that people's well-being encompasses consultation and participatory processes, social impact assessments, recognition of rights and cultures, relations with employees and forestry's contribution to development. In Belize as in most other countries, the forests are located in the rural areas of the country. As such the forests could provide an opportunity for safeguarding the subsistence of communities (de Camino, 2008). The extent to which it does depends on a) the rural communities' use of

the forest, and b) the rural communities' legal access to the forest. The former involves socio-cultural interactions while the latter is determined by institutional factors. The survey results of the socio-economic principle are depicted in Figure 11. It is immediately apparent that the trend of performance is similar in all sectors as it relates to the three criteria in this dimension.

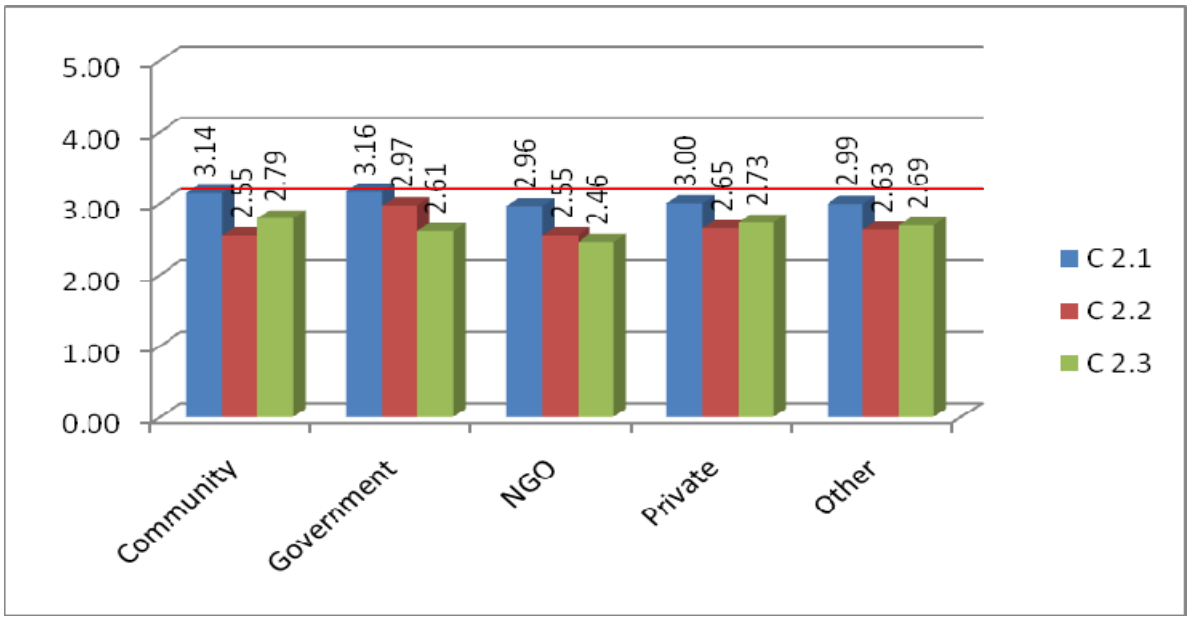


Figure 11: Performance in Socio-economic Dimension

Criterion 2.1, (Local people link their own and their children's future with the management of forests) was considered to be acceptable by the Community (3.14), Government (3.16) and Private (3.00) sectors; the "Other" sector's score was a borderline acceptable at 2.99, as was the NGO sector at 2.96. It is understood that communities would rate this criterion as acceptable, as they do link their own and their children's future with the forest, as will be seen in the community capitals analysis. Interesting to note is that the Government sector scored criterion 2.1 as acceptable. This could be an indication that the sector recognizes in principle the link between forests and local people's well-being. It may also suggest that the sector believes that local people value the forests and have taken measures for its protection that are considered acceptable.

The performance in the second criterion of Principle 2 was considered poor by all sectors. This criterion states that "local actors and communities have acknowledged rights and means to manage forests". The indicators include the recognition of local and indigenous

rights and customs, land tenure, participation of women in forestry, the role of NGOs in supporting communities, the attitude of government towards communities' involvement in forestry, and the participation of local people in the formulation of forest policies. Apparently all sectors feel that there are considerable deficiencies in this area. The individual indicator scores varied, for example, indicator 2.2.2 (land tenure is clearly defined and legislated) was scored as acceptable by the Government sector interviewees (3.15) but was considered poor by all other sectors. Similarly, indicator 2.2.8 (the forest authority and the government are accommodating to and supportive of communities interested/involved in SFM – positive attitude) received poor average scores from the Community sector (2.17) and the NGO sector (2.92), but acceptable scores from the Government sector (3.50), the Private sector (3.20) and the "Other" sector (3.50). Clearly opinions vary by sector on the performance of these and other indicators in the standard, and it is based on these perceptions that decisions are made and actions taken by the different sector stakeholders. For this reason dialogue on these issues is very important to better understand the perceptions of different stakeholders.

The last criterion of Principle 2 states that "local actors and communities have a reasonable share in economic benefits from forest management activities". Its indicators encompass the presence of benefit sharing mechanisms, equitable employment and training opportunities, workers rights, educational opportunities, resource access, and level of conflict. The performance in all indicators was thought to be poor by all sectors, with the exception of Indicator 2.3.6 (Level of conflict is acceptable to all stakeholders), which was considered acceptable by the "Other" sector with an average score of 3.00. The interpretation is that local actors and communities feel they do not have a reasonable share in economic benefits from forest management activities. Certainly special attention needs to be given to this factor if improvements are to be made in community-based sustainable forest management.

4.2.3 Environmental Dimension

Forests provide more than just timber and non-timber forest products. They also offer environmental services such as protection of soil, production of water, biological diversity, flood control and climate control among others. These products and services are important to the well-being of man and therefore warrant protection. Thus it is imperative in sustainable forest management that forest activities sustain environmental benefits from forests and

minimize the adverse impacts on the forests. Higman *et al*. (2005) suggests that environmental considerations in sustainable forest management should include conserving biodiversity, maintaining forests' ecological functions, protecting soil and water resources and minimizing pollution. The standards used in this evaluation take these factors into consideration. Figure 12 depicts the results of the survey in the environmental dimension.

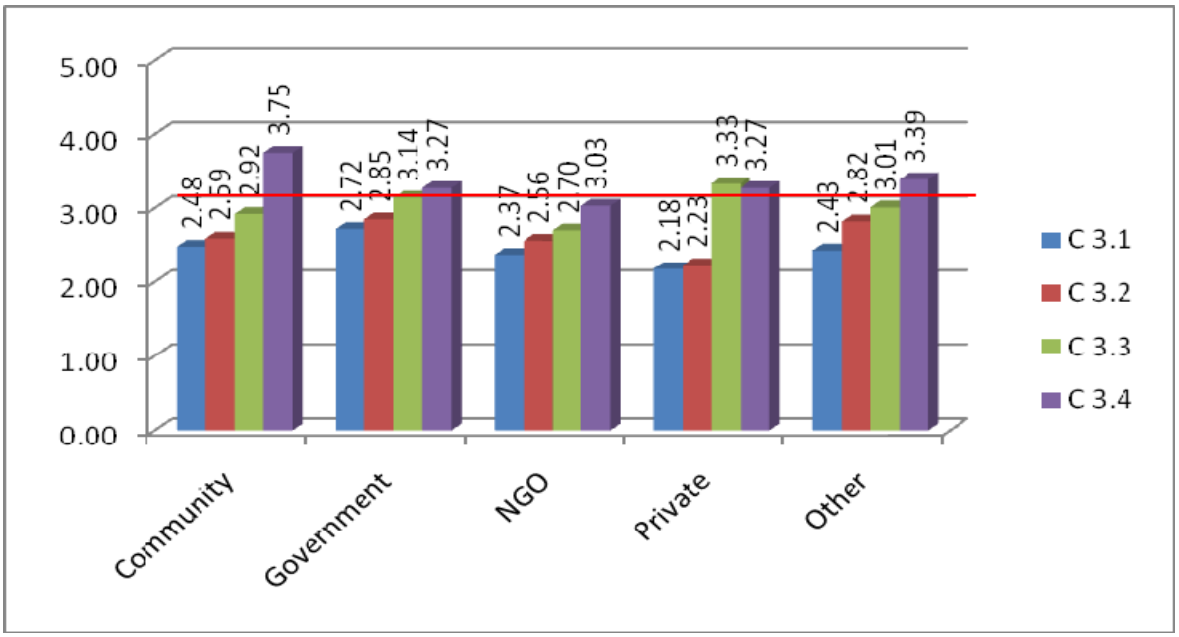


Figure 12: Performance in Environmental Dimension

There seems to be consensus among the sectors that Criterion 3.1 – the forest landscape is maintained – is not being met. The average score was below acceptable for all sectors. Changes in land use occur in the absence of any land use planning, undoubtedly affecting forest cover.

The Government sector interviewees scored Criterion 3.2 the highest at 2.85, just shy of the acceptable level, followed by the "Other" sector with a similar average score of 2.83. All other sectors also rated performance in this criterion as poor, the lowest being that of the Private sector with a rating of 2.23. Based on the indicators and the average scores, it would appear that not enough is being done to reduce disasters from fires, diseases and contamination of the forests from forest equipment inputs (fuel, oils, chemicals etc.). It is noted for instance, that the Forest Department only engages in active fire management in the Mountain Pine Ridge Forest Reserve. There is a collaborative effort in southern Belize in

which the NGOs, with the technical support of the Forest Department, actively engage in fire training and fire awareness. A national fire strategy for Belize is currently being prepared under the auspices of The Nature Conservancy and should be completed shortly, thereby attempting to address some of the national forest fire challenges. However, when it comes to disease and contamination control, the results of the survey demonstrate that there is a lot lacking in this area. Many interviewees related the destruction of the Mountain Pine Ridge Forest Reserve by the Southern Bark Beetle as evidence of poor management, which eventually led to a proliferation of the pest. Many others stated that they did not know of measures being taken to control diseases or contamination of the forest.

The Government, Private and "Other" sector reps believe that ecosystem functions are being maintained (Criterion 3.3). The average scores were 3.14 and 3.33 and 3.01 respectively. The NGO sector rated performance in this criterion as poor with an average score of 2.70 and the Community sector's average score was 2.92. All the sectors felt that Belize's performance in maintaining biological diversity is acceptable, especially the Community sector, which averaged a score of 3.75. The Government and Private sectors' average score were the same at 3.27, while the "Other" sector's score was 3.30. The lowest average score for this criterion was from the NGO sector, with 3.03.

4.2.4 Production Dimension

Sustainable forest management entails a series of activities that are very broad in scope, entailing more than just achieving sustained production of timber and non-timber products. It also involves planning of forest operations, defining sustainable yields, monitoring management effectiveness, safeguarding against illegal activities, and optimizing the wide-ranging benefits offered by the forest (Higman *et al*. 2005). Principle 4 attempts to cover these factors. The production dimension survey results can be seen in Figure 13.

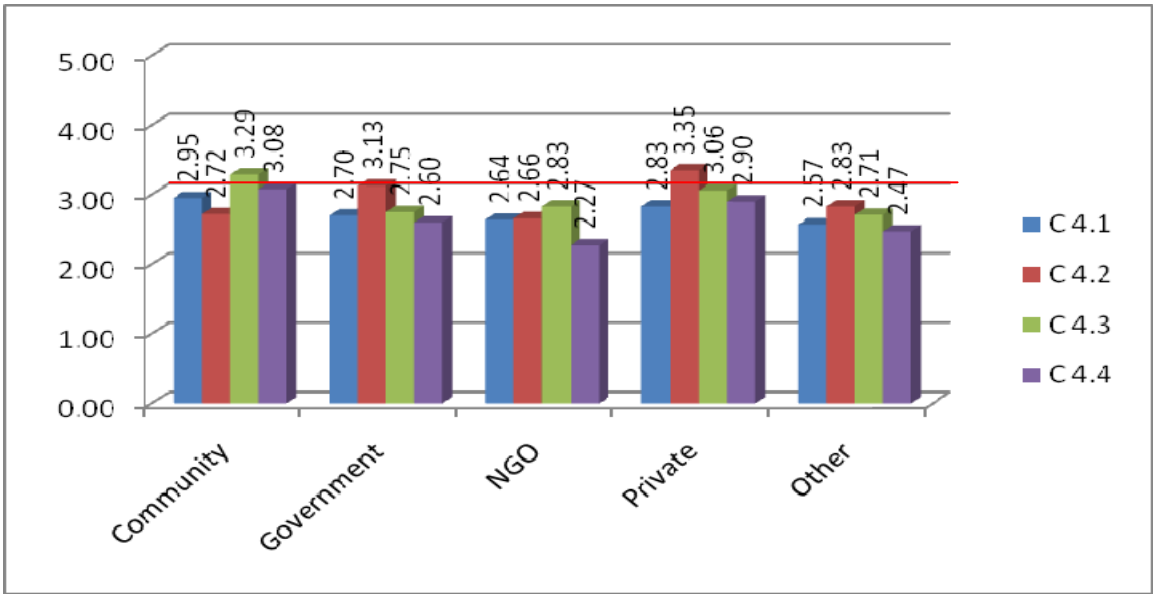


Figure 13: Performance in Production Dimension

In regards to Criterion 4.1, "the quality and quantity of forest resources are adequate for sustainable forest management", the average scores were poor among all the sectors. A national inventory of the forest stock is non-existent. Inventories are required only in areas where interests in long term management are expressed. Several private property owners engaged in sustainable long term forest management have done forest inventories. Some communities as well, such as Boom Creek, Sundaywood, Conejo, Santa Teresa, Otoxha and San Jose, all in the Toledo District, have carried out some form of inventory of their adjacent forests, with technical and financial support from the Forest Department and the British High Commission in Belize. The inventory in the Colombia River Forest Reserve in Toledo became obsolete after Hurricane Iris destroyed the larger part of the reserve in 2001. Freshwater Creek Forest Reserve in the Orange Walk District also has an inventory of forest stock, but poor management and monitoring has led to deterioration of this reserve. Indeed some inventories on some national forest lands have shown that the forest stock has been depleted in some areas, such as portions of the Belize and Orange Walk Districts. Several Harvesting Suitability Assessments (HSA), conducted by the Forest Department as a step in the processing of forest license applications, have revealed that certain areas cannot sustain logging activities, not even in the immediate short term. (In spite of this, licenses continue to be issued in these areas). As effective monitoring remains a challenge, it is uncertain if the rate of harvesting of forest products exceeds (or does not) forest productivity.

The highest average score in this dimension is for Criterion 4.2 ("The infrastructure is conducive to undertake forest management activities"), with an average score of 3.35 by the Private Sector. The criterion refers to indicators dealing with the adequacy of road networks, the availability of timber harvesting and processing equipment, means of transportation, communication, water supply, energy, and availability of office space for planning. It is not surprising then that the Private Sector would consider performance in this criterion as acceptable, as these are factors that would affect the efficiency of their operations; therefore investments are made to ensure these requirements are fulfilled. Furthermore, private sector organizations and individuals usually have the financial capital available to invest in the necessary infrastructure. The Government relies on the private sector to ensure that the infrastructure necessary to manage their respective license areas are put in place (this sector's average score was also acceptable at 3.13). Only in the Mountain Pine Ridge Forest Reserve does the Forest Department wholly undertake infrastructure maintenance.

Performance in Criterion 4.3, "Forest management activities are guided by a comprehensive forest management plan", was considered acceptable by the Community and Private Sector respondents. This could be a reflection of the fact that some of the interviewees from the communities were involved in the management planning process of their community forests, while in the Private sector management planning and implementation are ongoing activities. Meerman and Wilson (2008) list eight long term licenses currently in existence as of August 2008 (Table 4). Management planning is a requirement of these licenses. The indicators of the standard state that management plans must be reviewed periodically and planning and management must take place with the involvement of appropriate stakeholders (Indicators 4.3.2 and 4.3.3 respectively). Furthermore, Reduced Impact Logging techniques are encouraged and environmental impact assessments should be incorporated into management planning (Indicators 4.3.4 and 4.3.7 respectively). It is expected that most if not all of the long term license holders adhere to these indicators, but it is not certain if this is being done. The strategies for "Monitoring and Evaluation of long term licenses in Belize" developed by Meerman and Wilson should be helpful in this regard. It sets out to evaluate license holders' performance and to monitor compliance with the terms and conditions of all the licenses.

Table 4: Long Term Licenses in Belize as of August 2008
Source: Meerman and Wilson, 2008

Licensee	*Lic. No*	*Lic. type*	*Main Forest Type*	*Area (ha)*	
				Production	*Total*
Corozal Timber Lands					
Balam Jungle	LTFL1/03	Private	Hardwood	17,881	39,897
Freshwater Creek Forest Reserve					
NA	In prep.	Forest Reserve	Hardwood	No info	13,513
North-western forests					
Sunnyside Farm	Upcoming	Private	Hardwood	5,937	5,937
Prog. For Belize	LTPFP1/07	Private	Hardwood/Pine	41,761	107,000
Gallon Jug	LTPFP1/08	Private	Hardwood	40,096	54,154
Yalbac	LTPFP2/07	Private	Hardwood	53,656	65,714
Mountain Pine Ridge – in part					
Pine Lumber Co.	LTFL1/02	Forest Reserve	Pine	6,240	9,380
Chiquibul Forest Reserve – in part					
Bulridge Co.	LTLF 3/06	Forest Reserve	Hardwood/Pine	No info	59,322
Sibun Forest Reserve					
NA		Forest Reserve	Hardwood/Pine	No info	32,848
Manatee Forest Reserve					
NA		Forest Reserve	Broadleaf/Pine	No info	36,575
Southern Coastal Plain (Mango Creek F.R., national lands, Deep River F.R. – in part)					
The Wood Depot	LTFL1/03	Forest Reserve	Pine/Hardwood	24,600	30,810
Southern Coastal Plain (Deep River F.R. – in part)					
Thomas Gomez	LTFL1/05	Forest Reserve	Hardwoood/Pine	9,445	13,290
Southern Coastal Plain (Swasey-Bladen F.R., national lands)					
Yong Lumber Co.		Forest Reserve		5,440	7,194
Columbia River Forest Reserve					
NA		Forest Reserve	Hardwood	20,178	53,100
Sittee Forest Reserve					
NA		Forest Reserve	Hardwood		

The table lists the long term licenses in existence at August 2008. The licenses cover both national forest reserves as well as private properties. Corozal Timberlands and North-western Forests (the latter listed as such for their location) are private properties. All the others are forest reserves/national forests. Noteworthy is that all 8 licenses have been issued to private sector companies or individuals, since 2002 when the first license was signed. In January 2009 a 40-year license was granted to a private company for the Manatee Forest Reserve. Six short term licenses were issued in the Freshwater Creek Forest Reserve for 2009 to 2011, contrary to the practicing policy of the FD. A local NGO was undertaking the development of a participatory management plan for the Columbia Forest Reserve (Toledo District) but encountered political challenges; the planning process is only very recently recommenced.

The final criterion (4.4) in the production dimension states that "Sustainable forest management activities are profitable". This criterion is established on the basis that for forestry to be sustainable, those investing should feel secure in the knowledge or expectation that the investment will yield profitable returns. Otherwise, the forestry activity would be for short term, quick gain and unsustainable. All sectors, with the interesting exception of the Community sector, felt that performance here was below acceptable. Again, it is likely that the

respondents from the Community sector who rated this criterion as acceptable, have noted the economic benefits possible from forest management.

The results of the fifty seven surveys and discussions with the various stakeholder sectors revealed a general perception that Belize's performance in sustainable forest management is below acceptable, when utilizing the SFM standards developed for this exercise. All sectors, including the Government respondents, delivered average scores below three (acceptable). The poorest performing dimension was the Institutional Dimension (2.44), followed by the Socio-economic Dimension (2.77), and finally the Production and Environmental Dimensions, with average scores of 2.82, 2.84 respectively.

4.3 Community Capitals

4.3.1 Conejo Village

The community capitals workshop for Conejo Village was held on Sunday, July 5th, at the SATIIM Resource Center in Conejo Village. In attendance were about 20 men from the community, representing the Village Council and the Rax Mu Quiche (The Green Shade of the Forest) Logging group. (Unfortunately attendance was not documented for this meeting.) A meeting was held two weeks prior to this workshop, where the community capitals concept was explained to the village leaders and the members of the logging group. The session started with an explanation of the Define and Discover stages of the AI process.

4.3.1.1 The AI Process in Conejo village

4.3.1.1.1 Define Stage

After a brief discussion on the community's true interest in the forest and challenges to its management and use, it was agreed by all the participants (in all three communities) that the overarching goal of the change process was "well managed forests providing benefits to the community". The community members are aware of the benefits from the forests, but too often they have been excluded from obtaining those benefits. They see a forest managed by the community with benefits going directly to the community, as a reasonable ambition.

4.3.1.1.2 Discover Stage

This first group spoke of a problem where some villagers do not participate in the fajina, a communal activity in which all members of the community set aside a portion of a day to jointly clean the common areas in their community. In these cases the Alcaldes, the traditional leaders in the community, would visit the homes of the missing persons, to inquire the reason for their absence. If the rationale is not considered appropriate (e.g. illness or being away from the village), the Alcaldes would charge a fee. This is usually sufficient to deter further absenteeism during subsequent fajinas. This practice is still exercised today and has proven to be effective.

The group also discussed the Supreme Court case in which they won communal land rights recognition. The community wanted to ensure security of land for everyone to continue to practice their traditional way of life. With the help of the Maya Leaders Alliance, they stood in support of each other and the cause, and used their long-standing traditions and culture to support their case. The case was taken to the Belize Supreme Court, for violation of their human rights contrary to the Belize Constitution. The village, along with Santa Cruz village, won the case and now had a judgment declaring legal recognition of the communal lands based on their culture. Group 1 then went on to identify the community capitals present in their story (Table 5)

The second group discussed a problem with illegal logging in the community, which was being carried out by their own villagers. The matter was reported to the Forest Department, who confiscated the logs. The community requested that the logs be handed over to them from the Forest Department and this was done. The community sold the logs and the proceeds were used to invest in the local primary school. The final step was identifying the capitals present in their story (Table 5).

Table 5: Conejo Discover stage community capitals

Capital	Participants' Comments
Financial capital	Time, money to pay for fajina penalty, money to travel to Belize city and attend the Supreme Court sessions; the sale of the logs allowed them to earn some money for the school
Political capital	Community was able to negotiate with MLA and others who supported them, and to convince the Supreme court of the validity of their case; community was able to negotiate donation of the logs to the village and invested the proceeds well
Natural Capital	Community lands and forest; the logs from the forest
Social Capital	Community comes together for fajina and also came together and stood as one before the Supreme Court; Most of the community stood together against the illegal loggers who were from their own community; were able to meet and decide on a outcome beneficial for all
Human Capital	Understanding of their culture to support the case in Supreme court, health and strength to work during the fajina; illegal loggers had the skill to fall trees, the community leaders negotiated sale of the logs at price acceptable to them
Cultural capital	Strong Maya traditions – fajina, and the way of life with the communal land practice; communal land ownership, the Maya alcaldes have authority, the community listens to them

4.3.1.1.3 Dream Stage

The two groups were re-joined for the dream stage exercise, in which they were asked to characterize their dreams for the community of Conejo. This generalized, idealized 'dream list' is shown in Table 6 below.

Table 6:Conejo Dream stage community capitals

Dream	Capital required to achieve the dream
Water system	Financial, Political, natural, social
Computers in the school and scholarships for students	Physical, financial,politicall
Electricity	Political, physical, financial, social
Community telephone	Political, physical, financial, social
Better road	Political, physical, financial, social
More technical and financial support	Political, financial, social
More education for the children	Political, social, financial, human,
Better health care (doctor in the community)	Physical, political, financial, social, human
Hurricane shelter	Human, social, financial
Community to work together to generate income	Financial, political, social, human, physical
Long term community license	Financial, political, social, human, natural
More access to government and politicians	Political, social

4.3.1.1.4 Debrief Stage

Having identified the capitals required for their 'dream' community, the workshop participants proceeded to evaluate the strength of the capitals present in the community today, using the scale of one to four in Table 3. Figure 14 below gives a graphical depiction of the results of this evaluation. Note that the wider the coverage of the web (shaded area), the stronger the capitals (and vice versa). This graph thus paints a picture of strengths and deficiencies in the capitals in Conejo.

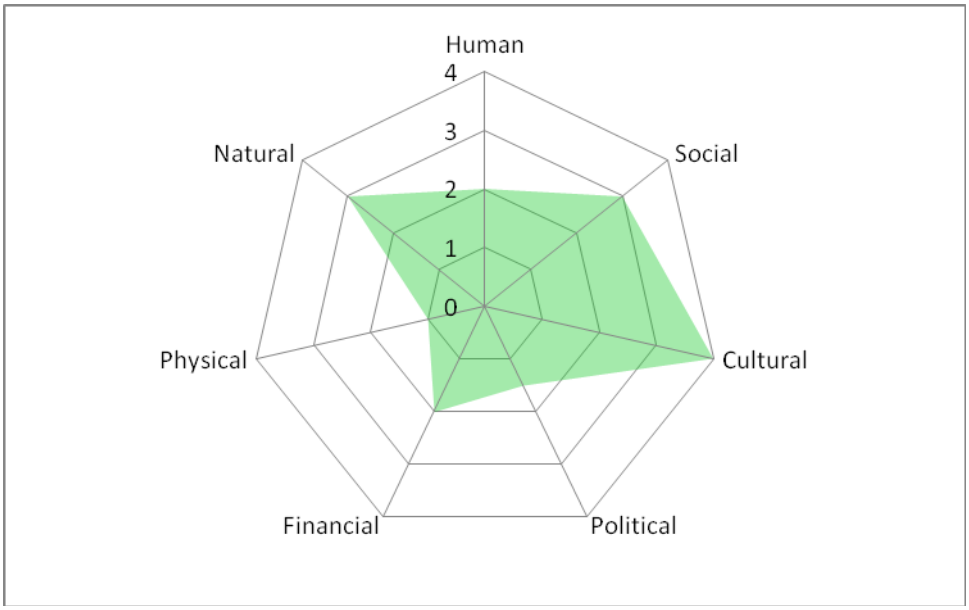


Figure 14: Strength of Conejo capitals
(as assessed by workshop participants)

4.3.1.2 The forest and livelihoods in Conejo village

This discussion was held at the SATIIM Resource Center in Conejo Village, on Saturday, August 29, 2009. Fifteen of the twenty two members of the logging group were in attendance, some of whom also sit on the Village Council. No women were present, but similar interviews with women of the village were held at a later date by the Toledo Maya Women's Council. (This section discusses both sets of interviews). After the objective of the meeting was explained, it was stated right away by the villagers that they have a direct relationship with the forest, as it provides them with most of their basic needs. They seldom leave their village for work, as the cost of living outside the village is thought to be too high. Most of what they eat is planted, or gathered from the forest. Surplus from their agricultural plots is also sold in Punta Gorda Town, the nearest and only township in the Toledo District. Table 7 below lists the use of the forest products as mentioned by the men in Sundaywood.

Table 7: Forest resource use in Conejo Village

Forest Resource	Use
Animals	Meat, Skin, Pets
Trees	Lumber, Leaves tie-tie (string) and sticks for bush houses
Food	Animal (Meat) and Plants (Cabbage from Palms- heart of palm)
NTFP	Material for handicrafts
Herbs, shrubs and trees	Medicine
Creeks	Water for drinking cooking bathing washing and fishing
The air	Oxygen for breathing

The villagers said their use of the forest was a daily occurrence, either for subsistence supplies or for income generation. All except one of the men present at the meeting expressed that they earn a living from the forest. They mentioned that the forest was not their steady source of income, but that the families earn an income through forest activities during about a quarter of the year, amounting to more than 50% of the home income. The amount earned, according to the men, ranged from BZ$1,000 to BZ$2000 per annum. The females however felt that the forest provides less than 25% of annual home income. The community feels that it is very important to protect the forest because it provides oxygen, lumber, food, water and material for the homes. It is also considered a sacred place for the indigenous people. They mentioned it is also important to protect the forest so their children can have use it in the future.

When asked about their understanding of the concept of sustainable forest management, the general consensus was that SFM is "protecting the forest, the animals and plants so we can have the use of it all the time". The Rax Mu Qiche Group (under the green shade of the forest), was recently formed to undertake the management of their communal forest. The group has been legally established, and through the assistance of SATIIM, have embarked upon and completed a management plan for their community forest. Training has been received over a period of about a year, in focal areas of community forest management,

namely community organization, technical and administrative training, forestry planning, timber and non-timber harvesting, and competitive and equitable commercialization (Choc 2009). A one year license was very recently approved by the Forest Department for the commencement of operations. It is understood between the group and the Forest Department, that once the required changes are made to the management plan as requested by the Forest Department, a 19 year long term license will be signed for the sustainable management of the Conejo forest (Sabido 2009). Work has commenced under this one year license, while the necessary changes are being made to the management plan.

On the question of experience in forest management, the responses suggested that much of the experience had to do with traditional knowledge. For instance, they mentioned that milpa fires are not done without making fire passes. Trees along the river are not removed so as to protect the waterways. Not all the merchantable trees are felled, some are left because they serve as "a place to live" for wildlife. Similarly, some trees are left because they provide habitat and food for wildlife, which in turn represents an important supply of meat for the community. In terms of technical experience, the training undertaken over the past year has created and improved some skills in forestry. Some of the men are now trained in conducting forest inventories, tree mensuration, use of compasses, tree identification, directional felling and planning of escape routes when felling. They feel more training is needed in areas of inventory and directional felling, forest fire management, and first aid. The next few months and years will help to build further capacity as the newly acquired skills are put to use.

4.3.1.3 Conejo community capitals analysis

The capitals analysis is being done on the basis of their relation to the requirements for sustainable forest management. The capitals in a community are used primarily to determine the overall stock of assets within the community, with a view to improving the general development status of the community. In this case however, it is unreasonable to assume that the approval of a forest license, or that income generation from forest management alone will address the entire scope of development of Conejo. Rather, forest management should be seen as an important contribution to development, and not *the* solution.

4.3.1.3.1 Human Capital

As it relates to forest management, human capital has been improved in the past year with the training acquired by the members of Rax Mu Qiche Group. This covers the areas of inventory, tree mensuration, directional felling, as well as other trainings not mentioned in the interview, such as timber processing methods, administration and management of the CBFE, silvicultural techniques and the development of a management plan. (The management plan and all corresponding trainings were prepared by a private consultant, who worked closely with the community and informed and guided them along the way during the plan development). Given the time to apply these newly acquired skills, human capital in forest management will soon be considerably strengthened in this community. In this regard, Conejo Village is leading the way in improving human capital, when compared to Sundaywood and Boom Creek villages. In regards to the overall strength of human capital, it remains as weak since the community feels that there is not much technical training and the level of education in the community is low. Skills do exist in other areas however, such as farming, hunting, home construction, and the use of 'bush medicine'.

4.3.1.3.2 Social Capital

Once again, attributable to the recent forest management initiative promoted by SATIIM and the community of Conejo, social capital is in the process of improving. The logging group, which also comprises several members of the village council (including the traditional community leaders, the Alcaldes), has undergone training in the areas of administration and management of the enterprise, as well as in marketing. This has resulted in an increase in the morale of the group and the leaders of the community. They are proud of their achievement of being one of the first in the country to go this route, and now reach out to others with greater confidence. The networking with other partners (such as the Forest Department) has improved. Similarly, they are now in a position in which they can advise other communities with similar interests, such as Sundaywood and Boom Creek, on how to proceed based on the lessons they have learnt to date. The group is now better poised to network with other partners and stakeholders. The newly gained boost in confidence could also help the leadership of the community to negotiate for other needs.

A pertinent, challenging issue that remains at the forefront however, is that of gender parity within the group and within the community. The Maya culture is a strongly paternalistic culture, and the woman's place is considered to be in the home, taking care of the family. This is evident by the absence of women in all of the meetings (except in Boom Creek) that were held under this research. Likewise, during the training exercises under the SATIIM initiative, it was only men who participated (Linarez 2009). Gender parity remains a challenge in building social capital.

4.3.1.3.3 Cultural Capital

The Mayas of southern Belize, particularly in the rural areas, still practice their traditional culture. Their way of life coincides with their cosmovision of living as one with the environment. The traditional rituals and ceremonies are still practiced, such as fajinas and feast days. The women particularly, still dress traditionally, and the food is traditional Maya, prepared with ingredients from the agricultural fields and the forest. A significant development for Conejo village was the acknowledgement of their communal lands based on the traditional way of living by the Supreme Court of Belize. This is a major victory for the Maya people, as it acknowledges their rights over their territory on the basis of a centuries old culture. Unfortunately, to date the Government of Belize has not moved to implement the decision by the Supreme Court (Choc 2009).

A possible negative aspect of the culture however, is the gender disparity. It is important to address gender parity in forest management, as the women often utilize the forest on a daily basis either to feed the families or to make small incomes (e.g. from sale of crafts using NTFPs). Excluding women from decision making in forest use poses risks to sustainability and management of the forest.

4.3.1.3.4 Political Capital

The participants at the Conejo capitals workshop considered political capital in the community to be very weak, evidenced by the failure of the community to have the Supreme Court judgment implemented by the GoB. Similarly the community feels it has not been able to acquire the basic necessities of the village from the Government, and have had to struggle

for many years before they finally received attention and consideration from the Forest Department and this was only accomplished thanks to support from SATIIM.

While there may be some truth to the community leaders' perception of their poor power of negotiation, the responsibility may not entirely be on them. As was suggested by Greg Choc and Bartolo Teul during the community forestry stakeholder workshop held in Belmopan on September 16th 2009, the enabling environment has not been in place to support such community initiatives in forest management. Consequently communities encounter many barriers as they try to initiate a more long term, sustainable system of forest management.

It is expected that by improving management and leadership skills through past and future technical trainings, the leadership of the community will improve on their competence to lobby for the needs of the community. An incremental change in this can be seen already in their negotiation with the Chief Forest Officer for the approval of an interim license to operate, while they make the required corrections to the management plan. Over time, it is expected that with greater exposure to more stakeholders and potential partners, the leaders and members of the community will develop stronger self-confidence and significantly improve their negotiating and lobbying skills, which could lead to positive changes for the community and its development.

4.3.1.3.5 Financial Capital

With the approval of the interim one year license, work has commenced in the forest management unit in the Conejo forest, as per the first APO. This is a new source of income for the members of the group, which represents 22 of 31 families in Conejo (Rax Mu Qiche Group 2009). This new work has added a new source of income for the members of the group, as they still earn from and rely on their farm crops. Currently they operate based on orders received. "The SFM initiative was never developed to replace existing livelihood activities" (Choc 2009). If the initiative continues to be successful, it will prove to be a good first example that, given the opportunity, communities can responsibly and sustainably manage their natural resources, while making a living off it. It is still too early to evaluate this initiative, as it has only very recently commenced. It is also yet to be determined how much

(more) income is being and will be generated on average at the home economy level, and how this is impacting on the daily lives of the families involved.

4.3.1.3.6 Physical Capital

Physical capital scored among the weakest in the community capitals in Conejo, primarily because of the poor infrastructure within the community. There is not much by way of physical capital that the forest management initiative can contribute to the larger community at this early stage. However, as it regards the community-based forest enterprise, they have commenced building physical capital with the acquisition of physical forestry tools such as chainsaws. As time passes, the hope is that the profits become steady, and the group would be in a position to contribute to greater community causes, such as investing in infrastructure, e.g. providing furniture for the school.

Likewise, it is expected that as incomes increase and are stabilized with the diversified livelihood strategies, families will be able to improve their physical living conditions, for instance, by being able to afford the necessary repairs to homes. The bigger infrastructural projects, such as a water system and improved roads for the community, still need to be negotiated at a higher level between the community leaders and the Government, however, the Rax Mu Qiche group may be able to contribute to or participate in the negotiations, giving more support to the village leaders, as these developments are also in their best interest as a business enterprise.

4.3.1.3.7 Natural Capital

The fact that a community based forest management initiative is a viable business option is possible due to the good condition of the forest in Conejo Village. Even though the community has used the forest daily for many years, it still is able to sustain long term forest management. The forest management plan projects a cut cycle of 20 years, an annual harvest area of 42.8 hectares (856.7 per cut cycle), 119.2 trees per year (2,384.4 per cut cycle), 67.6 m^2 basal area per annum (1,352.6 per cut cycle), and an annual volume of 259.2 m^3 (5,184.6 m^3 per cut cycle). The species of primary interest are yemeri (*Vochysia hondurensis*), nargusta (*Terminalia amazonia*), banak (*Virola koscheneyi*) and bitterwood (*Vatairea lundelii*). The community has gone even further in planning the use of their entire communal lands, as is

demonstrated in their land use map, Figure 15. The size of each land use zone is 856.7, 2,456.8 and 49.0 hectares for forest management, agro-forestry and urban areas respectively (Conejo Forest Management Plan 2008).

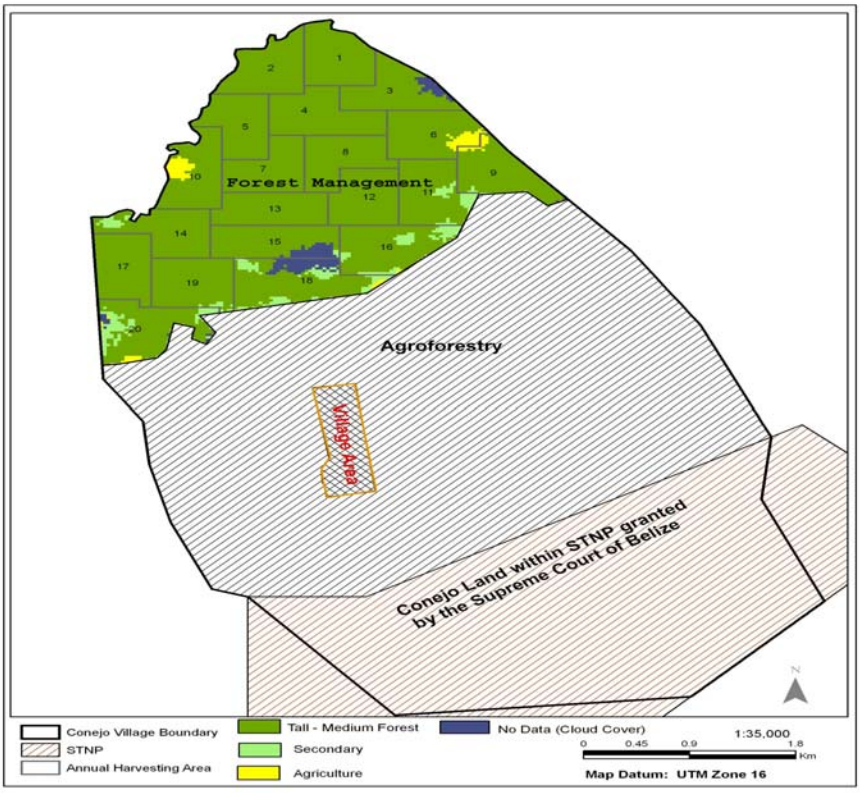


Figure 15: Land use map of Conejo comunal lands
Source: Conejo Forest management plan, 2008

This is an excellent demonstration that the community, having earned recognition of its communal lands, is serious about securing the sustainability of its natural resources and about SFM, while still making a living. It is questionable as to whether the community would have gotten this far in such short a time, had it not been for the accompanying support of SATIIM. It also needs to be ensured that such accompaniment continues until the group is truly able and ready to move on its own. The longer this process takes the more costly it becomes. Conejo's management and use of its natural capital can serve as an example of sound, integrated land use contributing to improving livelihoods and alleviating poverty. The strengths and weaknesses in the community capitals in Conejo village are summarized in Table 8 below. Note that this is in relation to sustainable forest management.

Table 8: Summary of community capitals in Conejo village

Capital	Strength	Weakness (Gaps)	Comments
Human	Training has been acquired in various relevant aspects of forest management, technical experience will be gained as newly acquired skills are put into practice. Traditional forest knowledge and experience exists within the community.	Traditional forest knowledge not given priority consideration by Forest Department. The Forest Department, as a potential technical partner, has not been engaged adequately. Women and women's issues are not included in training sessions so far, even though they interact regularly with the forest (food, NTFPs etc.) This poses a risk to sustainability.	Greater incorporation of traditional knowledge in forestry planning. Rax Mu Qiche group must be allowed time to gain experience, with the realization that mistakes may be made along the way. FD can play a more supportive, technical role, in addition to its regulatory role. Accompaniment will be necessary for the group. The group can and should share experiences gained to date with others communities interested in community forest management.
Social	Strong social bonds exist in the community and are being strengthened as a result of the work	The group has limited experience in enterprise management and development; this experience will come as time goes	Special attention should be given to leadership training, as well as CBFE management.

Capital	Strength	Weakness (Gaps)	Comments
	of the group. Rax Mu Qiche group has received some training in enterprise management The community has broadened its networks as a result of the forest management initiative. This is positive for further negotiation in community development.	by. Women not included in the forest management initiative, even though they have an impact on and are impacted by the forest.	Attention needs to be paid to the gender issue. The group will need guidance for at least the first few years of business enterprise development. The role of SATIIM is important in this regard. A benefit sharing mechanism should be developed by the group, to ensure equity in benefits among members and the community.
Cultural	Very strong Maya culture, which places high value on the forest. Strong cultural bond, especially after the Supreme Court victory granting communal land based on traditional use.	Commercial logging and enterprise management is not a traditional cultural activity in the community. It is a new endeavor for the group and the community. Women are not involved in forest	Gender awareness in forest management should be on the list of areas for training for the group and the village council. Women should be encouraged to participate more. Sustainable use is being encouraged

Capital	Strength	Weakness (Gaps)	Comments
	Strong reliance on the forest for daily sustenance. Traditional leadership is respected in the community.	management decisions, although they use it on a very regular basis.	on the basis of the Maya cosmovision. This experience can be shared with other Maya and non-Mayan communities.
Political	Leadership and management skills should be improved as a result of the training acquired. Improved networking will increase access to the important, influential stakeholders (e.g. NAVCO, Ministry of Rural Development etc.) There is high respect for the traditional leaders of the community (Alcaldes) who also form part of the group.	Capacity building in some areas are still required for the leadership of the community, such as advocacy, negotiation, laws of Belize, etc.	Improved networking resulting from the forest management initiative will allow the community leaders and members to access more opportunities to build political capital, both from new training and from the experience in negotiating this.

Capital	Strength	Weakness (Gaps)	Comments
Financial	A new/alternative source of income is increased through the commercial forest enterprise. This is contributing in an incipient fashion to a diversified livelihood. Forestry contributes to income generation in the home.	Sustainability of the new income option depends on how well the forest and the enterprise are managed. It remains unclear if and how financial benefits will reach the rest of the community not involved in the initiative (8 or so families). If there is discontent in the community about this, it could derail the entire initiative.	Create awareness of the contributory nature of the forestry initiative to the home economy, and not the main means. Guidance of the group in the initial stages is necessary to ensure long term success. Benefit sharing mechanisms should be developed to ensure fair sharing of benefits from such initiatives among the members and the community.
Physical	The group is slowly acquiring physical assets. The group may eventually be able to contribute to infrastructural	Forest management may not be able to address this capital directly, but it may d so indirectly.	Training in leadership and negotiation may help to empower community to lobby for improved physical infrastructure.

Capital	Strength	Weakness (Gaps)	Comments
	development in the community, such as contributing furniture to the school, and gradually increase contributions once greater profits and success are achieved.		
Natural	Forest is considered to be in good condition and can support long term forest management. The community has developed land use zoning for their communal lands. The community has developed a forest management plan for the communal forest.	The forest management plan and land use zone must be followed and respected, if not the integrity of the forest and the enterprise could be placed at risk.	The Forest Department should play a stronger mentoring/ accompanying role to the group, in addition to its regulatory role, to help promote sustainability of the forest and the business enterprise.

4.3.2 Sundaywood Village

The community capitals workshop for Sundaywood was held on Sunday, July 19th, 2009 at the SATIIM Resource Center in Sundaywood village. There were fifteen villagers in attendance at the workshop and no women were present (Annex 3). The participants included members of the Village Council, and the Emery Group (logging group). Seven posters with multiple images characterizing the community capitals were placed on the walls of the center for quick reference by the participants. The pictures appeared to be helpful in their understanding of the capitals as assets.

4.3.2.1 The AI Process in Sundaywood Village

4.3.2.1.1 Define Stage

The goal of the entire process was agreed to be "well managed forests providing benefits to the community".

4.3.2.1.2 Discover Stage

Group one discussed a boundary dispute between the adjacent communities of Sundaywood and Conejo. Both communities had differing opinions as to where the true physical boundaries of their communities lay. In order to settle the matter for good, the leadership (Alcaldes and Chairmen) of both villages held a joint meeting and came to an agreement on the definition of their village boundaries. Subsequently, the leaders held general assembly meeting in their respective communities, attended by all the villagers. The two communities agreed with the boundaries as defined by the leaders. A joint meeting was then held with both communities and their leaders, during which the boundaries of both villages were once again agreed to by all parties, and finalized. To seal the decision, members of both communities engaged in jointly clearing and marking the physical boundaries of their respective villages, and the matter was settled for good. The Group one members then listed the capitals that were present in their story (Table 9).

The second group's discussion centered on the problem of villagers who did not participate in a recent 'fajina'. The fajina is a traditional communal event in which the entire community comes out to clean common areas of the village. On occasion some community

members do not cooperate and do not show up to the fajina. As with Conejo village, the Alcalde's have for many years dealt with such situations by firstly seeking out these absentees to determine why they were not present at the fajina. If the reason is not acceptable to the Alcalde, the absentees are charged a fine of $10 for every fajina that is missed. Apart from being a monetary penalty, the individuals are also embarrassed for not cooperating with the community. This has proven to be a successful way of dealing with the problem of absenteeism in the fajina activities. The list of capitals identified by Group 2 in this scenario is listed in Table 9.

Table 9: Sundaywood Discover Stage community capitals

Capital	Participants' Comments
Financial capital	Time (which could have been spent with income generating activities e.g. at the plantation); some people may not have enough money to pay the fine
Political capital	The community has not been able to convince GoB to install water system; Some people don't listen to the alcalde if he is from another political party; the alcalde has the power to charge a fine if someone violates the rules
Natural Capital	Community land and farm land; air, trees, biodiversity, farmland, wildlife, river
Social Capital	Bridging networks, trust, reciprocity; fajina is a community event so every person must participate. The concept of working together is important
Human Capital	Self esteem, skills and strength and health are all necessary
Cultural capital	Language, traditions; fajina is a Maya tradition

4.3.2.1.3 Dream Stage

The "dream list" below was derived from this exercise. The last stage in this process was evaluating the relative strengths of each of the capitals they had identified as necessary for arriving at their dream community.

Table 10: Sundaywood Dream stage community capitals

Dream	Capital required to achieve the dream
Better streets	Financial, Political, financial
A better school that can withstand a hurricane	Physical, financial, human, social
Electricity	Political, physical, financial, social
Acquire water system in the community	Political, physical, financial, social
Community center	Political, physical, financial, social
Better housing	Political, physical, financial, social
More education for the children	Political, social, financial, human,
Clean community	Human, social, political
Hospital	Physical, political, financial, social, human
For children to be teachers, doctors, etc.	Human, social, financial
Access to income generation	Financial, political, social, human, physical
Long term community license	Financial, political, social, human, natural
Healthy forests	Natural, social, political, human, cultural
That area reps pay more attention to the community	Political, social

4.3.2.1.4 Debrief Stage

Having understood and identified the capitals in the Discover and Dream stages, the last activity of the workshop was for the participants to perform an evaluation of the capitals they identified in the community. The scale of one to four was utilized. Figure 16 shows the results of the scoring of the community capitals in Sundaywood. Note the small area of coverage of the spider web by the shaded area, which implies an overall weakness or deficiency in the set of capitals.

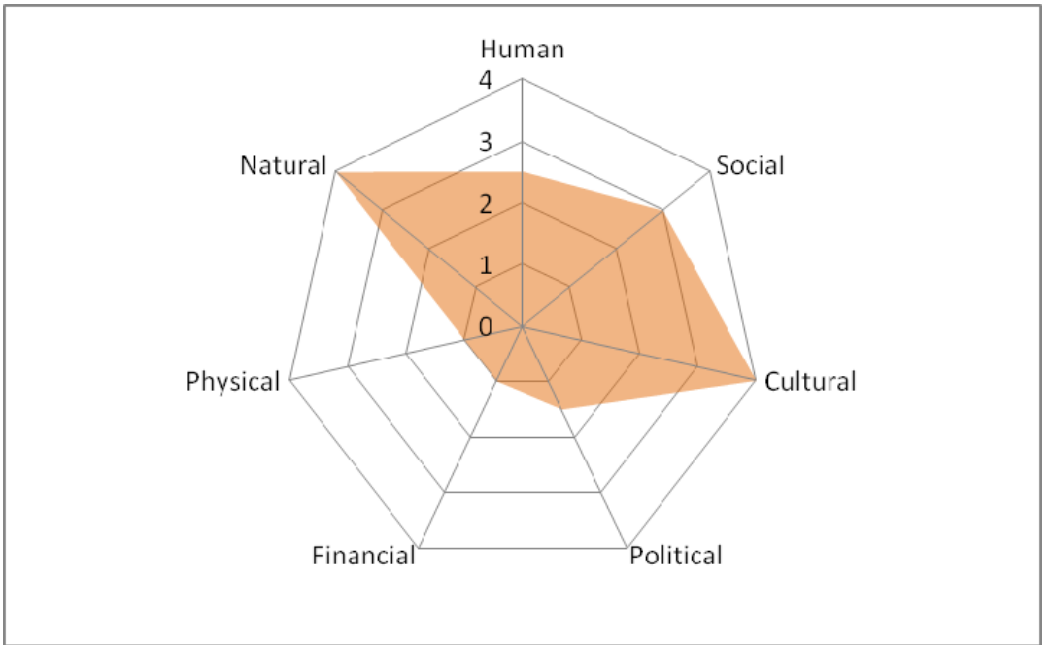


Figure 16: Strength of Sundaywood capitals
(as assessed by workshop participants)

4.3.2.2 The forest and livelihoods in Sundaywood

A discussion was held with the members of the logging group and the village council on Tuesday, September 1st, 2009. The objective of the discussion was to gather further information on the community's level of dependence on the forest. There were twelve men in attendance at the meeting.

The villagers stated that all families farm as a means for making a living; they plant most of what they eat, and the rest of the seasonal crops are sold at the town market in Punta Gorda. Their main crops are beans, corn and rice. According to them, very few people leave the community seeking jobs outside. It was made clear that they are very dependent on the forest, very possessive, and willing to do what it takes to maintain their use of it. The forest provides them with most if not all of their basic needs for surivival. Some of the resources of the forest and their use as stated by the men in attendance are shown in Table 11 below.

Table 11: Forest resource use in Sundaywood Village
(as mentioned by the men)

Forest Resource	Use
Animals	Food, Skin and Pets
Trees	Firewood, Food, material for Houses
Herbs and shrubs	Medicine
Air	Oxygen
Creeks and springs	Water for drinking, bathing and washing

The men indicated that they made daily use of the forest, and in some cases actually receive income, although not a steady income from the forest. They agreed that more than 50% of their home income was earned from forest activities, and the rest would be earned through the sale of surplus crops or on a 'catch and kill' basis, such as the occasional work as laborers outside the village. When asked about a monetary figure of their earnings, about half of them indicated they earned between BZ$800 to BZ$1,000 per annum (US$1.00~BZ$2.00).

The all felt that protecting the forest was important because the forest provides a means for making a living for the community. They also felt that it is proper for the community to manage the forest, since " we use it for our living and our children will need it when they grow up". The logging group in the community (Emery Group) composed of 13 members, who have expressed a willingness and desire to undertake management of the community's forest. When asked why there were no women in the group, the response was that the women have not shown any interest in this kind of work. They stated that most of the members of the group do not have experience in formal forest management, but some have worked over the past recent years in small scale logging, and also have traditional knoweledge, which has developed and allowed them to survive over centuries.

Even though there is not much experience in forest management per se, the traditional knowledge is a tool that will be helpful when they pursue forest management activities in the near future. Some of them have acquired specialized training during the 2008 inventory exericise of their forest, implemented by the Forest Department. The training included tree

identification, line cutting, and the use of GPS. They themselves recognize that further training is needed in conducting inventories and on issues of forest protection.

With the help of the Toledo Maya Women's Council (TMWC), some individual interviews were held with a few women in Conejo and Sundaywood Villages. All the Sundaywood women interviewed stated that most women in the communities stayed at home doing house chores, feeding the family, taking care of children, but they sometimes help out with the crops in the fields when the need arises. The use of forest for these women, whose ages range from 26 to 46 years, is said to be daily to monthly.

Table 12 below indicates which forest goods are collected, and their uses.

Table 12: Forest resource use in Sundaywood Village
(as mentioned by the women)

Forest Resource	**Use**
Animals	Meat
Trees	Firewood, board, lumber, for furniture in the home
Herbs	Medicine, drinks, baths
Plants	Food
"Jippi-jappa"	Basket weaving 'for little income'
Creeks/rivers	Water for drinking, bathing and washing
"Cohune cabbage" (heart of palm)	Food

Some women earn limited income from the forest, mostly through the sale of handicraft made of forest products. They confirmed that the men use the forest for the same reasons stated in Table 11. They differed with the men, however, in the percentage of annual income earned from the forest: most said it was less than 25%, while one mentioned the amount earned was more than 25-50% of the home income. On the question of the importance of protecting the forest, the answers varied from not important, to very important. Those who stated not important gave no reason for their response. One woman mentioned that her son was doing logging for the first time, but later on in the interview mentioned that protecting the forest was not important. Perhaps the connection between protecting the forest and earning an income from the forest was not made. This may be attributed to the fact that most women are

not involved in the commercial use of the forest, and so may place no economic value on it. Another woman said that her husband is a park ranger but went on to say that she did not think it was important to protect the forest. It is surprising that they all confirmed use of the forest for sustenance, yet some may not see the importance of protection. Perhaps protection for them in this context suggests "locking up" the forest, hence the hesitation towards protection.

Those who thought it to be very important said they depend on the forest very much for food, and one woman mentioned it is important because around her home is always cool because of the forest, a service of the forest. One woman reiterated that even though they may not earn a steady income from the forest, they very much rely on it as an alternatove when they cannot purchase meat and other food products.

The interviews suggest generally that there is a great level of reliance/dependence on the forest by the community of Sundaywood. The forest provides basic needs for survival and in some cases, an income for the home. Forestry activities for commercial use are not carried out all year round, but as the need arises. Experience at the Forest Department has shown that when there is need for more finances, such as when the school year is approaching, or there is illness in a family, the requests for small "petty' permits increase. This is clearly indicating that income is being generated to support the families in their plans.

4.3.2.3 Sundaywood community capitals analysis

The discussion is elaborated on the basis of the potential of a forest management initiative (such as a community forest license) in addressing the weaknesses in some of the capitals. It must be understood that forest management can contribute greatly towards some capitals (such as financial and some aspects of human capital), but may be limited in its scope to improve others, such as physical capital. The focus then is on the capitals and their relation to sustainable forest management.

4.3.2.3.1 Human Capital

While some practical experience in forestry can be found within the community, formal training has been limited. Some members of the Emery Group received theory and practical training (tree identification, cutting of lines, GPS use etc.) from the Forest

Department in 2008 when the forest inventory was being carried out in Sundaywood. It is unclear and doubtful that anyone has received further formal training since then. To promote success if a license were granted to this community, training in the management, planning, organizational and marketing aspects of community forest management must be acquired.

All these factors contributed to a rating of weak human capital. Investing in improving access to education is a means of addressing this weakness, but a forest management initiative, can only go so far in contributing to this cause, through the potential generation of income in households.

4.3.2.3.2 Social Capital

Social capital was ranked as very strong by the community. This capital reflects the links between people and between organizations. In the relationship between people, the social capital may be considered as very strong indeed, in that Sundaywood is a very close knit community. The Mayan culture entails traditional practices such as fajinas, religious events, music, dance, food dress and so on, which help to bond and build the social cohesiveness of the community. The villagers are generally supportive of neighbors and help each other in a time of need.

If one refers to the links within the community, social capital may not be rated as very strong. In particular, capacity limitations exist in the logging group, Emery Group, to fully undertake the task of implementing sustainable forest management. Some members have received limited training and exposure to the technical areas of forest management, but it should be noted that much experience exists from regular interaction with the forest over the years (traditional knowledge). When it comes to managing an organization, achieving organizational objectives and so on, there is the need for improvement. Likewise, the presence of and linkages with other organizations (such as women's groups, District Village Councils Association, NGOs, etc.) could be enhanced.

The role of women is clearly and very strongly defined in this culture. Women play a very minimal role in the decisions regarding forest licenses, but do have a great level of interaction with the forest because of the family element (food, medicine, religion etc.). It is

therefore imperative that gender roles in the forest be a topic of training, so as to sensitize the men to the significant supportive role women play in this initiative. It may be best that this is done in a graduated manner, so as not to appear to be in defiance or opposition of their values. With this justification, social capital is hereby rated as strong as opposed to very strong as was ranked by the community.

4.3.2.3.3 Cultural Capital

The Maya culture is very rich and very much alive in these rural communities. It is therefore neither a surprise nor an error that cultural capital is considered to be very strong in Sundaywood Village. The Mayas who live here continue to practice some of the ancient rituals, ceremonies, beliefs, values, cosmovision, music and dance of their ancestors. The use of the dress, particularly by the women, and the traditional reliance on the natural resources for survival, are vivid examples of this rich, ancient culture. Undoubtedly the culture has evolved over time, but it remains a cohesive element with which this community identifies itself. Deliberate efforts should be made to document the culture, as it will continue to evolve and certain traditions may be at risk of being lost.

4.3.2.3.4 Political Capital

This capital was considered to be very weak by the participants of the workshop. They felt that much support and capacity was needed in this area. They have not had much success in securing some of the basic needs of their community, such as running water and electricity. Similar to Boom Creek, the men of the village have been trying to obtain a secure, long term forest license, but have not been assertive in pursuing this goal. They have not sought other support mechanisms in this endeavor, be it because of lack of knowledge or poor initiative. The villagers are generally very humble and appear to be quickly docile in the presence of persons they consider to be authority figures. This may also be a cultural value which has not worked in their favor, especially in the realm of politics and negotiation.

4.3.2.3.5 Financial Capital

The situation with financial capital in Sundaywood is very similar to that of Boom Creek (discussed below). One might venture to say, however, that Sundaywood is at a higher disadvantage because of its distance from the commercial center of the district, Punta Gorda Town. The transaction costs of moving farm and forest produce to the market is considerably

higher, considering Sundaywood village is approximately 24 miles from Punta Gorda. The community is self-sustained in that they produce most of what they consume and any surplus is sold (especially beans, corn and rice). A few villagers leave the community in search of employment, but it was expressed that the cost of living outside is much higher than it is in the community, similar to Conejo. Much of the produce obtained from the forest is used for basic needs, but many of the men interviewed expressed that the forest provides greater than 60% of their home income.

The forest of Sundaywood has been determined by the Forest Department to be able to sustain a long term, sustainable harvest license. In theory this could encourage the generation of income at the local level, as is being done on an ad-hoc basis currently.

4.3.2.3.6 Physical Capital

Physical capital scored as very weak in this community. Most of the homes are wooden with thatched roofing, making them vulnerable to destruction in extreme weather events such as hurricanes. There is neither electricity nor running water in the community, and the main access road to the village is in need of constant maintenance due to the frequent rains. Flooding of the road is also a problem. A very recent development is that a project has been approved by the Government of Belize, through a loan from the Caribbean Development Bank, for the construction of a rudimentary water system for Sundaywood village. Work is expected to commence on this shortly.

4.3.2.3.7 Natural Capital

The community of Sundaywood is of the opinion that the natural capital of their community is very strong. The men of the community expressed that they utilize the forest and the land on a daily basis, and that the natural resources provide more than 60% of the income for their homes. The other income earning activities in the community are linked to the natural resource base. The forest resources serve a variety of purposes for the community, such as animals for food, skin and pets, trees for firewood, food and house construction, herbs and shrubs for medicine, and the creeks and spring water for drinking, washing and bathing.

The village lands are said to comprise approximately 3,931hectares. In the 2008 inventory led by the Forest Department, it was determined that about 2,185 hectares of the assessed broadleaf forest is suitable for a medium to long term sustainable license. The inventory further indicated that there were 4.8 trees/ha, or about 2.3 m^3/ha of commercial volume of timber, of which yemeri (*Vochysia hondurensis*), sapodilla (*Achras zapota*) and nargusta (*Terminalia amazonia*) constitute the primary species. (Cho 2008). (Note: this is for trees with average DBH > 55 cm).

In summary, Table 13 below outlines the strengths and weaknesses (gaps) of the community capitals in Sundaywood in relation to sustainable forest management, and suggests some recommendations for addressing the gaps.

Table 13: Summary of Community Capitals in Sundaywood Village

Capital	Strength	Weakness (Gaps)	Comments
Human	Traditional forest knowledge and experience exists within the community. Some exposure to technical forest management by some members of Emery Group.	Traditional forest knowledge not given priority consideration by Forest Department. Limited technical capacity for forest management in Emery group.	Greater incorporation of traditional knowledge in forestry planning. Training and skills of Emery group members in community organization, technical and administrative training, forestry planning, timber and non-timber harvesting, and marketing must be acquired
Social	Strong social bonds in the community. Emery Group already working together	Emery group has no experience in management of an enterprise, which is what they are hoping to undertake. Networking with other important stakeholders is poor.	Special attention should be given to leadership training, as well as CBFE management. Greater efforts should be made on the part of the group and the Village Council to improve networking.
Cultural	Very strong Maya culture, which places high value on the forest.	Risk of over-exploitation of forest resources.	Serious consideration should be given to supporting long term management of the Sundaywood forest by the

Capital	Strength	Weakness (Gaps)	Comments
	Strong reliance on the forest for daily sustenance.	Women are not involved in forest management decisions, although they use it on a very regular basis.	community. The inventory has shown that it is a feasible endeavor. This may help to address the over-exploitation risk by securing (management) tenure over the forest. Gender awareness in forest management should be on the list of areas for training in the Emery Group. Women should be encouraged to participate more.
Political	There is high respect for the traditional leaders of the community (Alcaldes) who also form part of the Emery Group.	Negotiating power of the community has been weak, have not been able to secure a license for many years. The enabling environment from the Forest Department has not been supportive of the communities interested forest management.	Greater dialogue between the community and the Forest Department should be encouraged. This would support a greater understanding of the issues and concerns of both parties.
Financial	There is some experience in small	Forestry may be seen as "the" answer to	Create awareness of the contributory

Capital	Strength	Weakness (Gaps)	Comments
	scale commercial forestry within the community. Forestry contributes to income generation in the home.	addressing poverty in the community, when in fact it should be considered as a complementary contribution to other livelihood strategies. It may not be able to sustain the entire community.	nature of the forestry initiative to the home economy, and not the primary or only economic option. Training in financial management (accounting etc.) is required for the Emery Group. Benefit sharing mechanisms should be developed to ensure fair sharing of benefits from such initiatives among the members and the community.
Physical	Rudimentary water system to be built shortly.	Forest management may not be able to address this capital directly in a significant fashion.	Training in leadership and negotiation may help to empower community to lobby for improved physical infrastructure.
Natural	Forest is considered to be in good condition and can support long term forest management	Land tenure is insecure at this point in time. If support not given to secure at least management tenure for the community, the risk of deterioration of	The enabling environment for community management should be improved. Government and the relevant NGOs, CBOs etc.) need to

Capital	Strength	Weakness (Gaps)	Comments
		the forest will increase	give greater support for the community's forest management interests.

4.3.3 Boom Creek Village

The community capitals workshop for Boom Creek village was held on Thursday, July 2nd 2009 at the school in Boom Creek. There were 13 villagers in attendance, which included members of the Village Council and members of the Boom Creek Loggers Association (Annex 4). Boom Creek village has a population of 16 families or about 120 people. The main economic activities in the community are said to be logging, fishing, farming and hunting. The villagers are mainly of Mestizo descent. At a previous meeting held with the community, the seven community capitals concept was explained. The group was very participatory in its response and displayed a good understanding of the concept.

4.3.3.1 The AI Process in Boom Creek village

4.3.3.1.1 Define Stage

Once it was clear that there was a good grasp of the community capitals concept, the first stage of the appreciative inquiry process began, which is the define stage. It was collectively agreed that the focus would be "well managed forests providing benefits to the community".

4.3.3.1.2 Discover Stage

Group 1

The participants were then separated into two groups for the discover stage in which the capitals were to be "mapped". Both groups were asked to discuss a situation where a problem occurred in the community and how they addressed and overcame that problem. They were to further attempt to identify what capitals or assets from their community banks were utilized in addressing the problem. Below are the results of the group work.

The first group discussed the issue of a water supply problem in their community. The community currently has no running water system. They were promised by the Government, specifically the Rural Development Ministry, that a water system would be installed in their community. This has not been done as yet and the community continues to utilize rainwater collected in water vats during the rainy season. They run into problems during the dry weather during which it becomes necessary to conserve water. Sometimes it is necessary to share

water, as some neighbors' rainwater tanks go dry. The government does provide some temporary relief during the dry season by sending water trucks to fill the tanks. The community feels however, that they have been given empty promises by the Government regarding their water system. The group thereafter identified the capitals present in the problem, and scored their strength using the scale in Table 3.

Table 14: Boom Creek Group 1 Discover stage community capitals

Capital	Score	Strength	Participants' Comments
Physical capital	2	Weak	No running water system in the community
Political capital	2	Weak	Community has not been able to convince GoB to install water system
Natural Capital	4	Very strong	Community feels blessed with abundant natural resources
Social Capital	3	Strong	Community works together and supports each other in time of need
Human Capital	3	Strong	Level of education is not very high, people have various skills in the community
Cultural capital	4	Very strong	The community views water as being very precious and practice that ethic by conserving water

Group 2

Group 2 addressed the concern of community lands that were being issued to outsiders without the villagers' knowledge. Several persons had acquired lands in areas that the community considers as part of their community lands. They were not consulted about the granting of such lands, nor were they in support of it. This caused an uproar among the villagers and they collectively agreed to address the problem. This issue was tackled using several different tactics including visiting the area representative to express their concern, writing to the Minister of Natural Resources and by publicizing the problem on call-in radio shows and television appearances. The community also undertook to demarcate the community boundaries, took steps to prevent outsiders from settling through regular foot

patrols, conducted regular village meetings to keep abreast of the problem and applied for a long term forest license for the community lands. Consequently the efforts paid off as the granting of community lands to outsiders has been suspended. Using the same scoresheet, the group then identified the capitals that were present in this scenario.

Table 15: Boom Creek Group 2 Discover stage community capitals

Capital	Score	Strength	Participants' Comments
Physical capital	2	Weak	Telephone and road access were impeding factors
Political capital	3	Strong	Access to political agents and government officials, power to negotiate
Natural Capital	4	Very strong	Air, trees, biodiversity, farmland, wildlife, river
Social Capital	3	Strong	Leadership, logging group, bridging and bonding networks, trust
Human Capital	3	Strong	Skills, health, self-esteem
Cultural capital	3	Strong	Cosmovision, traditions
Financial capital	2	Weak	Income was an issue in mobilizing the action

4.3.3.1.3 Dream Stage

For this activity the participants discussed their dreams for their community, or what would make their community the perfect place. The capitals required to achieve the dreams were then identified by the participants and are listed in

Table 16.

Table 16: Boom Creek Dream stage community capitals

Dream	**Capital required to achieve the dreams**	**Participants' Comments**
Jobs in the community	Financial, Human, Social, Political	Income needs to be generated in the community
Eco-tourism	Natural, Financial, Human	The natural beauty can help generate income by tourism. Need people trained as tour guides
Acquire long term concession	Natural, Human, Political, Financial, Physical	This will help to generate income in the community but needs more political capital to get it
Acquire electricity in the community	Political, physical	
Acquire water system in the community	Political, physical, natural	
All weather road for the community	Political, physical	
Improve skills of community members	Human, physical, Social	
Improved education	Political, social, financial, human, physical	Need better school and relevant education
Hurricane shelter	Political, physical	
Leadership training	Human, social, political, financial	
Establish a nature park for the community	Natural, human, financial, physical	A park will help to preserve the environment and also generate income
Renewable energy	Natural, financial, physical	

Dream	Capital required to achieve the dreams	Participants' Comments
Better farming	Natural, human, financial, physical	Better equipment, integrated farming systems
Food security	Natural, human, financial, physical	Plant our own food
Good health	Human, political, cultural, physical	Health post needed
Sustainable supply of natural resources	Natural, financial, human, political, cultural, social	Have abundant natural resources but need to make sure it is maintained

4.3.3.1.4 Debrief Stage

Finally, the participants jointly performed an evaluation of the capitals in their community, based on those identified in the discover and dream stages, utilizing the scoring system of 1 to 4.

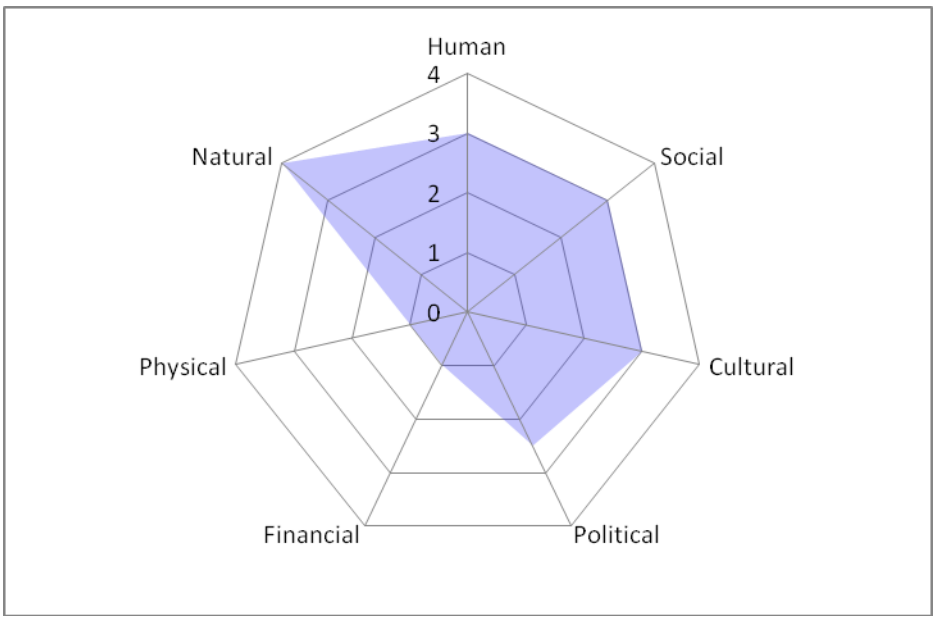


Figure 17: Strength of Boom Creek capitals
(as assessed by workshop participants)

4.3.3.2 The forest and livelihoods in Boom Creek

The interview was done on Sunday, August 30th at the school building in Boom Creek Village. There were 11 people present at the meeting, representing both the Village Council and the Boom Creek Logging Association. It was made clear by the community at the start of the meeting that for them it is important to take care of the forest, so as to continue logging, hunting and fishing, three activities that contribute greatly to their home economies.

It was stated that logging, hunting, fishing and farming were the main income earning activities of the community. Some members of the village worked in other areas such as construction work and teaching, but the majority is engaged in the aforementioned activities. It is mostly the men who work, although some women do fishing for home consumption. (No women were present at the meeting). Those present at the meeting stated that the forest provides more that 50% of the home income, through logging and hunting, which is about BZ$5 to $6,000 per annum ($US1~BZ$2). The use of the forest products by the community is shown in Table 17.

Table 17: Forest resource use in Boom Creek Village
(as mentioned by the men)

Forest Resource	Use
Trees	Lumber, sticks for houses.
Animals	Food
Herbs and Bark	Medicine
River	Food (fish) and water for bathing and Washing
Air	For breathing
Cohune and other palm leaves	For roofing

In regards to forest management, the men stated it was very important for them to protect the forest, because it is the source of their living. They expressed that sustainable forest management means "using the forest to survive and not destroy it, such as logging some trees and leaving some behind" (Boom Creek Logging Association 2009). The Boom Creek Logging Association was formed about five years ago by a group of men who wanted to work together in a more sustainable way for themselves and for the forest. It currently comprises eight members, representing eight families. There are no women in the group, but it was expressed that women do participate now and then, although they ordinarily stay at home.

Like their counterparts in Sundaywood Village, the men in the logging group received brief training from the Forest Department in 2008 during an inventory exercise of the community forest. Some of the skills acquired were tree identification, the use of GPS, cutting of lines, tree mensuration, tree falling techniques and some firefighting skills. Several of the men have also been logging for several years, so have acquired some logging skills, such as tree identification and falling of trees, through experience.

The group possesses a small band saw, acquired through joint financial contributions of the men who engage in logging, which they use to process the logs; hence skills have been acquired over time. All the men felt that they could use more training, specifically in the areas of inventory, safety in directional felling, preparation of management plans and annual plans of operations.

4.3.3.3 Boom Creek Community Capitals Analysis

The participants in the Boom Creek workshop demonstrated a good understanding of the concept of community capitals. It was mentioned that while they did not know of the capitals as a concept, having completed the exercise they did see its presence and practicality in their everyday activities. The results of the exercise demonstrated that the strength of the capitals range from very weak to very strong in the opinion of the workshop participants (Figure 17). The analysis is done with the consideration that sustainable forest management by the community is the ultimate objective.

4.3.3.3.1 Human Capital

This capital is of utmost importance if there is to be success in the endeavors of community development. Many times attention is focused on the acquisition of physical assets, for example chainsaws and sawmills in the forestry sector, but not much is done to foster the knowledge of their use and maintenance. What often occurs in such situations is that the equipment is ruined or worn out prematurely when poor practices cause damage and repairs are unattainable due to high costs. Similarly, the granting of a long term forest license alone does not guarantee sustainability in the long run, if there are no investments made in building the human capacity of the parties involved. If the license holder (in this case a community group) is not knowledgeable in the technical and enterprise management components of forest management, then the efforts at sustainability of the resource and livelihood could be all for naught.

Investments in human capital should be considered in short, medium and long term time horizons. In the short and medium terms, training in specific areas of the forest management pillars as suggested by Choc (2009) (community organization, technical and administrative training, forestry planning, timber and non-timber harvesting, and marketing) should be considered a priority. This cross cuts with the same training needs included in social and political capital, but also extends to specific capacity building in concepts of forest management plans, annual plans of operation, forest inventories, map reading, compass and GPS use, tree identification, calculation of volumes and use of milling equipment, inter alia. Longer term considerations in human capital development include increasing the literacy rate, increasing the level of education and improving leadership skills.

4.3.3.3.2 Social Capital

Several incidents in the village have prompted the community to work together, thereby strengthening their social capital. They spoke vociferously of a situation with a Mennonite logger who they felt was extracting the timber from their land at a vast scale. Initially some of them were employed by the Mennonite, but as time passed they began to realize that the resources were being withdrawn and the community would eventually be left with nothing. They stood together as a community and finally managed to oust the indiscriminate logger and are now seeking to go into sustainable long term management of the same resource. The strong social capital is further evident in the working relationship of the Boom Creek Logging Association. The group has been in existence and working together for at least five years. This is the group which is lobbying for the acquisition of a long term forest license. This social capital is probably strengthened by the fact that most of the villagers are relatives. There are some thematic areas in which social capital can be further strengthened. These include leadership, conflict management, team building and the participation of women (gender parity).

If this group or other such groups (e.g. the village council) is to become efficient in its role, certain other capacities would be necessary. These include principles of business (e.g. business management, bookkeeping, accounting etc.), rights and responsibilities of the individuals and the organization, the legal processes (the Forest Act, Village Councils Act, local governance etc.), and skills such as fundraising, advocacy and negotiation. These skills in the long term would contribute to enhancing the performance of the individuals and the groups in the community in the deliverance of services and pursuance of their overall objectives. Such training can be acquired locally from Government institutions such as the Forest Department, Department of Local Government, and institutions such as National Association of Village Councils, as per thematic areas. Other local service providers can provide specified training needs. The role of NGOs is important in assisting the village in fundraising until such time that they are capable of carrying out this function independently.

4.3.3.3.3 Cultural Capital

Boom Creek community considered their cultural capital to be strong. In analyzing this capital, they realized that other than religion, there are not many traditional customs which

they practice. They expressed that strong work ethics, respect for elders, respect for leaders, respect for the environment and their bi-lingual status were cultural values with which they identified. There are some traditional foods such as tamales and other Mestizo meals which were considered to be a part of their culture. In this community, cultural capital simply is what it is, as there is no unique traditions/rituals etc., such as in some indigenous Mayan communities, that would separate Boom Creek apart from the others. For this reason they rated the capital as strong and not very strong. This positive value reflecting high self esteem should be taken into account when working with the community.

4.3.3.3.4 Political Capital

With respect to the people based capitals (human, social, cultural and political), the participants felt that these capitals were relatively strong with the exception of political capital, which ranked as weak with a score of 2.5. The community felt that political power was weak because they have not been able to obtain support from politicians and the Government to help acquire basic needs and services. For instance, they pointed to the fact that they still have not been able to acquire a water system, even though it has been promised to them for several years. They commented that they have been too laid back in their approach in dealing with this lack of attention. The example of the long term forest license was also used, in that it has been some time that they have been trying to secure this legal document with the Forest Department, but have been unsuccessful to date. It is evident that their lack of power to negotiate effectively is a restrictive factor in getting major assets they collectively need. In leveraging political power, the community could encourage both attention and investment into the village, be it from the Government, NGO or funding agencies, thereby increasing the potential for community development.

4.3.3.3.5 Financial Capital

The limited economic activities in the community do not allow for the growth of financial capital. Some members of the community have migrated to the nearby Punta Gorda town or other parts of the country in search of work in recent years, leading to the decline in the population of the village. It appears that most of the economic activities are centered on the natural resource base. If the practice of short term unsustainable forest licenses continues, this resource base could be jeopardized, thus adversely impacting the income generating

potential for the community in the medium to long term. On the other hand, by encouraging sustainable use such as that of a long term forest license, a sense of ownership and stewardship of the resources could be molded, and the willingness to invest (time, energy and eventually money) could be encouraged.

If long term, secure economic benefits were seen and felt directly, the option of long term sustainable use might be preferred over short term, insecure, unsustainable gain. It must be taken into consideration however, that a long term forest license would not solve the economic situation in the village. It should form a part of a broader strategy to diversify and improve the livelihood portfolio of the community. Currently, this portfolio is highly focused on and linked to the natural capital in the area. It was mentioned by the participants that access to credit was not easy. The lending institutions' policies and requirements are sometimes seen as restrictive to those who do not have sufficient assets to leverage as collateral. Subsequently, access to credit is available but still limited. This contributes to the negative cycle involving poor income generating options and poor access to capital.

4.3.3.3.6 Physical Capital

The weakest of the capitals were physical and financial capitals. It is obvious to any visitor that the physical capital in the community is inadequate. They have no running water or sewage system and even though a road to the community exists, in periods of bad weather it often becomes inaccessible due to flooding. Only one concrete school building was observed and it is unclear as to whether this building also served as a hurricane shelter. Improvements in infrastructure would have to be sought through the political channels, by negotiations with the Area Representative and the Government, fundraising and other concerted efforts by the community.

4.3.3.3.7 Natural Capital

The strongest of the capitals was thought to be natural capital. It was felt that there was an abundance of natural resources in the community. These natural resources range from water (the Moho River passes through the community), to timber trees, game meat and land for farming. Further discussion with the groups revealed that the natural resources, and in particular the forest, are thought to be very important and worthy of protection. It was said

that forest activities (hunting, logging, fishing etc.) provide more than 50% of the home income in this community (Boom Creek community 2009), thus the need to protect the forest is highly important as it provides a livelihood for the community.

In light of the forest management initiative of the Toledo Healthy Forests Initiative credibility is lent to the consideration of community forestry in the village of Boom Creek. In a recent inventory exercise led by the Forest Department in 2008 in the forest of Boom Creek, it was determined that the 1,730 hectares of broadleaf forest qualify for long term sustainable forest management (Cho 2008). The inventory also found that the forest could yield 5.6 trees/ha or 20.5 m^3/ha of commercial lumber. The top four species in this forest are yemeri (*Vochysia hondurensis*), nargusta (*Terminalia Amazonia*), santa maria (*Calophyllum braziliense*) and rosewood (*Dalbergia stevensonii*). (Note: this is for stems of DBH > 55).

Table 18: Summary of community capitals in Boom Creek Village

Capital	Strength	Weakness (Gaps)	Comments
Human	Some technical forestry skills have been acquired through practical experience in logging over the years. For instance there is working knowledge of the use of a band saw.	There are gaps in technical knowledge in forest management. The group has expressed interest in acquiring more training in specialized areas of forestry.	Acquiring training and skills for the Boom Creek Logging Association in community organization, technical and administrative training, forestry planning, timber and non-timber harvesting, and marketing must be acquired.
Social	Boom Creek is a very closely knit community, they are mostly family. The Logging Association has had a good working relationship for the last five year, therefore have so far demonstrated the capacity to work together. They have some experience in financial management, for instance, they have jointly acquired a band saw for their operations and the operations seem	Networking with other important stakeholders such as the Forest Department and some NGOs could be improved.	Special attention should be given to leadership training, as well as CBFE management. There already exists a foundation on which to build upon with regards to financial management and operations, therefore this work does not have to start from scratch, but build on what already exists. Greater efforts should be made on the part of the group and the Village Council to improve networking.

Capital	Strength	Weakness (Gaps)	Comments
	to be flowing well.		
Cultural	Strong work ethics and family values that allow them to work well together. Strong reliance on the forest.	Logging by the group may still be occurring within the area that was inventoried, even though a management plan has not been developed. This poses a risk for the viability of long-term management. Women are not involved in forest management decisions, although they use it on a very regular basis.	The process of management planning should be accelerated, as this group is eager to start working and have expressed that they need to survive while the process runs. The enabling environment should be encouraged and created by the Forest Department. Gender awareness in forest management should be on the list of areas for training. Women should be encouraged to participate more where appropriate.
Political	The leaders of the community are vibrant, dynamic young men, who, with a bit of further capacity building could improve their poltical capital exponentially.	Negotiating with the government for a long term license has been unsuccessful to date. This could be the result of poor political capital, or an overall poor enabling environment.	Greater dialogue between the community and the Forest Department should be encouraged. This would support a greater understanding of the issues and

Capital	Strength	Weakness (Gaps)	Comments
			concerns of both parties. Training in leadership for the group and the leaders of the community would represent a step forward.
Financial	There is some experience in small scale commercial forestry within the community. Forestry contributes to income generation in the home. It forms part of the livelihood strategy of the community.	Forestry may be seen as "the" answer to addressing poverty in the community, when in fact it should be considered as an option that complements other livelihood strategies. It should not be construed as as a strategy to sustain the entire community.	Create awareness of the contributory nature of the forestry initiative to the home economy, and not the main means. Benefit sharing mechanisms should be developed to ensure fair sharing of benefits from such initiatives among the members and the community.
Physical		Forest management may not be able to address this capital directly.	Training in leadership and negotiation may help to empower community to lobby for improved physical infrastructure.
Natural	Forest is considered to be in good condition and could support long	It is believed that logging (legal) may be taking place in the area that was	The enabling environment for community management should be

Capital	Strength	Weakness (Gaps)	Comments
	term forest management. The Moho River is directly adjacent to the community.	inventoried, which if true, could jeopardize the viability of a long term forest operation and the integrity of the forest. If not done right, logging activities may have a negative impact on the Moho River. Land tenure is insecure at this point in time. If support not given to secure at least management tenure for the community, the risk of deterioration of the forest will increase.	created or enhanced. Government and the relevant NGOs, CBOs etc.) need to give greater support for the community's forest management interests, through licensing, training and management plan development. It should be confirmed if logging is indeed occurring in the area that was inventoried, and if so, it should be curtailed.

4.4 Stakeholder Analysis

On Wednesday, September 16th, a community forest management stakeholder workshop was held in Belmopan. The workshop entitled "Stakeholder Awareness and Research Validation Workshop: Towards participatory community forest management in Belize", had the participation of some fifty stakeholders in the forestry, government, natural resources, human development, private, and community sectors (Annex 5). The objectives of the workshop were to broaden the dialogue on community forestry initiatives in Belize, share and validate the results of the research being carried out, and to conduct a stakeholder mapping exercise of the actors involved in community forest management and their respective roles and responsibilities in achieving community forest management in Belize. During the workshop, presentations were made on the ongoing research, the Toledo Healthy Forest Initiative, and the ongoing community forestry initiatives underway in Toledo under the auspices of the Sarstoon-Temash Institute for Indigenous Management (SATIIM).

The author outlined the objective of the research, the methodology, and the preliminary results. She highlighted that some of the root causes of conflicts in forest management today include socio-economic inequalities, poor governance, ignorance about local needs, discriminatory implementation of laws and rules skewed in favor of more powerful groups, demographic pressure on the forest resources and lack of people-centered, participatory forest management mechanisms. These very challenges are being experienced in Belize. Coupled with the recent declaration of communal lands in two villages in Toledo, increasing demand for local access and participation in forest management, and a Forest Department with less than required resources to manage and monitor forest use and exploitation, make the research a timely and justified exercise. She went on to describe the activities of the research, which included development of sustainable forest management standards, an analysis of SFM in Belize utilizing said standards, an assessment of community capitals in Boom Creek, Sundaywood and Conejo Villages, and an analysis of Belize's overall environment for sustainable community forest management.

In his presentation Mr. Bartolo Teul of the Ya'Axche Conservation Trust presented on the history, objective and vision of the Toledo Healthy Forest Initiative, including some of the failures experienced so far and some recommendations for progress. The THFI, chaired by the

Forest Department, is a multi-stakeholder taskforce which was appointed in 2004 to address the rapid depletion of forest resources in the Toledo District and to look more closely at the option of community participation in forestry in the District with the highest incidence of poverty in Belize. Its 12 person membership includes representation from government departments, the private sector, NGOs and civil society. Activities undertaken by the THFI to date are visits to Peten to observe community forestry initiatives and lessons learnt so far, a retreat which chartered a strategic direction for the initiative, and forest inventories in four communities, namely Boom Creek, Sundaywood, Otoxha and San Jose villages. Mr. Teul mentioned that lack of commitment from some local people, lack of political will, lack of seed capital to implement community-based forestry, and poor communication, accountability and transparency are serious threats to the successful achievement of participatory community SFM. The current policy environment, he stressed, also poses a threat to sustainability in forest management.

SATIIM's Executive Director, Mr. Gregorio Choc, spoke of the community forest management activities taking place in Conejo and Santa Teresa Villages, Toledo District. The objective of the initiative being implemented through his organization is "To promote the development of a model of community-based forest management in southern Belize, as a mechanism for conservation and sustainable development" (Choc 2009). Activities are taking place under 5 pillars of community based forest management: 1) community organization, 2) technical and administrative training, 3) forestry planning, 4) harvesting and 5) competitive and equitable commercialization, as detailed below:

Community Organization

- Organize community based forest enterprises (CBFE) (Board of Directors)
- Acquire legal status and delineate norms and regulations

Technical and Administrative Training

- Administration and management
- Development of SFM plans (forest inventories and EIA)
- Sustainable harvesting (actual logging operations)
- Competitive commercialization

Forestry Planning

- Definition of forest management unit

- Conduct forest inventory
- Development of management plan
- Develop Environmental Impact Assessment
- Commercial census and APO

Harvesting

- Direct felling or harvesting
- Sawing (chainsaws and frames)
- Silvicultural techniques (seed trees, natural regeneration management)
- Transportation

Competitive and Equitable Commercialization

- Identify local buyers (national and international)
- Sign equitable and competitive contracts between sellers and buyer

4.4.1 Results of "Who counts most matrix"

After the presentations and plenary discussions that arose (Annex 6), the stakeholder analysis was conducted. The process of the "Who Counts Most Matrix" was explained to the workshop participants, and the exercise was done in plenary. The results of the exercise are shown in Figure 18.

Dimensions	Forest Department	Communities	Community groups	Land owners	Consumers	Technical experts	Funding agencies	NGOs
Proximity	2	1	1	2	3	3	3	2
Pre-Existing Rights	2	2	2	1	3	3	3	3
Dependency	1	1	1	3	3	2	3	2
Poverty	3	1	2	3	3	3	3	3
Indigenous Knowledge	3	1	1	3	3	3	3	2
Culture/Forest integration	3	1	1	3	3	3	3	2
Power Deficit	1	1	2	3	3	2	1	2
Mean Value	**2.14**	**1.14**	**1.43**	**2.57**	**3.00**	**2.71**	**2.71**	**2.29**

Figure 18: "Who Counts Most Matrix" of SFM in Belize
(as determined by workshop participants) (1=High, 2=Medium, 3=Low)

The participants felt that the most important stakeholders in sustainable forest management in Belize according to the "who counts most matrix", were communities and community groups (1.14 and 1.43 respectively). The responses to the 7 dimensions of people-forest interaction were listed as high or medium for these groups of stakeholders. A similar score of high was given to both groups for proximity, dependency, indigenous knowledge, and culture forest interaction. It was felt that pre-existing rights were of medium importance for both these stakeholders, and poverty and power deficits were of medium importance for community groups. (Community groups generally have more leverage in acquiring financing and negotiating power than do individuals in a community). Using these dimensions clarified for some of the participants that in the social component of forest management, the most important stakeholders are not being given the priority they deserve. In other words, they count the most but have the least access and power.

The Forest Department, NGOs, land owners, technical experts and funding agencies all qualified as of medium importance with scores of 2.17, 2.29, 2.57 and 2.71 respectively. The Forest Department scored low on the dimensions of poverty, indigenous knowledge and culture forest integration, but was considered to be a very important stakeholder when it came to its dependence on the forest and its power over the use and protection of the forest. Land owners pre-existing rights were considered of high importance. Interestingly it was felt that funding agencies' power over the use and protection of the forests was of high importance as well. The consumers were considered to be of low importance in the realm of SFM in Belize. Two other stakeholders were identified, unfortunately because of time the scoring was not conducted for these actors. They were identified as Other Government ministries and private loggers. It is the opinion of the writer that these two sets of stakeholders should rank with a medium importance, as they hold a medium level of dependency and power over the use of the forest (e.g. the Ministry of Agriculture). Some private loggers (particularly large companies) hold significant influence over the decision makers. The politicians themselves, who would rank as of low importance in this matrix, have the ultimate power in influencing and determining what decisions are made over the use and management of the country's forests. For this reason they cannot be ignored and must be considered as very important stakeholders.

4.4.2 Results of Primary Stakeholder Responsibilities in SFM and CBSFM

The exercise then focused on the responsibilities of each identified stakeholder in SFM and in ensuring community based forest management initiatives are successful. For each stakeholder's identified as important, responsibilities were discussed and the results are presented below.

4.4.2.1 Communities and community groups

Communities and community groups, being physically within or adjacent to the forests, could play an important role as those primarily responsible for monitoring their use and conservation of the forest. It is more cost effective and provides incentives to the communities to ensure that forest activities carried out by themselves or others are legitimate.

Communities also have the responsibility of advocating for participation in forest management, if it is their desire, be it through direct implementation of SFM, monitoring and enforcement of SFM activities within their area, good stewardship of the forest resources or mutually beneficial partnerships with other license holders in the area. This entails increasing and improving the dialogue and negotiations with the Forest Department, ministers of Government, local area representatives, and reaching out to other partners to ensure involvement at the level deemed appropriate by the community (as has been done by Conejo and Santa Teresa Villages in Toledo District, although these initiatives were mostly NGO led).

Higher levels of social and political capital are required than are present in the three communities investigated in this study. It implies also, that those groups already present in the communities, such as village councils, logging groups (formal or informal), traditional Alcalde leadership, women's groups (where present), and CBOs such as official park co-managers (e.g Friends of Mayflower Bocawina National Park in Stann Creek District, comprising of community members), should play a lead advocacy role given that the level of social and political capital is already higher than in the broader community itself.

Discussion also centered on the recommendation that communities, with support of community groups, should be responsible for developing their own development agenda. This will help to steer activities such as forest management within their community areas. If sustainable forest management is not within the development agenda of a community, then it

should not be imposed, but a community must have a vision of its development direction so as to avoid imposition of unwanted activities in their villages. Having access to more resources and human and social capital, community groups have the responsibility of supporting the initiatives of their communities, and sharing those resources available to them for the forward movement in the communities.

4.4.2.2 Forest Department

The participants suggested that the Forest Department, being the lead and regulatory agency in forest management in Belize, holds the important responsibility of creating an enabling framework for community-based forest management, as a tool for achieving sustainable forest management. It should also contribute to the creation of the corresponding enabling legislation.

Technical guidance and assistance (inventories, management planning, monitoring of APO implementation, feedback, etc.) collaboration and networking and participation in inter-agency coordination on land tenure are other critical responsibilities of the Forest Department in supporting its partners in sustainable forest management. Other regulatory activities such as improved monitoring, research and strong promotion of SFM were also considered important responsibilities.

Political will, capacities and attitudes are critical factors that need to be addressed if these responsibilities are to be fulfilled. While enforcement and regulation are necessary, the Forest Department must move towards a fostering role towards its sector partners, including social actors. The days of heavy-handed enforcement and regulation is a thing of the colonial past; the atmosphere today calls for improved relationships, dialogue and partnerships.

4.4.2.3 Private land owners

Private land owners, who were considered stakeholders of medium importance that have a responsibility to advocate for and practice sustainable land use, including SFM. Advocacy in revision of land laws is also considered as important, as is being done through the Belize Association of Private Protected Areas (BAPPA). Since resources are generally made more available to private land owners, collaboration with communities is considered to be a responsibility, in that land use activities of the land owners many times impact on the communities bordering the private land. Furthermore, communities are in a better position to

act as “watchdogs”, simply by virtue of their physical permanence in the area. It is not uncommon, in fact, that on many occasions communities are more aware of what is happening in a private property than does the land owner himself.

4.4.2.4 Funding agencies

Funding agencies play a catalytic role in realizing change in resource management. However, a common complaint is that the requirements of funding agencies sometimes act as barriers to some groups and organizations; the proverbial carrot on a stick. Participants felt that the responsibility of these funding agencies is to ensure that the funds are available to the partners at reasonable and favorable terms, rather than imposing disadvantageous ones that discourage involvement in SFM.

Loan collateral must also be diversified and not be limited to only land, as not all groups or stakeholders have physical or natural capital to put forward as collateral. Funding agencies also have the responsibility of respecting the development agendas of communities, rather than imposing their own institutional plans, as well as supporting the financing for development of these plans. Where loans and grants have been disbursed, funding agencies must ensure partner accountability. And in an effort to promote sustainable development, funding agencies have a responsibility to advocate for incentives that foster sustainable development, both within and outside of their institutions, and to encourage and promote financial sustainability of their partner groups/organizations.

4.4.2.5 NGO’s

NGOs can also act as catalysts in realizing sustainable forest management and community forest management. Participants suggested that NGOs responsibilities in this regard include advocacy, training of partners and networking and building strong, mutually beneficial relationships with other stakeholders. Accessing funds on behalf of newer partners is also essential, but this should be coupled with mentoring of these new partners to build capacities in acquiring funds.

The role that SATIIM played and continues to play in supporting the communities of Conejo and Santa Teresa Villages in Toledo highlights the importance of NGOs in mentoring these communities and community groups in preparing for implementing SFM as required by

the Forest Department. SATIIM has been pivotal in advocating with and on behalf of the community to acquire the funding to develop the forest inventories, the management plans, the APOs, trainings, and in securing the forest license to commence operations.

Advocacy to improve forest management is another important responsibility of the NGO community. Among the strengths of the NGO community are its lobbying power and its networking at various levels and scales, critical factors in bringing about desired changes in resource management. The advocacy for improved SFM should be geared towards modernization of the forest and forest policies and legislation, promoting improved performance in SFM by all actors, and promoting good governance within the forest sector.

4.4.2.6 Politicians

It was agreed that politicians (area representatives) are highly important and influential stakeholders in forest management. Along with this importance comes a very high level of responsibility. Firstly, they must visit their constituents on a more regular basis to be informed of what is happening on the ground, what are the major concerns and worries of the people. Secondly, based on this knowledge, the politicians have a responsibility to respond to their constituents needs, by making informed decisions to the benefit of the constituents. For instance, supporting a community group in its request for co-management of a national forest or a protected area, or giving serious considerations to a community's misgivings about forest activities in their community, are some of the ways politicians can play a supporting role.

At the macro level, politicians should appropriate policy and legislation that encourage sustainable development and sustainable forest management. This includes sustainable community-based forest management initiatives. It was also suggested during the workshop that politicians do have a responsibility to plan for the long term, not just for a 5-year term of office. Sustainable forest management is long term and requires long term vision and support. By planning for the long term, it may be possible that such initiatives would outlast any single political administration and increase the likelihood of success.

4.5 Coupling SFM evaluation with community capitals analysis

It should be clarified at this point that the community analysis is limited to the three communities in the study area, all in the Toledo District, and as such, the outcomes of the

research are closely tied to the idiosyncrasies of these specific communities. It should be expected, however, that these three communities possess characteristics similar to other communities in other parts of the country. The overarching policy, legal and institutional framework in which the communities and the sector operate, applies at the national level. Therefore, extrapolation of the analysis to a broader national level is considered to be a worthwhile and legitimate exercise.

In looking at the community capitals in the three study areas, and the forest management framework in place in Belize, it can be seen how the relative strengths of the capitals and the poor forest management framework are impacting adversely on the sustainable livelihood outcomes as outlined by Scoones (1998) in Figure 3. The overarching policy provides little in the way of support to local communities' to encourage and facilitate their involvement in forestry. It is set up in such a way that private individuals or companies with greater access to physical and financial capital are at a significant advantage in securing necessary permits and documentation required for forest management. Such has been the norm for many decades. This is evidenced in the fact that all long term licenses to date are held by private individuals, companies or NGOs (Table 4). It is only in the last five years or so that licenses have been issued to groups of individuals from communities, and this has been limited to the Toledo District (with the exception of a few Mennonite communities in western and northern Belize). Even so, these licenses were for short term periods of one to two years. Only since mid 2009 serious discussions and consideration of long term sustainable licenses with communities (specifically Conejo and Santa Teresa Villages) commenced.

The initiative to pursue sustainable, commercial use of the forests through management planning and long term licensing was an initiative put forth by these communities themselves, with the support of the NGO, SATIIM. The supporting policy and legislative framework was not, and still is not in place to promote these initiatives from within the Government, and it continues to be a struggle for these communities to move towards their common goal. As an example, the Rax Mu Qiche Group of Conejo Village waited almost a year after their management plan was completed, before the plan was approved and a license granted. This is an interim one-year license based on the first year's APO; the Forest Department requires some changes be made to the management plan before the long term license is issued. Santa Teresa Village, whose management plan was submitted along with Conejo's, is still awaiting approval of their license at the time of preparation of this thesis.

Currently all other communities and/or community groups interested in forestry must go through the same license application process. If there are several applications for the same area, the applications are compared with each other, and the license is normally granted to the applicant who presents the greatest merit to conduct the operations. However, it is believed that many times the decision is based on politics, and the question of equity and transparency emerges. Legally it is the Minister of Natural Resources who makes the final approval of all licenses (short and long term), with the recommendations from the Forest Department. The regional Forest Department offices approve the smaller scale permits at the local level. What this means for the communities is a higher transaction cost for the approval of a license, since it has to be submitted to the FD headquarters in Belmopan, where the final decision is made. Checking the status of a license application involves either several phone calls or even visits to the FD headquarters. Delays are common in the process: applicants are known to wait for months before the status of their application is known.

The inequity and political interference is seen when some applications are "fast tracked" through the process and approved rapidly. Community applications almost never figure among those privileged cases. In this sense, several of the indicators of Principle 1, Criterion 1.1 are not being met, including Indicator 1.1.1 – The legal and political framework enables equitable access to the forests and its resources, Indicator 1.1.7 – Procedures and processes for legitimizing forest activities are not excessively bureaucratic and Indicator 1.1.9 – There is no negative political interference.

For most community applicants who apply for licenses, the applications are not approved (although petty permits, small scale permits for individual trees, are issued on a regular basis at the regional office in Toledo). As a demonstration, in the 2009 logging season a total of 37 applications were submitted to the Forest Department headquarters for processing. Of these, only 5 were approved and these were for leased or private properties. About 27 of the remainder 30 license applications, being for national lands in the Toledo Distrit, were never processed, for reasons ranging from poor technical follow up to the pending court case in which the MLA is requesting that all the Maya communities be granted communal land status as has been ruled in the case of Conejo and Santa Cruz villages (Forest Department 2009). This could, and in the cases of Sundaywood and Boom Creek villages, may have resulted in limiting the diversification of the livelihood strategies of the

communities. The economic activities are thus limited to agricultural crops, increasing the threat to the forests if the farmers decide to expand or intensify production.

Furthermore, in the case of Boom Creek, they are operating commercially through the petty permit system, which is grossly unsustainable; petty permits were intended for personal use of forest products, not commercialization. In effect, limiting livelihood diversification and access to the forest for income generation could be adversely affecting household economies in these communities, increasing vulnerability to shocks should agricultural crops fail (e.g. from pests, drought, fire, floods etc.), and increasing the threats to the sustainability of the natural resource base. Scoones (1998) states that "those who are unable to cope (temporary adjustment in the face of change) or adapt (longer term shift in livelihood strategies) are inevitably vulnerable and unlikely to achieve sustainable livelihoods". Many community members have vocalized that if they are not allowed to make a living legally, they would have to do it illegally, pointing to the fact that their options for participation and benefits from the forest are restricted and there is inequity in the system.

The failure of the policy, legal and institutional framework, as well as the broader forest sector to recognize the criteria and indicators of Principle 2, that "the management of forest resources generates local benefits", as shown in the below acceptable performance, signals a further threat to the livelihood strategies and sustainability of the forest resources in these rural areas. The average scores for Criterion 2.1, "People link their own and their children's future with the management of forest resources" was higher in all the sectors, suggesting an acknowledgement that there exists a link between the forests and a future for local residents. However, the corresponding criteria scores were lower, suggesting that while this link is recognized, not enough is being done to ensure that this link is maintained and strengthened. While local actors and communities have the right to manage forests (Criterion 2.2), they have not been granted the *means* to do so. Preference is often given to "outsiders" from the private sector. This leads to a further failure in Criterion 2.3, whereby local actors and communities *do not* have a reasonable share in the economic benefits from forest management activities, reflected in the lowest average scores of this criterion (Figure 11). Once again, the risk of unsustainable use of the natural resource base is increased as local, affected residents may prefer to 'grab' what they can from the forest before it is taken away by the "outsiders". Thus a quick profit mentality is born, with negative consequences for the forests. This undoubtedly impacts on the performance in Principles 3 and 4 of the standard.

As was discussed earlier, the community capitals ranged from very weak to very strong, with cultural and natural capitals being the strongest among the three communities. A comparison of the capitals per community in Figure 19 below demonstrates no significant or outstanding differences in the respective capitals among the communities. For instance, social capital levels are strong in all three communities, cultural capital ranges from strong to very strong (as does natural capital) and physical capital is very weak.

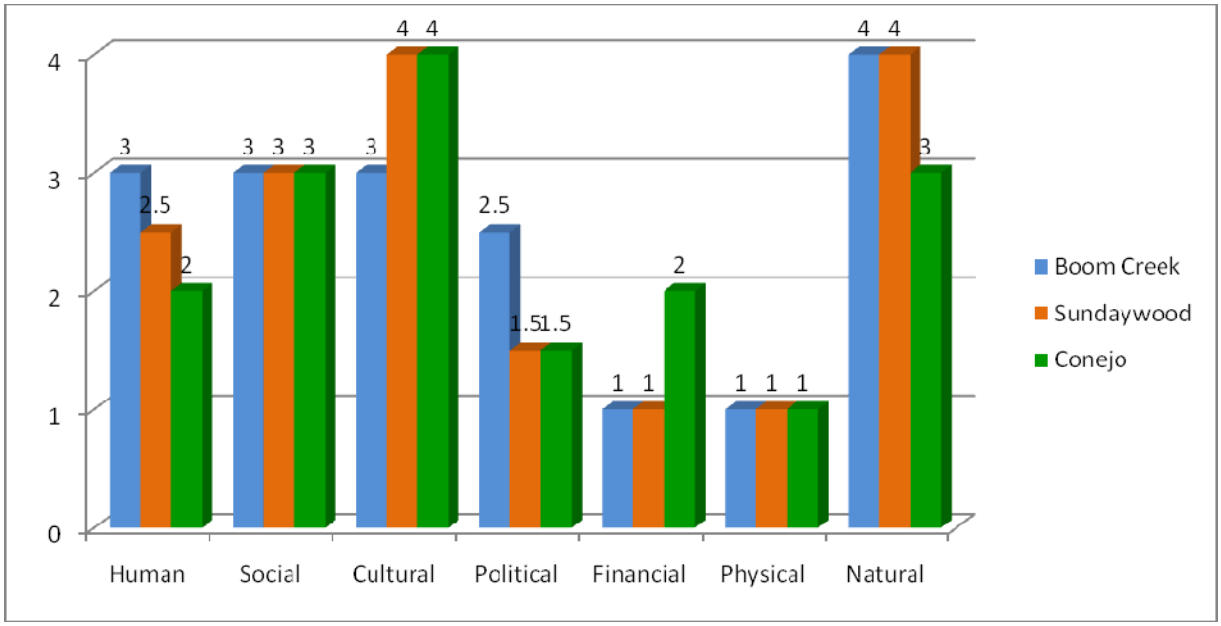


Figure 19: Comparison of community capitals in study areas

Given the similarities in the results of the capitals assessment in these three communities, the question may be asked "how is it that Conejo Village has forged ahead in SFM?" There are two different and likely determining factors in the case of Conejo Village that are not present in the other two communities: i) the landmark judgment handed down by the Supreme Court of Belize recognizing communal property based on traditional practices and ii) the technical and financial support of SATIIM in realizing the goal of SFM. All other factors have remained the same, including the institutional barriers faced by these communities. Acquiring acknowledgement of communal property may have been the watershed event that triggered the community's interest in pursuing more sustainable methods of use and management of, and benefits from their natural resources, coupled with the opportunity for income generation from their now communal forest.

Being a buffer community of the Sarstoon-Temash National Park (STNP) co-managed by SATIIM, a working relationship had been in existence between the NGO and the community. It then served both parties interests to further collaborate to improve management of the natural resource of the community, while creating greater opportunities for the residents. As an indigenous organization itself, but with broader national and international networks and human capital, SATIIM was able to secure financing and technical assistance to support the SFM efforts in Conejo. The results have been a sustainable forest management plan for the communal forest of Conejo, diversified livelihoods for the community (reducing vulnerability to stress and shocks), a sense of pride and accomplishment by the community (well-being), and a big step forward in securing the sustainability of the forest resources which buffer the STNP.

At this point in their progress, it is probable that improvements are being made in human, social, and financial capital. As Conejo village continues to work together in this forest management initiative, widening and strengthening their social networks, it is likely that political capital will also be strengthened, thereby increasing the chances of infrastructural development in the community (strengthening of physical capital). Although there are many lessons yet to be learned, Conejo village serves as an example that in spite of a hindering environment, and with the right support structures in place, communities can successfully pursue SFM in Belize. If the right policy, legislative and institutional conditions were in place, more could be achieved in this regard.

5 CONCLUSIONS AND RECOMMENDATIONS

The evaluation of SFM performance in Belize, coupled with the community capitals analysis of three villages in Toledo, gave some insight into the status of sustainable forest management, and into the sector's readiness for an increased role of community-based forest management. The reality is that the two are not separate or different entities; rather, community forest management is an indispensable tool for implementing SFM, as has been proven in many parts of the world. The survey results suggest that the overall perceived performance in sustainable forest management is poor.

Sustainable forest management holds significant opportunities for improvement of livelihoods at the rural level, and a major portion of the tourism industry is linked to the

forests of the nation. The limited importance placed on the sector is evident in the fact that the Forest Department has over the years seen declines in its budgetary allocations, resulting in the loss and deterioration of assets, as well as the loss of respect as a competent leader in the industry. In the southern region of Toledo, for example, with its remote, rugged destinations, a check with recently retired staff indicated that the last time a new vehicle was acquired by that office was in the mid 1980s; since then all the vehicles sent to the District have been used vehicles, in various conditions of disrepair (Bardalez 2009). While there is competent staff in the Department, it is not nearly enough to effectively deal with the daily demands and requirements of its mandate.

All the SFM standards reviewed for this exercise make mention of the importance of institutional competence. For instance, the ITTO indicators for the institutional framework refer to " the structure and staffing of institutions responsible for SFM, the number of professionals and technical personnel at all levels to perform and support SFM, and the existence of communication strategies and feedback mechanisms to increase awareness of SFM". Criterion 1.1 of CIFOR's standards states that "there is sustained and adequate funding for the management of forests". This is supported by the Indicator 1.1.5, that "institutions responsible for forest management and research are adequately funded and staffed". Similar criteria and indicators are found in other national and internationally accepted standards.

A financial sustainability study conducted in 2007 indicated that the Forest Department has been operating at below mission critical levels (Avila 2007). Table 19 below illustrates the annual decrease in finances to the Forest Department over the past 5 years, resulting in decreased capacity. Resources must be redirected to this Department to allow it to improve its capacity at monitoring SFM activities, and in achieving its mandate. (However, with the recent declaration by the Prime Minister of Belize that the country is in a recession, and directions from the Ministry of Finance that Ministries must further cut back on recurrent expenditures, it is unlikely that any financial improvements on the part of the Government will be seen soon). A staff of approximately forty is responsible for overseeing the management of 94 protected areas, including vast areas of forest reserves, wildlife management, timber extraction licenses on other national and private lands, biodiversity research, mangrove management, illegal logging, and all the policy issues associated with these.

Table 19: Budgetary Allocations of the Forest Department, 2004-2009

Source: Avila, D. et al. 2007

Approved Budgets (US $)	**2004/05**	**2005/06**	**2006/07**	**2007/08**	**2008/09**
Ministry of Natural Resources	$3,644,315.00	$6,211,875.00	$4,378,818.00	$1,948,026.00	unavailable
Forest Department	$1,036,879.00	$721,585.00	$957,224.00	$946,152.00	1,040,086.00
%tage decrease over base year	7%	35%	14%	15%	6%
%tage of Ministry's Budget	28%	12%	22%	19%	Unavailable

The Financial Sustainability Strategy of the Forest Department suggests a funding gap that places the Department's operations at below mission critical levels. This means that at the actual current budgetary allocation (2008/2009), the Department is not able to meet its core functions (Avila *et al*. 2007). This mission critical funding gap stood at US$251,416.00 for the 2007/2008 financial year.

The national forest policy of British Honduras has not been officially revised since its creation in the colonial era of Belizean history. Several amendments have been made to the Forests Act but operating within an outdated framework means operating under the guise of an outdated reality. Among the plethora of criteria and indicators under the policy heading in SFM include those of CIFOR's generic template, such as the following: policy and planning are based on recent and accurate information, the presence of land use plans, the coordination of other sectoral policies to avoid clashes, and intersectoral coordination (CIFOR 1999). Similarly, the national level criteria and indicators of the Central American Lepaterique process for SFM criteria and indicators include the following policy indicators: a dynamic and participative forest policy integrated with other sectors and implemented in support of sustainable forest management, and forest legislation which facilitates the implementation of national forest policies and of established forest management plans (IUCN 1997). There is an urgent need for the revision of the national forest policy and legislation of Belize, and its subsequent adoption.

As it pertains to the overall weakness in the institutional dimension, much needs to be done to improve performance. It should be borne in mind that changing institutions will not happen overnight; it is a slow, gradual process, as there are cultures ingrown in institutions. The ongoing National Forest Program Facility of the Food and Agriculture Organization, which is working towards revising the national forest policy and legislation, presents a golden opportunity for improving some institutional elements of SFM. Already some forestry stakeholders are engaged in research that will feed into the NFP Facility project and ultimately be included in a final policy.

The absence of nationally endorsed SFM performance standards could pose a hindrance to the effective implementation and achievement of SFM in Belize. The forest license conditions, in both short and long term licenses, were established in an attempt to ensure sustainability of the forest resource. Nonetheless, it is doubtful that any analysis has been carried out to determine if the goal of forest sustainability is being achieved through the current short and long term licensing system in Belize. A formally adopted comprehensive set of performance standards could contribute greatly in this regard. A set of standards may help the sector to set goals for sustainable forest management, monitor performance, assess the key information gathered from its application, learn from the information gathered, adapt management to take account of observed changes, make better decisions about future actions and communicate effectively about the impact of factors such as forest policy on the sector (Ritchie *et al*. 2000). A step in this direction has been made with the development of the protocol for "Monitoring and Evaluation of Long term Forest Licenses in Belize", commissioned through the Nature Conservancy and prepared by Meerman and Wilson (2008).

Socio-economic considerations of forest management are not given the level of attention required. The common element of all sustainable forest management definitions is that it comprises of three pillars: environmental, economic and social. "All definitions share the conception that sustainable management should be ecologically sound, economically viable and socially acceptable" (Ros-Tonen *et al*. 2005). It can be said that sustainable production and environmental protection are encompassed in the environmental pillar, and economic profitability in the economic pillar. In Belize limited focus is given to the social impacts and benefits of SFM. This is an area that needs closer examination and consideration, as the benefits at the local level have not been maximized, while the adverse impacts are felt strongly. More meaningful social participation demands greater consideration. There is a

global move afoot in creating space for participation of local actors in planning and decision making in sustainable forest management. Sabogal *et al*. (2008) state that three tendencies in Latin America which are influencing social participation today are the development of CBFE's: shifts in forest governance, decentralization, and collaborative management. These tendencies all involve social participation.

The internationally accepted standards of forest management make several references to social inclusion and participation in SFM. For instance, the CIFOR Criteria and Indicators Generic Template criteria 1.5 is that the "legal framework protects access to forest and forest resources. Meanwhile, The Central American Lepaterique Process highlighted social considerations in the following indicators: Criterion 1, Indicator 8 - a legal framework that guarantees respect for cultural values and for the use of forest resources in property of local dwellers with emphasis on indigenous communities, and Criterion 1, Indicator 2 - Providing means to stakeholders and local governments to strengthen their involvement in, and support to, sustainable forest management. Criterion 8, "Maintenance and improvement of the multiple socio-economic and cultural benefits of the forest ecosystem required to attend the needs of society in general", further demonstrates the importance of societal needs in SFM. The FSC principles and criteria for forest stewardship also incorporate social aspects as good forest practice: principle 3 states that "the legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected", while principle 4 states that "forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities".

5.1 Guidelines for improvement of SFM and enabling environment for CBSFM

5.1.1 Policy and Legislation

- There is an urgent need for a revision of the national forest policy of Belize. Such revised policy should be broadened and take into account the new definition of SFM, which incorporates the environmental, economic and social pillars.

- Sustainable forest management should be promoted as a viable forest conservation tool with added socio-economic benefits. De Camino (2008) states that it is erroneous to

compare the state of a forest management unit, with that of an untouched forest; SFM is not for preservation. Rather, it should be compared to alternative land uses, such as agriculture or cattle ranching, the latter which remove forest cover. SFM should be considered as effective conservation and not as a threat, as has been demonstrated in El Peten, Guatemala, where reductions in forest fires were seen after concessions were granted to private companies and communities.

- The true value of forests to the economy of the country should be determined. Forestry's contributions to the economy of the country are only considered in terms of production of timber, without accounting for the monetary values of environmental and social contributions, such as firewood, food, medicine, recreation (tourism) and ecosystem services such as climate control, regulation of the water cycle, biodiversity conservation (de Camino 2008) and scenic beauty crucial to the tourism industry.

- A revised policy must ensure that more room is created for social participation in the SFM dialogue and implementation, so as to foster an enabling environment for the involvement of social partners at the various levels of SFM.

- A revised policy must also address the economic, environmental and social disincentives to SFM, including inadequate/inaccessible financing, high volumes of short term licenses (unsustainable practices), lack of land use planning, and barriers to local participation such as the lack of support in capacity building in forest management.

- Other policies which impinge on the achievement of SFM must also be considered when revising the national forest policy. For instance, conflicts continue to arise regarding developments and infrastructure within protected areas, such as oil exploration and most recently dam construction. These need to be addressed comprehensively in all protected areas, including forest reserves, as well as national forests.

- Clear land tenure is a pre-requisite for SFM. This is highlighted within the various SFM standards utilized around the world. A revision of the legislation must address land tenure issues in the indigenous as well as non-indigenous communities, so as to avert further conflict over access to the forest and its resources.

- The volume of one year licenses issued by the Forest Department annually may not be conducive to SFM. It instead creates a threat to SFM because the actors involved have no incentive to seek sustainability of the forest; there is no guarantee of a return on investments. Rather, the license is seen as a quick profit scheme, leading to an urgent desire to extract the maximum volume of timber in the shortest time possible. When the limited monitoring capacity of the Forest Department, and the sheer numbers of such licenses across the country are included in this equation, the result is a major threat to SFM. Ninety three such licenses were approved and active in 2008 -2009 logging season (Forest Department 2009). A strategic approach should to be taken on the issuance and monitoring of these short term licenses and their sustainability should be examined more closely. This is another consideration for legislative/policy review.

- While it does not prohibit, the current legislation does not foster formal partnerships with communities in SFM. A mechanism which allows for the development of formal partnerships, through licenses and/or co-management agreements, should be formulated within a revised national forest policy and legislation. This will help to further strengthen the environment for community involvement in SFM. Community involvement in SFM improves collaboration among actors by tackling trust and confidence issues. The perception of transparency, accountability and reliability are improved when communities are aware and involved in decision making (Salas and Santos 2009).

- Decentralization is an increasing trend in SFM in Latin America and around the world. Pretzsch and Person (2003) make mention in de Camino (2008) that the most recent trends in forestry are polarization (industrial forestry, social and conservation forestry), globalization (choice between democratization and devolution or privatization and deregulation) and poverty reduction, governance and implementation of law. In El Peten, Guatemala, communities have been granted control over the forest through 25-year concessions, while in Quintana Roo, Mexico, the forest ejido system oversees the use and management of forests that were repatriated to indigenous and local communities as far back as the 1950's (Sabogal *et al*. 2008). The decentralization in forestry that has been initiated in several countries in Latin America (Bolivia, Colombia, Guatemala, Honduras, Peru and Brazil) implies the transference of the responsibilities, and of certain decision making processes and benefits obtained from the forest, to local authorities. The central authorities have remained with important functions such as the establishment of the

political and legal framework for the management of natural resources, and the development of norms for the use of forest resources (Sabogal *et al*. 2008). Decentralization will not work in a vacuum however, but with graduated steps this form of governance may be a viable option to improving SFM through sharing of responsibilities for and benefits from the forest.

- The development of national standards for sustainable forest management is necessary. Benchmarks are necessary to assess performance in sustainable forest management. Some work has already begun with the development of the "Monitoring and evaluation of long term forest licenses in Belize" by Meerman and Wilson (2008). It is one thing to have all the technical requirements for SFM, but it is wholly another whether or not these requirements have led to their intended objective – the achievement of SFM. As they stand, the technical requirements are skewed towards the environmental and production aspects of forestry, and give minimal consideration to the economic and social components.

- Advocacy to improve policymaking, the legal framework and institutional conditions is necessary step in assuring success. The role and support of the NGOs to the FD is critical in this regard. Lobbying should occur at various levels, including local, regional, national and most importantly, at the political, decision making level, so as to encourage the creation of a common vision for SFM. The FD is aware of the barriers confronting the sector, and some the required changes, but on its own, being an arm of the Government, it cannot guarantee that the recommendations will come to fruition. This is where close collaboration with the NGOs, who have national and many times international lobbying power and influence, comes in.

- The basis of any initiative to implement meaningful sustainable forest management has to include a comprehensive and well managed education and public awareness campaign. At the core of the decision to implement SFM is acknowledgement of the need to change attitudes and to build capacity within the communities and indeed the entire forest sector to effectively participate and to make meaningful contributions to the management process. Inherent also is the need to ensure that the necessary technical skills are resident within the appropriate lead agencies and organizations. There is the need to develop a mechanism and the necessary support structures for formal and informal training in

sustainable forestry management methods. The Forest Department's Communication strategy provides the perfect vehicle for promoting SFM. Incorporating additional forestry courses into the University of Belize curriculum would provide a base for the development of a structured program in sustainable forestry in country.

5.1.2 Institutional Strengthening

- The institutional weaknesses within the Forest Department need to be addressed with a sense of urgency. The inadequate resources (human, financial and physical) allotted to this Department do not allow it to fulfill even its mission critical level of functions; it is operating below mission critical as was pointed out earlier. As such monitoring capacity is decreased and many uncertainties and conflicts arise in relation to the management of the country's forest estate. Perhaps the matter of strengthening of the Forest Department should be an issue for consideration at the policy level, where it will garner more attention than at the administrative level. The Forest Department leadership then has to promote institutional strengthening as a fundamental requirement in realizing SFM in Belize. This may entail consideration of options at re-engineering the FD, through measures such as decentralization of forest management, and or strengthening partnerships with communities and other organizations in management of the forest resources (licenses, co-management agreements for timber and NTFP harvesting, eco-tourism etc.) may reduce the pressure on the FD to fulfill these functions.

- The FD can improve its image and foster a more collaborative approach with the local stakeholders through outreach by the leadership in the Department. Interactions with the leadership of the FD occur primarily within the policy and administrative level, and with protected areas (parks) managers in the field. More association should be had with local stakeholders in the forestry sector, i.e. the communities expressing interest and concern over forestry matters. Typically, anyone wanting to see the Department Heads have to travel to Belmopan. More visits with the actors directly affected by forest management decisions could generate a greater level of understanding of the demands and concerns in both directions, leading to an increased sense of appreciation of the other's points of view, and eventually mutually beneficial actions. Face to face interactions help to build trust as well.

- In addition to its regulatory role, the Forest Department should foster an accompaniment role. It should be more proactive in supporting and assisting the forest sector stakeholders in bringing SFM to fruition, thereby promoting a common vision. It must however, do so with a sense of impartiality: equal support among the various actors, i.e. no preferential treatment. De Camino (2008) points out that the traditional role of command and control has failed in Latin America, resulting in destruction and degradation of productive forests and protected areas. He further asserts that moratoria and restrictions often preceded major failures in the region. In Bolivia, Venezuela and Nicaragua the periods of highest deforestation occurred during moratoria on forest resource extraction. Some countries such as Bolivia and Guatemala have undergone profound policy, legislative and institutional change, in the hopes of confronting the problem of forest degradation (de Camino 2008). The staff of the FD will also need sensitization as to the new realities of forest management, and the new direction the Department must take.

- Several strategic documents have been developed for the FD within the last 5 years. These include the FD 5-year strategic plan, the FD Capacity building strategy, the FD communications strategy and the FD financial sustainability strategy. It is unclear to what extent these documents are serving to guide the Department, but it warrants some attention to review these plans to determine if their purposes are being served, and if not, how and what can be done to improve institutional performance.

- Round table mechanisms such as the THFI may be viable partnership option for the Forest Department to consider. Such 'advisory councils' create a space for dialogue among various actors with varying expertise and exposure in areas which may influence on SFM. Such experts bring valuable experience and knowledge to the table, which widens the perspective in making decisions, helps to reconnect people with the forest, and provides new collaborative approaches where confidence and trust are cultivated. The THFI should then be strengthened and given more credibility in its potential role to encourage SFM and contribute to sustainable futures in the Toledo District. The actors are committed to the process, but an apparent lack of political will has frustrated many.

5.1.3 Community forest management

- The Forest Department should take the lead in promoting CFM and in formulating a community-based forest management (or social forestry) strategy for Belize, that will also ensure that social considerations are included in any revised forest policy and legislation. This strategy should cover areas of direct and indirect community management of forests, including:
    i. promoting long term licenses with communities;
    ii. fostering and overseeing partnerships with communities and the private sector/NGO license holders to promote equity, benefit sharing, and reduce the threat of conflicts. For instance, in Ghana Social Responsibility Agreements are a legal requirement of that country's Timber Utilization Contract (forest license). Each contractor is required to spend not more than 5% of annual royalties accruing from operations to support the development of local communities affected or impacted by the contract (Ayine 2008). Social projects under these SRAs (which are legally binding contracts between the contractors and the communities cover:
        - The provision of potable water supply
        - Schools and scholarships
        - Road construction
        - Furnishing of school buildings
        - Environmental education, among others.
    iii. The concept of corporate social responsibility could be incorporated into a revised policy and legislation as well in Belize.
    iv. Promoting other benefit sharing mechanisms within communities in order to ensure equitable benefits and sustainability of the forest. For instance, community members may benefit from employment and training from private long term licensees.
    v. Creating public awareness of the benefits of CFM, including:
        - Increasing collaboration and cooperation between communities and other SFM stakeholders.
        - Improving the image of forestry as a viable forest conservation *and development* option.
        - Increasing public awareness of the importance of good forest management and the maintenance of forest cover, and the options

for sustainable income generation from forests. (Aversion of conversion of forests to other, non-sustainable uses).

- Securing access to forests may encourage an "ownership" mentality which in theory promotes the psychological effect of protection.
- Promoting income generation at the local level.
- Acknowledgement of the importance and role of traditional knowledge in SFM.
- Empowerment of local communities.

- In theory, community forest management promotes sustainability of the forest resource.

vi. Promoting agro-forestry mechanisms with communities and other local stakeholders as a step towards a) reducing the threats to forests from purely agricultural activities, b) achieving SFM as well as c) encouraging livelihood diversification at the local level.

- Encourage the development of CFM and social participation through a step-wise approach and incremental learning. It is an unreasonable expectation for a community or community group to work on its own in securing a long term license and realizing all the technical steps necessary (management plan, annual plan of operations etc.). Accompaniment by the FD as well as other partners (such as SATIIM has done in the communities of Conejo and Santa Teresa), will be a necessary step.

- Lessons can be shared from the experiences in Conejo and Santa Teresa Villages which have undergone the process of establishment of CBFEs, development of a FMPs and APOs, training in the principles and requirements of CBSFM, partnering with NGO and advocating for approval of a long term forest license. While much experience has not been garnered as yet in the implementation of the management plan, other communities and actors (including the GoB, NGO, CBO and Private sectors) may still benefit from observing these real CFM projects. Such projects are useful in examining what may and may not, or can and cannot work in reality, and how to adapt to changes as they occur.

- Exchange visits at the national level (e.g. visits to Conejo and Santa Teresa) as well as international level (e.g. to El Peten, Guatemala and Quintana Roo, Mexico) are encouraged to observe and learn from the CFM experiences in these areas.

- The community capitals assessment in the three communities in the study area demonstrated a clear skew in strength towards the human, social and cultural capitals, and great weaknesses in the physical and financial capitals. While it may be possible for SFM and CBSFM to intervene and address (to a limited extent) the strengthening of human, social and political capital, it is important for communities and their partners to acknowledge the inherent weaknesses in the other capitals. SFM and CBSFM cannot improve these capitals alone. Likewise, the void caused by the weak capitals may impact adversely on SFM and CBSFM. For this reason, and in an attempt to improve the standard of living in these communities, it is important that the communities and their partners work towards strengthening the weak capitals, an activity that may run parallel to or in conjunction with any CBSFM initiative.

- The results of the research highlighted three critical success parameters of community based forest management: accompaniment (mentorship/support), security of user access, and sufficient forest resources for management. This concurs with the key characteristics of CBSFM as outlined by Sabogal *et al*. (2008), which include the form of decision making within the community, the importance of forestry in the local economy, the motive for entering into forest management, access to the market, integration into the productive chain, and the three aforementioned points. These parameters must be taken into account as their presence or absence may determine to a great extent the level of success of the initiative in the country.

- It is important that the adaptive management approach be applied in the pursuit of community forest management. CFM is a new concept to the forest sector stakeholders in Belize, and should not be seen as the savior of the forestry and livelihood challenges being faced in the rural areas in the country. Instead, it must be understood that errors may be made along the way, but applying adaptive management will be helpful in learning from these mistakes, and using the lessons learned to plan, adapt and move forward. Frequent reflection is necessary to observe what has or has not worked, and implementation must be flexible enough to allow for adjustments as the learning process continues (Prins 2008).

5.2 Presentation of Scenarios

Scenarios are stories of what might be (Wollenberg *et al*. 2000). They can be useful tools where complexity and uncertainty are high, such as in sustainable forest management, and can be used to plan creatively for the future, taking into consideration anticipated change. SFM presents planning horizons that may span decades, complex and uncertain situations where people must work together; this makes the use of scenarios appropriate for communicating ambitions, plans, and perceptions of change, as well as for helping people to adapt to change and achieve their vision for the future (Wollenberg *et al*. 2000). Two scenarios are presented at this point, which are intended for the reader to reflect on the current situation of forest management in Belize, and to trigger visions of a possible future for sustainable forest management. The time frame is ten years in the future. This timeframe is considered reasonable for impacts of effected changes to be felt and observed.

5.2.1 Scenario 1: Business as usual

In this scenario, no significant changes take place in the forest sector as time passes. The Forest Department remains an under-funded and under-resourced institution, incapable of effectively monitoring forest activities. Decisions are made at the top level only, the process continues to be less than transparent, and the perception of inequity lingers. The policy and legislative framework remains focused on the forest as a productive entity first and foremost, with minimal consideration of the other environmental, economic and social benefits it offers. The clamor of local communities and other affected stakeholders for a greater say and participation in forest management has largely gone unheeded, covered up with only cosmetic moves, but no concrete, effective, meaningful action. Long term licenses are all held by private entities, with the exception of a couple of cases on community lands in Toledo. Short term licenses continue to be the norm, and number in the dozens every year, countrywide. Because of its inability to conduct regular monitoring, and the absence of benchmarks for evaluation of performance (standards), these long term licenses have not have the level of support required from the FD. Furthermore, visits to the field by management staff only occurs during times of crisis or conflict management.

In this scenario, it would be safe to assume that with the increasing pressures from the local stakeholders, the barriers presented by the policy and legal framework, and the lack of proper monitoring, illegal forest activities would be rampant across the country. Within a

decade the forest resource may have deteriorated significantly, forcing to the GOB to consider the option of importing timber for the country's needs (pine lumber is already being imported in the present day). Gross discontent with the FD exists among the communities, who have constantly been kept on the sidelines by virtue of policy and legislation that limit their involvement. Furthermore a culture remains within the Department that does not support community management of forests, because 'forestry is a science and is best left up to the experts". Because of poor land use practices, in the absence of a national land use policy or plan, the country experiences devastating effects of natural disasters such as flooding, on a regular basis. (Again, this has begun to occur in real time with the onset of never before seen flooding events in the country. The floods in the summer of 2008 in southern Belize are a classic example; floating debris of dried tree logs which accumulated against a major bridge and eventually forced it down, speak to the poor land use that was occurring on the floodplains of the South Stann Creek river.)

In essence, the outlook is gloomy for the business as usual scenario. The situation with forest management in the country will continue to deteriorate, and the sector would be threatened with destruction. One does not have to go too far to see the true effects of such a scenario. The neighboring country of El Salvador and the Caribbean nation of Haiti have witnessed the destruction of their forests and the forest sector. They have consequently felt the social and economic impacts of this weak natural resource base, through its influence on the economy of these nations. Apart from the natural disaster risk, a poor or deteriorated natural resource base limits options for livelihoods in rural areas, where the natural resources are found. Being at a higher risk from stresses and shocks of natural and economic disasters, local people's livelihood options and well-being could be severely, adversely affected, thus nurturing the cycle of poverty in these areas.

5.2.2 Scenario 2: New governance approach

In this scenario, Belize has undergone profound changes in its approach to forest management. These changes have occurred over the years, not in a sudden explosion, thus allowing the actors to adapt to the changing policy and legislative environment. The process has for the most part been participatory and collaborative, although some serious challenges existed with the actors not being able to agree to a common vision for the future. Patience, dialogue, compromise and the help of international partners such as the FAO through the NFP

facility, helped to overcome that situation. The Forest Department has been rejuvenated with new and adequate human, financial and physical resources. Some adjustments in its mandate and restructuring of the institution have also occurred such as long term SFM partnerships with communities and a notable level of decentralization of forest management decisions.

The forest sector is acknowledged nationally for its true contributions to the country's economy through the provision of forest goods on the local and international market, the forest-provided services (tourism and ecosystem services) and its contribution to poverty alleviation. Rural development projects now incorporate forest management as one of several options for development at the local level.

Several partnerships between communities and the Government have been formalized through long term licenses for forest reserves and community forests. With technical support from the Forest Department, and financial (as well as technical) support from the local and international NGO's, community-based forest management has seen positive results both economically (in the homes and communities) and environmentally (reduced threat of over-exploitation of the forests). In other areas, partnerships between communities and the private sector logging companies have improved with the FD oversight of equitable benefit sharing mechanisms. In some areas, communities, private, public and NGO sectors collaborate to confront threats to the natural resources, such as in the case of forest fires. Through the support of NGOs and the willingness of the Government, some communities have embarked on agroforestry initiatives that not only reduce the threats to the forests, but have also allow for income generation at the community level.

A national advisory council, which comprises representation from various sector stakeholders, has been functional for a few years. It meets on a quarterly basis to review the progress of the FD, and to advise on issues posing serious potential challenges to SFM. This body also advocates and negotiates at the policy level for the timely and effective handling of threats to the forests and the forest sector.

This scenario presents a more positive outlook for the Belizean forests and forest sector in the next ten years. Certainly none of the two scenarios may be likely in reality: they are both on the extreme ends of the forest management scenario pendulum. But if a balance

can be struck at the least somewhere in the middle, then the sector would be much better off in the next ten years than it is today.

5.3 A strategy for improved forest governance in Belize (stepping stones)

Improving forest governance as a step towards achieving SFM involves moving from the business as usual scenario to a new governance approach scenario with elements like the one described. It is an endeavor which cannot be taken in a single leap, lest the important details will be lost quickly. Rather it should be seen as a destination, whose journey will take careful planning and strategizing to minimize and in many cases avoid pitfalls along the way. Each step should be carefully considered, reflecting on experiences gained and lessons learned as inputs for embarking on further steps down the path.

This final section proposes a strategy (stepping stones) for the journey from scenario 1 to scenario 2, through short (one to two years), medium (three to five years) and long term (six to ten years) actions. Ideally, the actions outlined should be completed within the time frame specified.

5.3.1 Short-term actions

- ✓ Give more support and credibility to THFI. This round table mechanism was set up to identify potential solutions for the declining forest management situation in Toledo. However work has progressed slowly, partially due to the lack of attention and support given to the initiative by the Chair, the Forest Department. With greater support and participation, the Department could be using the THFI as a vehicle for advancing partnerships with all actors, increasing public awareness and improving forest management. More participation and involvement by the Forest Department in the activities of the THFI are required for the initiative to be successful.

- ✓ FD leadership must reach out to community stakeholders. This entails becoming more visible in the communities that are pursuing sustainable forest management, building trust and confidence, and creating an appreciation for each other's perspectives, through face to face communication.

- ✓ An exercise to evaluate the policies influencing SFM should be carried out. This should include an analysis of existing policies as well as the effect of the absence of other relevant policies (e.g. land use policy).

- ✓ An exercise should also be done to detail the policy, legislative and institutional factors inhibiting CFM, with a view to removing these barriers.

- ✓ Exchange of experiences among actors in CFM at the national and regional level is recommended. Already Conejo and Santa Teresa Villages are in a position to share with others interested in pursuing the same interests. Likewise, many lessons may be learned from the experiences in El Peten, Guatemala, and southern Mexico.

- ✓ Seek further technical and financial support for pilot initiatives in SFM.

- ✓ Advocate at the political level for institutional strengthening.

- ✓ The FD should embark on an internal campaign to shift or broaden its 'culture' of a regulatory approach to forest management, to a more fostering and supportive approach (creation of an enabling environment), in addition to its regulatory functions. It must provide greater technical support to communities, including networking on their behalf. Educating/sensitizing staff on the global trends in SFM, including CFM (addressing attitude) is also a task that can commence in the short term, to achieve results in the medium to long term.

- ✓ The FAO-NFP forest policy revision project must be incorporated into frontlines of the FD operations. At present the majority of the staff is not involved in the project, nor are they aware of the activities taking place within the project. A project with results of this magnitude must involve the entire staff and administration of the Forest Department and Ministry of Natural Resources and the Environment.

- ✓ Support capacity building in SFM for communities.

- ✓ CFM must be approached in a holistic manner, not in a piece-meal manner as is currently the case. The "who counts most matrix" highlighted that communities are the most important actors, yet in reality they have the least power and are treated as the least important. For this reason, their participation and involvement warrants special attention.

5.3.2 Medium-term actions

- ❖ Continue sharing of experiences.
- ❖ Seek further technical and financial support for pilot initiatives in SFM.
- ❖ Continue advocating for institutional strengthening at political level.
- ❖ Continue internal campaign to educate and sensitize staff on new approaches in forest management.
- ❖ Develop and formally adopt SFM standards for Belize.
- ❖ Revise national forest policy through consultative process (through the FAO-NFP project and other potential partnerships), utilizing results of policy, legislative and institutional evaluations mentioned above and other studies being carried out in relation to the project.
- ❖ Commence comprehensive revision of all forest legislation.
- ❖ Promote and legally recognize long term partnerships with communities.
- ❖ Explore avenues for institutional strengthening through new governance options – e.g. decentralization, devolution, co-management, advisory councils (e.g. THFI) etc. (re-engineering of FD). This may also be an exercise under the FAO-NFP facility. Consideration should also be given to the strategic documents of the FD already in existence.
- ❖ Continue supporting capacity building for communities in SFM.
- ❖ Conduct an economic valuation of national forests and determine the sector's true value to national economy (tourism, timber, NTFP, contribution to local and home economies and livelihoods etc.) The results of this exercise may help to make a case for more serious consideration of the sector at the decision-making level of the GOB.

5.3.3 Long-term actions

- ➢ Continue sharing of experiences.

- Continue supporting long term partnerships with communities.
- Implement revised policy and legislation.
- Implement recommended institutional changes to FD.

Table 20: Strategy for CFM in Belize

Action	Short-term		Medium-term			Long-term					Responsible parties
	1	2	3	4	5	6	7	8	9	10	
Give more support and credibility to THFI											FD, MNRE
FD leadership to reach out to community stakeholders											FD leadership
Evaluation of policies influencing SFM											FD and FAO-NFP partners
Detail the policy, legislative and institutional factors inhibiting CFM											FD and FAO-NFP partners
Exchange of experiences among actors in CFM											NGOs, communities, FD
Seek further technical and financial support for pilot initiatives in SFM											NGOs, communities, FD
Advocate at political level for institutional strengthening											FD, NGOs, other influential partners
FD internal campaign to foster supportive culture towards stakeholders											FD
Incorporate FAO-NFP project into frontlines of the FD operations											FD
Capacity building in SFM for communities											all stakeholders
Develop and formally adopt SFM standards for Belize											FD, MNRE
Revise national forest policy through consultative process											FD, MNRE and FAO-NFP partners
Commence comprehensive revision of all forest legislation											FD, MNRE and FAO-NFP partners
Explore avenues for institutional strengthening											FD, MNRE and FAO-NFP partners
Conduct an economic valuation of national forests											FD, NGOs
Determine the sector's true value to national economy											FD, Private sector, NGOs
Implement revised policy and legislation											FD, MNRE
Implement recommended institutional changes to FD											FD, MNRE

6 BIBLIOGRAPHY

Alcamo, A. and Bennett, E.M. 2003. Ecosystems and Human Well-being: A Framework for Assessment. Island Press. 245 pp.

Amaral, P. 2001. Evaluacion de las condiciones, procesos y resultados del manejo forestal comunitario en la Amazonia Brazilena. M.Sc. Thesis. Turrialba, CR, CATIE. 101 p.

Avila, D. *et al*. 2007. Forest Department Financial Sustainability Strategy, Forest Department, Ministry of Natural Resources and the Environment, Government of Belize

Bardalez, W. 2009. Former Forester with the Forest Department. Personal communication.

Belize Biodiversity Clearing House Mechanism Hope Page. 2009. Available online at http://www.chm.org.bz/. Consulted 19 November 2009.

BERDS (Biodiversity & Environmental Resource Data System of Belize). 2009. Available online at http://www.biodiversity.bz/belize/, Consulted 3 November 2009.

Belize National Protected Areas Policy and Sytem Plan. 2005. Forest Department. Ministry of Natural Resources and the Environment.

Boom Creek Logging Association. 2009. Personal communication.

Carrera, F. *et al*. 2002. Concesiones Forestales Comunitarias en la Reserva Biosfera Maya, Peten, Guatemala, in Symposio Internacional da IUFRO, Manejo Integrado de Florestas Umidas Neotropicais por Industrias e Comunidades: Aplicando resultados de pesquisa, envolviendo atores e definindo políticas publicas. Sabogal, C. y Macedo Silva, J.N., Ministerio da Agricultura, Pecuaria, e Abastecimiento, Republica Federativa do Brasil.

Carrera, J.R. 2001. Evaluacion de indicadores para el monitoreo de condiciones forestales en Peten, Guatemala. MSc. Thesis. Turrialba, CR, CATIE. 175 p.

Chambers, R. and Conway, G., 1992. Sustainable Rural Livelihoods: Practical Concepts for the 21st Century, in The Sustainable Livelihoods Approach to Poverty: An Introduction, Krantz, L., 2001, Swedish International Development Cooperation Agency, Division for Policy and Socio-economic Analysis.

Center for International Forestry Research (CIFOR). 1999. The CIFOR criteria and indicators generic template. Jakarta, Indonesia. 53 p.

Cho, J. The Maya Atlas Website. 1997. Consulted 23 September 2008. Available online at: http://geography.berkeley.edu/ProjectsResources/MayanAtlas/MayaAtlas/mayahome.htm. Consulted on 21 November 2009.

Cho, P. 2009. Boom Creek and Sundaywood forest inventories, personal communication.

Choc, G. 2009. SATIIM Power Point Presentation on community forest management in Conejo and Santa Teresa Villages, Toledo.

Colfer, C.J., *et al*., Who Counts Most? Assessing Human Well-being in Sustainable Forest Management, #8-The Criteria and Indicators Toolbox Series, CIFOR.

Conteh, A.O. Justice. 2007. Judgment on Consolidated Claims 171 and 172, Maya Rights. Supreme Court of Belize.

de Camino, R. 2008. Hacia una agenda para el manejo forestal sostenible. Power Point Presentation. Curso manejo forestal. Catedra Latinoamerica gestión forestal del territorio.

_____. 2008. Forest Management: a potential pillar of sustainable development.

_____. Breitling, J. 2007. El Cambio es Posible: 20 Anos de Experiencias Innovadoras en los Recursos Naturales en Guatemala. ALIANZA de Aprendizaje Para La Conservacion de la Biodiversidad en el Tropico Americano. Universidad Para La Paz, Cuidad Colon, Costa Rica.

Emery, M. *et al*. 2006. Using community capitals to develop assets for positive community change. In CD Practice. Promoting Principles of Good Practice. Issue no. 13. Western Illinois University. 19 pp.

Flora, C.B., *et al*., Community Capitals: A Tool For Evaluating Strategic Interventions and Projects, North Central Regional Center for Rural Development, Iowa State University.

Forest Department. 2009. Forest Department Forest License Database. Forest Department, Ministry of Natural Resources and the Environment. Belize.

Forest Management Plan of Conejo Village. 2008. Conejo Village, Toledo, Belize. Unpublished.

Forest Policy of British Honduras. 1954. Belize Forest Department.

Forest Stewardship Council. 2002. FSC international standard: FSC principles and criteria for forest stewardship.

Higman, S. *et al*. 2005. The sustainable forestry handbook. Second Edition. London, United Kingdom. Earthscan. 332 p.

Hutchinson, T. L. 2006. Toledo Strategy and Action Plan 2006-2009. Toledo Development Corporatio. Ministry of National Development, Investment and Culture. Government of Belize. 56 p.

Institute of Governance website. Available online at: http://www.iog.ca/ Consulted 20 October, 2009.

IUCN. 1997. Report expert meeting on criteria and indicators for sustainable forest management: Tegucigalpa, Honduras, January 20-24, 1997. San Jose, Costa Rica. 39p.

Krantz, L. 2001. The Sustainable Livelihoods Approach to Poverty: An Introduction. Swedish International Development Cooperation Agency. Division for Policy and Socio- economic Analysis.

Lammerts van Beuren, E. and Blom, E. 1999. Hierchacical framework for the formulation of sustainable forest management standards. The Tropenbos Foundation. Wageningen, The Netherlands. 95 p.

Linarez, V. 2009. SATIIM Consultant. Personal communication.

Makin, J. Chairman. Conejo Creek Village, Toledo District, Belize. 2009. Personal Communication.

Meerman, J.C. and Wilson, J.R. 2008. Monitoring and Evaluation of Long-term licenses in Belize.

Meerman, J. and W. Sabido. 2001. Central American Ecosystems: Belize. Programme for Belize, Belize City. 2 volumes 50 + 88 pp.

Moralez, J. Chairman, Boom Creek Village, Toledo District Belize. Personal communication.

Moran Montano, M. 2005. Evaluacion de la sustentabilidad del manejo forestall comunitario para identificar prioridades de inversion en ejidos de Mexico. MSc Thesis.. Turrialba, CR, CATIE. 207 p.

National Human Development Advisory Committee. 2002. Belize Poverty Assessment Report. Central Statistical Office. Government of Belize.

Ostrom, E. Governing the Commons: 2003. The Evolution of Institutions for Collective Action.

Pedroni, L. and de Camino, R. Un marco logico para la formulacion de estandares de manejo forestal sostenible. Proyecto TRANSFORMA. 34 p.

Pretzsch (2003) and Person (2003) in de Camino, R. 2008. Forest Management: a potential pillar of sustainable development

Prins, C. 2008. Notes of Class of SA-508: Rural Development with focus on Institutional and Territorial Development. CATIE

_____. 2005. Desde el accesso libre de los recursos forestales a su aprovechamiento regulado: El caso de las Conceciones Forestales Comunitarias en el Peten, Guatemala. In Procesos de Innovacion Rural en America Central: Reflexiones y aprendizajes. CATIE, Turrialba.Costa Rica.

Rainforest Alliance. 2008. Ponencia: VIII Congreso Forestal Nacional, "Modelo Regional Forestal Sostenible Para Optimizar El Valor Económico Total Del Bosque" Guatemala.

Rax Mu Qiche Logging Group. 2009. Conejo Village, Toledo District, Belize. Personal communication.

Ritchie, B. *et al*. 2000. Criteria and indicators of sustainability in community managed forest landscapes: an introductory guide. CIFOR. Bogor, Indonesia. 104 p.

Ros-Tonen, M. *et al*. 2005. Partnerships in Sustainable forest resource management: learning from Latin America. Amsterdam, The Netherlands. CEDLA Latin American Studies. Volume 94. 329p.

Sabido, W. 2009. Chief Forest Officer, Forest Department, Ministry of Natural Resources, Belize. Personal communication.

Sabogal, C. 2008. Manejo forestal comunitario en America Latina: Experiencias, lecciones aprendidas y retos para el futuro. Cesar Sabogal, Wil de Jong, Benno Pokorny, and Bastiaan Louman (editors). Bogor, Indonesia. Center for International Forestry Research (CIFOR).

Salas, O. and Santos, T. 2009. A mechanism for integrating community co-management of forest reserves with local communities in national forest policy. 32 p. Unpublished.

Scoones, I. 1998. Sustainable rural livelihoods: a framework for analysis. IDS working paper 72.

Soto V. 2008. Gobernanza Forestal, Power Point Presentation, Module 4, Class of Policy and Governance of Natural Resources, CATIE, available online at: http://intranet.catie.ac.cr/intranet/

Statistical Institute of Belize. 2008. Abstract of Statistics: Belize.

Statistical Institute of Belize. 2007. Know your stats: Belize

Torres, J.C. 2008. Analisis de la pontencialidad para el manejo forestal comunitario en comunidades Kichwas de la provincial de Orellana-Ecuador. MSc. Thesis. Turrialba, CR, CATIE. 198 p.

Tush, M., 1st Alcalde, Sundaywood Village, Toledo District, Belize. 2009. Personal Communication.

United Nations Conference on Environment and Development (UNCED). 1992. Agenda 21: Program of Action for Sustainable Development: Rio Declaration on Environment and Development . Washington D.C. United Nations.

UN-REDD homepage. Available online at http://www.undp.org/mdtf/UN-REDD/overview.shtml. Consulted on 19 November 2009.

Wollenberg, E., et. al. 2000. Anticipating change: scenarios as a tool for adaptive forest management. A guide. CIFOR. Bogor, Indonesia. 38 p.

World Bank. 2004. Sustaining forests: A development strategy. Washington D.C. The World Bank.

ANNEXES

Annex 1: Forest Policy of British Honduras

The following Forest Policy of the Government of British Honduras as approved by the Governor in Council is published for general information:

The Forest Policy of the Government of British Honduras is:

1. To establish, preserve for all time and develop a Crown Lands Forest Estate consisting of areas of Crown Land in any of the following categories:

    a. land unsuitable for permanent agriculture but supporting or capable of supporting forest.
    b. land capable of producing a greater sustained financial return, if retained or developed as forest than if used for other purposes.
    c. land which is best kept or put under forest for the better protection of watersheds, catchment areas, drainage basins, steep hill slopes and for the prevention of erosion, the control of run-off, the regulation of steam-flow and the stabilization of the climate.
    d. areas which are required for the production of fuelwood for use in towns and villages or by local industries, or for the production of rough building and fencing materials for local use.
    e. areas which from time to time may be set aside as nature reserves.

2. In order to establish the Forest Estate, to survey, demarcate, and constitute as Forest Reserves by proclamation, all Crown Land areas described in paragraph 1 above. Forest Reserves once constituted will only be dereserved wholly or in part by the Governor in Council as a result of some over-riding public necessity.

3. In order to preserve the Forest Estate, to maintain demarcated boundaries by clearing of traces and maintenance of boundary marks as may be necessary to afford protection to the forests from fire, animals, insect pests of diseases, trespass and illicit felling, removal of or damage to forest produce, by such measures including legislation as the Government may deem advisable and practicable; and to place all exploitable surveys, and calculation of increment or other practicable methods of yield control of exploitation, and by natural or artificial regeneration and tending operations, so that their yield of timber and other forest produce will be maintained in perpetuity.

4. In order to develop the Forest Estate, and thus ensure an adequate and increasing supply of timber and other forest produce at a reasonable price to the people, industries and timber trade of British Honduras, and for export; to establish intensive regeneration centres in selected forest reserves. At these regeneration centres, the aim will be to create fully stocked forests or plantations of mahogany, cedar, pine or other species including exotics by artificial

or intensively assisted natural regeneration over areas adequate to supply in perpetuity a sawmill or processing plant of economic size at or near each centre.

5. To increase production from Forest Reserves by ensuring full utilization of prime hardwoods and pine, and encouraging the use of secondary hardwoods and other forest produce; by developing local and export markets for small dimension stock of prime hardwoods and pine; for secondary hardwoods and other forest produce; by exploring the possibilities of other forms of Forest utilization, for example for paper pulp.

6. To raise the quality of sawn lumber exported to world markets by the institution of Timber grading, the encouragement of seasoning and of accurate sawing and machining to specification, in order to achieve assured markets for British Honduras timber abroad.

7. To promote the practice of forestry on freehold lands, by the control of felling of mahogany, cedar and such other species as the Government may deem advisable, by the inspection and marking for felling of trees of these species to specified minimum girth limits; encouraging and assisting landowners to draw up and implement simple working plans for the sustained yield management on approved lines of their forest land in the categories described in 1 a, b, c and d above; and by encouraging and assisting afforestation on private lands.

8. To control the exploitation of forests and forest produce growing outside Forest Reserves on Crown Land not yet taken up for Agriculture by the issue of Forest produce licenses framed in such a way that these forests, which are a wasting asset on land allocated to agriculture, will continue to augment the yield form Forest reserves for as long as time as possible during the period when Forest reserves are being brought up to full production.

9. To bring about an increased appreciation of the need for and aims of forest conservation amongst the general public by propaganda over the British Honduras Broadcasting Station, and to the schools.

10. To maintain a Forest Department of sufficient strength and supplied with sufficient funds to carry out the Forest policy set forth in 1 to 9 above; supported by an adequate research programme; and to staff the Forest Department with personnel recruited locally so far as possible and trained at established University schools of Forestry, or at Forester training schools, or locally, as may be appropriate to the different grades.

Dated this 28th day October, 1954.

By Command,

P. M. Renison T. D. Vickers

Governor Colonial Secretary

Annex 2: SFM survey instrument

SURVEY OF PERFORMANCE IN SUSTAINABLE FOREST MANAGEMENT IN BELIZE

Good day, my name is Tanya Santos. I am a graduate student in Environmental Socio-economics at Centro Agronomico Tropical de Investigacion y Ensenanza (CATIE) in Costa Rica, and I am currently undertaking field work for collection of data for a thesis. As a part of the field work I am conducting interviews with stakeholders in forest management. The objective of the interview is to evaluate Belize's performance in forest management and provide an evaluation of the readiness/preparedness of the forest sector in Belize to fully engage in community forest management initiatives. The interview utilizes a comprehensive set of standards for sustainable forest management. The standard utilized was developed on the basis of 8 regional and internationally accepted standards of sustainable forest management, adapted to the local situation. The results of the interviews will help to determine the perceived implementation status of sustainable forest management, and the current atmosphere for community forest management in Belize.

If you agree to complete the survey, please fill out the following sections as per sector you represent, your familiarity with forest management and your level of involvement in forest management. Please score only the indicators on the evaluation sheet as per score-sheet below. If you have any questions please feel free to call me at 623-5286 or email me at tanyasantos76@hotmail.com. Many thanks for your participation.

Sector

Government ___ NGO ___ Private ___ Community ___ Other ___

Familiarity with forest management in Belize

Very familiar ___ Somewhat familiar ___ Not familiar ___

Level of involvement in forest management activities

Full ___ Partial ___ Limited___ None___

SCORING

Value	Description
1	Insufficient information (not enough information to evaluate)
2	Poor (not satisfactory, very weak or deficient)
3	Fair (acceptable but there is much room for improvement)
4	Good (there is some room for improvement)
	Very good (outstanding)

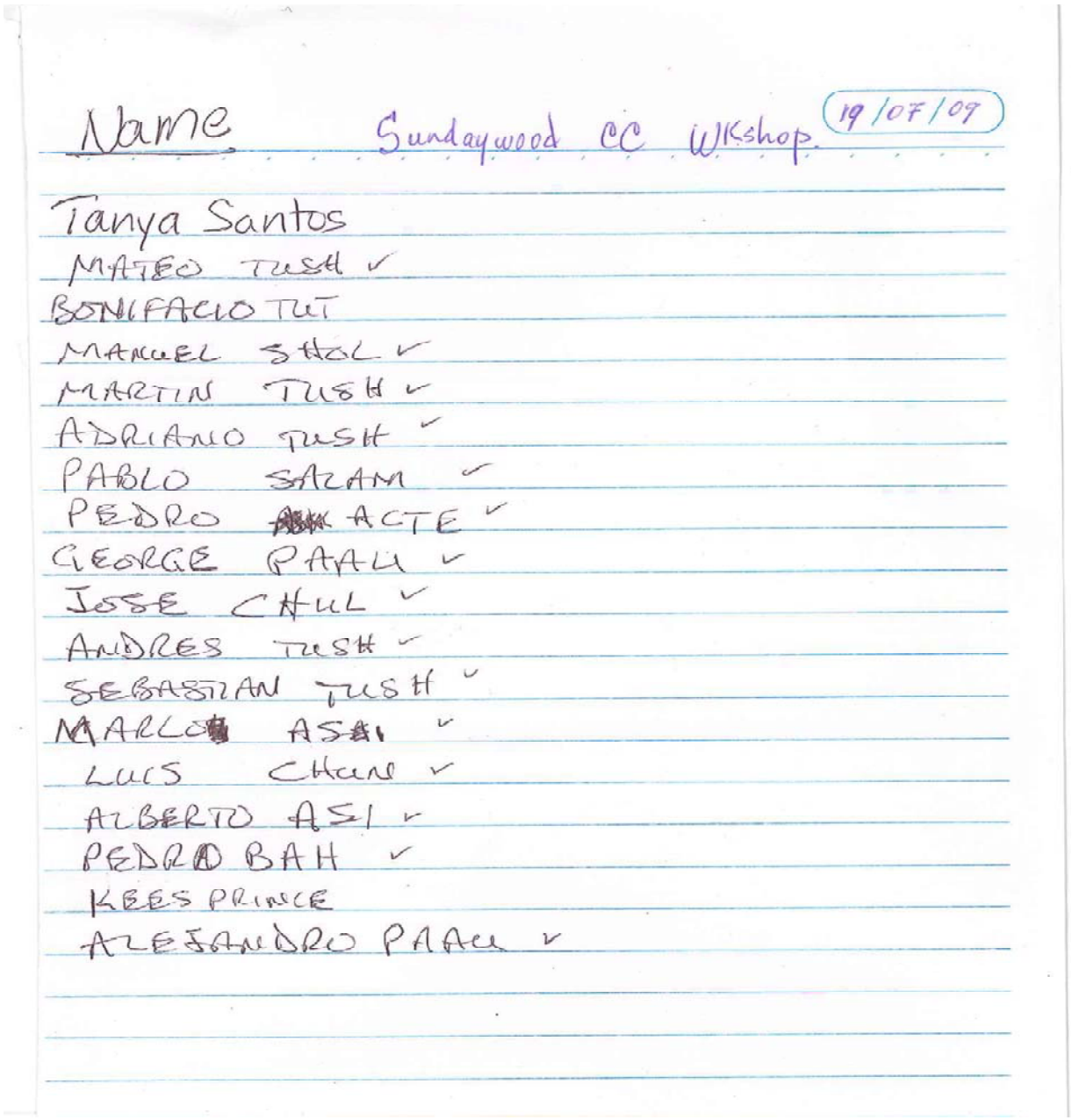
INSTITUTIONAL DIMENSION		
PRINCIPLE 1:	**THE INSTITUTIONAL FRAMEWORK SUPPORTS SUSTAINABLE FOREST MANAGEMENT**	
Criterion 1.1 The national policies, plans and legal instruments support sustainable forest management		
Indicator 1.1.1	The legal and policy framework enables equitable access to the forests and its resources	
Indicator 1.1.2	Non-forestry policies and legislation do not act as disincentives to SFM	
Indicator 1.1.3	SFM is compatible with and incorporated into national development goals	
Indicator 1.1.4	There is recognition of the relationship between well-managed forests and poverty alleviation	
Indicator 1.1.5	The forest component is included in rural development projects	
Indicator 1.1.6	Land use policy and planning provides guidance for land use and development	
Indicator 1.1.7	Procedures and processes for legitimizing forest activities are not excessively bureaucratic	
Indicator 1.1.8	Related resource management policies are harmonized with SFM policies	
Indicator 1.1.9	There is no negative political interference in forest management activities	
Criterion 1.2 Information that promotes SFM is generated, disseminated and readily available		
Indicator 1.2.1	An adequate, accessible forest information management system exists	
Indicator 1.2.2	The institutions carry out research to support SFM	
Indicator 1.2.3	An effective environmental (forest) education and training program is in place	
Indicator 1.2.4	Traditional knowledge is documented and utilized	
Indicator 1.2.5	Effective vertical and horizontal communication among stakeholders exists	
Criterion 1.3 Institutional capacities exist for SFM		
Indicator 1.3.1	The forest sector is comprised of a sufficient number of professionals/technicians/workers trained in the various aspects of forest management	
Indicator 1.3.2	Local opportunities exist for training in forest management	
Indicator 1.3.3	Local communities possess technical capacities to implement forest management activities	
Indicator 1.3.4	Law enforcement actions are effective in reducing illegal forest activities	
Indicator 1.3.5	The regulatory bodies in the forest sector are adequately equipped (staff, equipment, vehicles) to provide support to SFM	

Indicator 1.3.6	Mechanisms for conflict resolution in forest use and management exist and are utilized when required	
Indicator 1.3.7	Stakeholders participate in exchange programs to share and implement new knowledge	
Criterion 1.4 Economic conditions promote SFM		
Indicator 1.4.1	Economic incentives for SFM exist	
Indicator 1.4.2	Sustained and adequate financing mechanisms for SFM exists and are accessible	
Indicator 1.4.3	There is national recognition of the economic value of the environmental services produced by forests	
Indicator 1.4.4	There is stakeholder willingness to pay for the continued management of ecosystem functions to ensure the continued supply of forest goods and services	
Indicator 1.4.5	There is knowledge of and access to markets for forest goods and services	
Indicator 1.4.6	Efforts are made to compensate private forest owners for the provision of forest services	
SOCIO-ECONOMIC DIMENSION		
PRINCIPLE 2:	**THE MANAGEMENT OF FOREST RESOURCES GENERATES LOCAL BENEFITS**	
Criterion 2.1	***Local people link their own and their children's future with the management of forest resources***	
Indicator 2.1.1 the	Local people's dependence (reliance) on and/or interaction with forest form(s) part of their livelihood strategies	
Indicator 2.1.2 and	Local people are knowledgeable and appreciative of the goods services provided by forests	
Indicator 2.1.3	The relationship between the forest, culture, health and well-being is recognized and respected	
Indicator 2.1.4	Local actions are taken to ensure the protection and conservation of forest resources	
Indicator 2.1.5	Common, harmonized vision/goals for forest management and community development exist	
Criterion 2.2 Local actors and communities have acknowledged rights and means to manage forests		
Indicator 2.2.1	Local and indigenous rights and customs are acknowledged and respected	
Indicator 2.2.2	Land tenure is clearly defined and legislated	
Indicator 2.2.3	Local actors participate in a meaningful way in the formulation of forest policies	
Indicator 2.2.4	Local women participate actively in forest management activities and decisions	
Indicator 2.2.5	Local actors possess the interest and the capacity to engage in sustainable forest management activities	
Indicator 2.2.6	Local rules for the use of and access to forest resources exist	
Indicator 2.2.7	The role/participation of NGOs and civil society in mentoring	

Indicator 2.2.7	The role/participation of NGOs and civil society in mentoring local stakeholders in forest management is adequate and effective	
Indicator 2.2.8	The forest authority and the government are accommodating to and supportive of communities interested/involved in SFM (positive attitude)	
Criterion 2.3	***Local actors and communities have a reasonable share in economic benefits from forest management activities***	
Indicator 2.3.1	Mechanisms for benefit sharing exist and are seen as equitable by all actors	
Indicator 2.3.2	Equitable employment and training opportunities exist from carrying out forest management activities	
Indicator 2.3.3	Workers rights conform to national and/or ILO standards	
Indicator 2.3.4	Educational opportunities exist for local children/people	
Indicator 2.3.5	Priority of resource access is given to local actors	
Indicator 2.3.6	Level of conflict is acceptable to all stakeholders	
	ENVIRONMENTAL DIMENSION	
PRINCIPLE 3:	**FOREST MANAGEMENT MAINTAINS ECOSYSTEM INTEGRITY**	
Criterion 3.1	***The forest landscape is maintained***	
Indicator 3.1.1	Forest cover is maintained or increased	
Indicator 3.1.2	There is no evidence of unauthorized change in land use	
Indicator 3.1.3	Degraded and impacted forests are rehabilitated	
Criterion 3.2	***Measures are taken to reduce disasters from fire, diseases and contamination***	
Indicator 3.2.1	Measures taken to prevent, control and combat forest fires are effective	
Indicator 3.2.2	Measures taken to prevent and control diseases are effective	
Indicator 3.2.3	Measures taken to prevent contamination of the forest are effective	
Indicator 3.2.4	Other resource uses do not conflict with the objectives of sustainable forest management (e.g. petroleum mining, agricultural activities)	
Criteria 3.3	***Ecosystem functions are maintained***	
Indicator 3.3.1	High conservation value areas are known and protected	
Indicator 3.3.2	Water quality and quantity is maintained	
Indicator 3.3.3	Measures are taken to minimize impacts on aquatic systems	
Indicator 3.3.4	Measures are taken to minimize erosion and soil degradation	
Criterion 3.4	***Biological diversity is maintained***	
Indicator 3.4.1	Wildlife habitats are maintained within acceptable limits	
Indicator 3.4.2	Measures are taken to protect rare and endangered species	
Indicator 3.4.3	Forest management activities contribute to the biological corridors on the landscape	
Indicator 3.4.4	The introduction of exotic species is kept at a minimum	

PRODUCTION DIMENSION		
PRINCIPLE 4:	**FOREST PRODUCTIVITY PERMITS THE MANAGEMENT AND SUSTAINABLE MULTIPLE USE OF THE FOREST RESOURCES FOR THE LONG TERM**	
Criterion 4.1	***The quality and quantity of forest resources are adequate for sustainable forest management***	
Indicator 4.1.1	An inventory of forest resources exists and that the inventory technique is technically sound	
Indicator 4.1.2	Timber and non-timber forest products exist in quantities and qualities adequate for sustainable management	
Indicator 4.1.3	The rate of harvesting of forest products does not exceed forest productivity	
Criterion 4.2	***The infrastructure is conducive to undertake forest management activities***	
Indicator 4.2.1	Road networks are adequate and maintained to allow accessibility for forest management activities	
Indicator 4.2.2	Timber harvesting and processing equipment is available to undertake forest management activities	
Indicators 4.2.3	Means of transportation, communication, supply of water and energy is available to undertake forest management activities	
Indicator 4.2.4	Office space is available for writing, planning, logisitics, meetings etc.	
Criterion 4.3	***Forest management activities are guided by a comprehensive forest management plan***	
Indicator 4.3.1	A comprehensive (implementable and adaptable) forest management plan exists and is adhered to	
Indicator 4.3.2	The management plan is periodically reviewed	
Indicator 4.3.3	Planning and management takes place with the appropriate involvement of stakeholders	
Indicator 4.3.4	Techniques for reduced impact logging are utilized	
Indicator 4.3.5	Periodic compliance monitoring and performance evaluations are conducted	
Indicator 4.3.6	Processing methods of forest products are adequate and efficient	
Indicator 4.3.7	Environmental impact assessments are incorporated in management plan	
Criterion 4.4	***Sustainable forest management activities are profitable***	
Indicator 4.4.1	Economic feasibility of forest management is determined prior to initiating forest management activities	
Indicator 4.4.2	Comparison of profitability of forest management activities with alternative investments is determined	
Indicator 4.4.3	Reliable accounting systems exist and are utilized	
Indicator 4.4.4	Annual financial reports are presented to relevant stakeholders (for transparency)	

Annex 3: List of Sundaywood Workshop Participants



Name Sundaywood CC Wkshop 19/07/09

Tanya Santos
MATEO TUSH ✓
BONIFACIO TUT
MANUEL STOL ✓
MARTIN TUSH ✓
ADRIANO TUSH ✓
PABLO SAZAM ✓
PEDRO [redacted] ACTE ✓
GEORGE PAAU ✓
JOSE CHUL ✓
ANDRES TUSH ✓
SEBASTIAN TUSH ✓
MARCO [redacted] ASAI ✓
LUIS CHANG ✓
ALBERTO ASI ✓
PEDRO BAH ✓
KEES PRINCE
ALEJANDRO PAAU ✓

Annex 4: Boom Creek list of workshop participants

TOLEDO HEALTHY FOREST INITIATIVE
2nd JULY, 2009
ATTENDANCE SHEET
Boom Creek

NAME	POSITION
1. Jairo Moralez	Chairman.
2. Bruce Mishler	Farmer
3. + Jacob Ixim.	
4. Santo Saqui	
5. Wilfred Murchando	
6. Augusta Sanchez	
7. Valineto Sanchez	
8. Pedro Coc	Chairman Logging Assoc.
9. Luis Lazarro	
10. Milton Coc	
11. Israel Sanchez.	Alcalde
12. Adalberto Ro	Farmer
13. Christina Sanchez	
14. Bartolo Tesul	THFI
16.	
17.	
18.	
19.	
20.	
21.	
22.	
23.	

Annex 5: Stakeholder workshop list of participants

	Member	Organization/ Ministry/ Community	Contact Information	Email
1	BARTOLO TEUL	THFI (CAMAXCHE)	667-5325 722-0108	acolmanager@gmail.com
2	Pablo Salam	medina Bank village	664 7624	
3	Francisco Ack	Santa Teresa		
4	~~Julian R. Ak~~	Sta Teresa	—	
5	John Mckin	conejo Village	603-0772	
6	Domingo McKin	"		
7	Dale Gomez	Thomas Gomez & sons	603078°	
8	Pablo salam	Sunday wood		
9	mateo Tusa	Sunday Wood		
10	Lenney Gentle	F.C.D./CMP.	823-2657	lenneyg@hotmail.com / F.c.d@bh.net
11	Natalie Rocado	TNC	822-0274	nrocado@tnc.org.
12	Lizorio Coy	Santa Anna	664-3000	TA.A Gmail.Com
13	Tanya Marsden	PCPU, MNRE	822-2630 ext 80445	pcpu.mnre@gmail.com
14	Yvette Alamo	APAMO	227-5746	apamo@btlbelize.org.
15	PHILIP BACKERMAN	GEF/SGP	822-2462	GEASGP@BTL.NET
16	Wilber Sabido	FD	822-2079	fdbelize@gmail.com.
17	Jorge Hanson	FD	668-4315 822-1524	bzgeohan66@Yahoo.Com

	Member	Organization/ Ministry/ Community	Contact Information	Email
18	Rasheda Sampson	Forest Department	822-1524	wildlife_fd@hotmail.com
19	Hannah Martinez	Forest Dept	822-1524	nationalparks@mnrei.gov.bz
20	Lizandro Quiroz	/	/	
21	Carlos G. Santos	IDEAS	670-5501	itsmedca@btl.net
22	WENDELL PERUM	CONSULTANT	605 2979	[illegible]
23	RAMON PACHECO	PfB	227-5616	techcoordinator@pfbelize.org
24	Tanya Santos	CATIE		tanyasantos76@hotmail.com
25	Manuel Ical	Sunday Wood		
26	Roberto Harrison	BELTRAIDE	822-3737	roberto@belizeinvest.org.bz
27	Earl Green	Consultant	804-600-2622	greenideas@btl.net
28	Israel Sanchez		709-2012	
29	[illegible]	-	709-2012	-
30	[illegible] CoC			
31	Gregory Choc	SATIIM	722-0103	gjchoc@btl.net
32	Leroy Lisbey	FD	824-3280	leroylisbey@yahoo.com.
33	Raul Chun	Forest Dept	822-1524	sonychun74@yahoo.com.
34	Ixel Zuniga	SLM	822-2887	SIMPROJECT.BZE@gmail.COM

	Member	Organization/ Ministry/ Community	Contact Information	Email
36	Jeudene Tingling	FD	822-2787 822-1524	jbtingling@hotmail.com
36	Melanie Smith		604-7924	melsociology@yahoo.com
37	Eugene Polanco	M/Local Govt	822-3990	secretary@lab.mw.gov.bz
38	Darnel Andrewetto	PACT	8223637	training@pactbelize.org
39	Anselmo Certavich	ENVIC	671-1935	envicpat@gmail.com
40	Anisa Santos	-	822-2101	anisaannicolesantos@hotmail.com
41	Hilbert Lopez	NAVCO	822-0283	navcobelize@gmail.com
42	Orlando Dawson	NACO. PRES.	822 0253.	
43	MARCELO WINDSOR	FD	822 1524	windsorbelize@yahoo.com.
44	Peraval Cho	FD	822 1524	fcpm@minrei.gov.bz
45	PATRICIA TATE	MAF	822-2241/42	ptate@agriculture.gov.bz

Annex 6: Stakeholder workshop plenary comments

Some Plenary Comments at Community Forestry Workshop
16th September 2009
Belmopan Hotel, Belmopan

Q: Should the community mechanize its operations?

Q: Is there some sort of policy decision whereby communities can become involved in LTFL and to what extent is this being contemplated under the judgment?

A: The community would like to mechanize but no resources available. That is the reason opted to use chainsaw. The community could procure for machinery for yr 3 and 4 later on in the project. Based on the amount harvested the people hauling lumber from site to village employs 30 to 40 persons.

A: CFO – Current plan of using chainsaw is low impact. Much is needed for investing in skidder, using of chainsaw. Chainsaw policy is being reviewed. Currently only for personal use but being reconsidered for 1. conversion for personal use, 2. community based forestry purposes, 3. in normal licenses conditions where topography does not allow access to the area.

A: CFO: is there a policy decision that suggests community license. There is none but we see there is the need to include communities in long term licenses.

Q: NAVCO - what have been done to assist farmers.

A: Greg: most of the members in the group are also farmers and are benifiting.

A: Tanya: this is a policy issue, Land use issues need to be addressed at the policy level for meaningful change.

A: Bartolo – we need to look at integrated management; we mostly focus on agriculture. Boom Creek has livestock also, so successful forest management will form part of better land uses. We need to make land use more intensive than extensive. Better practices in the areas we have than expanding into other areas.

Q: Participatory forest management? How can we bring the process of forest management so that they can know what we know. Are we bringing proper forest management techniques to community? Can't we learn from what they have? A marriage of these two needs to happen.

Comment: Greg: The Supreme Court judgment is not being implemented by the government. By not acknowledging this process, the merit of the initiative by the community is lost. Conejo and Santa Teresa could do milpa farming, but they are doing sustainable land use through sustainable forestry, but no merit is being given to them.

Comment: Hanson: All sectors need to come together to support this initiative and start implementing.

Comment: Eugene: Communities should have a more holistic view, more holistic approach especially in woodwork. Need to look within their community and ask what kind of development can be done with what they have, how they can utilize their resources wisely.

Comment: Not until the government does something to convince that everybody depends on our biodiversity will things will change. There needs to be a change in thinking at the Minister level.

Comment: NAVCO – I should be about changing of policy and bringing stakeholders into the planning, rather than sitting down and making policy in Belmopan. We should ask what can be done to complement the work already started in the communities.

Q: Who should drive policy? Should the people sit and wait if a government minister does not do anything? If the people decide to mobilize then the government will listen. The community and local people should drive policy.

Comment: Anything done politically is short term. When it is done by a community it is long term. Let's look at more community participation in decision making.

Comment: Parham – need to look at what are requirements for community. What are the weaknesses in the system to manage the forest? What is now needed? There will be funding agencies to strengthen, try to suggest these actions to strengthen these components.

Comment: Santa Theresa – should be able to have the use of the resources, meet with other agencies that would be willing to help them.

Comment: Bartolo – Tanya's work and research can and ought to be used in the resources management. We all need to step up to the plate, to come to the trainings and

meetings. The alcaldes have always been taken for a ride because they have always been complacent.

Annex 7: Livelihoods interview report – Conejo Village (conducted by Wayne Bardalez)

INTERVIEW WITH LOGGING GROUP / VILLAGE COUNCIL

The discussion was done at the SATIM Resource Center on Saturday August 29th 2009.

Fifteen of the twenty two members were in attendance. These were representative of the Logging Group and the Village Council. The interviewer was warmly welcomed by the Chairman of the Village. The reason of the mission was explained and the group was happy to participate.

The discussion centered around the around the forest, its uses ,its benefits and what is the future of this forest. It was noted that in this village this group have a direct relationship with this forest as this supplies them with most if not all of their basic needs for survival. These people would very seldom leave their village to seek employment as the cost of living outside is far too high compared to their village. They plant most of what eat and sells the rest of their seasonal crops like beans corn and rice in town. This would provide enough financial returns for their whatever they cannot produce or extract from the forest. Some of this would include oil, soap, candles, matches, embroidery cloth and string for crafts among others. While at times it can be looked like they take the forest for granted the use of it by other villages and other outsiders warrants the permission of the local authorities at all times.

On the Forest management part the group have shown a keen interest to make their logging operation as successful as one could be. I sense that know that with the regulations they will have to abide by their lumber production will not last for a complete year. What was impressive though that this was Ok for them as they also need time to take care of their plantation and other village needs. Their experiences and skills indicates their limited knowledge but their interest in training signifies that they are willing to learn to be successful.

During the interviews their skills and experiences they have was a bit confusing to them . After discussion I listed in the sections how I believe they actually understand. They don't

reasonably understand that in Forest Management that experience is gained and skills are acquired. So as not to confuse them I listed as they thought.

The interview will assist to show their responses

Even though an interpreter had to be used I believe that this was successful meeting as the participants very cooperative and attentive.

Interview with logging groups/village councils
Conejo Village

Part I: The forest and livelihoods

What is the population of the village? Approximately 200

About how many families are in the village? 31

What kind of work (employment) do most of the villagers do? Farming

Is it mostly the men who work or do women also work (employment)? All Men

Does the forest near the community provide anything that you use in the home? Yes

If yes, please indicate which goods and their use (e.g. herbs for medicinal purposes, animals for meat, material for craftwork, water for drinking etc. Please be specific.)

Forest Resource	**Use**
Animals	Meat, Skin, Pets
Trees	Lumber, Leaves tie-tie (string)and sticks for bush houses
Food	Animal (Meat) and Plants (Cabbage from Palms)

NTFP	Material for handicrafts
Herbs shrubs and Trees	Medicine
Creeks	Water for drinking cooking bathing washing and fishing.
The Air	Oxygen for breathing

How often do you utilize the forest? This question was answered by all members as seasonal. It is being used for the planting of rice and corn and beans. These crops would last between 3 and 4 months. Things like ground food and banana and plantain and other subsistence food is planted seasonally also. My opinion is that farmers uses the forest all year round but they do not actually see it like at that. Because they use it periodically for different crops this group believe its seasonal which would then be quarterly. My opinion is they use it 50 % directly and 50% indirectly. So I would say they use it daily

Do you earn money from the forest ? Fifteen attended the interview. 14 said yes 1 said no

Does the forest provide a steady income for your home? No

If not, how often does the family earn an income from the forest?

One said never 14 said quarterly bi-annually annually

What other activities provide an income for the home? (e.g. farming, teaching, work in town etc.) Farming

What percent of the home income would you say the forest provides?

____less than 25% ___25-50% ___more than 50%

The entire group believes more than 50%

About how much do you earn from the forest activities (logging, hunting, etc.) (can be monthly, annually etc.)

It ranges between one and two thousand dollars per annum. But bear in mind that 90 % of this income is from agricultural seasonal practices of rice corn and beans. This will change now as lumber production has started.

Part II: Forest management skills

How important do you think it is to protect the forest?

All participants believe it is very important

Why do you think it is important to protect the forest?

It provides oxygen, lumber food water, material for houses. The forest is also sacred to the indigenous people. They also protect it so that their other generations can have it for their use.

Do you think it is something good for your family and the community to manage the forest? Yes

Why? So that the children and grandchildren can have it for their uses and generations.

What do you understand is sustainable forest management? That is protecting the forest the animals and plants so they can have the use of it all the time.

Is there a logging group/association in the village that is willing to sustainably manage the forest? Yes

What is the name of the group? RAX MU QICHE (The Green Shade of the Forest)

How many members are in the group? 22

How many families (households) are represented in the group? 22

Are there any women in the group? No

Why/why not? The women's job is to stay home and take care of the house chores and the children. One member believe that later the women can come to the forest and help but for right now they are not like the Garifuna's where the men say at home and the women go to the farm.

Do the members of the group have any experience in forest management?

Yes

If yes, what experience do they have? Thy do not burn their milpa without making fire passes as this burn the forest down. They do not destroy trees along the river as this would damage the water. They will not fell all the trees for lumber to sell as the wildlife needs some place to live. They know which trees to keep that the animals will get food from. This helps when they need animals for food.

Do the members of the group have any specific skills in forest management?

Yes

If yes, please list specific skills. Members of the group have skills in :

Gathering information for taking the inventory.

Measurement of Trees

Using a compass and Cleaning Lines

Identification of Tees by species

Directional Tree Felling

Preparation of Escape Routes when Felling

Do the members of the group feel that they need other specific training in forest management?

Yes

If yes, please list specific training needs.

More Training on Inventory and Directional Tree Felling and Inventory.

Protection of the Forest from Fires

First Aid for workers in the Forest especially for snake bites.

Do the members of the group know how they can acquire this training?

Yes: They believe SATIM and Forestry can do it.

What other skills/training in forest management do the members of the group feel they need? None they could think of right now.

Annex 8: Livelihoods interview report – Sundaywood Village (conducted by Wayne Bardalez)

The discussion was done at the SATIM Resource Center on Tuesday September1st 2009

Twelve of the thirteen members were in attendance. These were representative of the Logging Group and the Village Council. The reason of the mission was explained and this group was not hesitant to ask if I had any idea when their license was going to be granted.

The discussion was mostly between about five of the participants and myself. The others would participate in their own language with these four and then the four would answer for them. It was made plain outright that they were very dependent on their forest, very possessive and willing do whatever to keep it so they can use it. They are in the same position as Conejo where their forest supplies them with most if not all of their basic needs for survival. A few people would leave the village to seek employment as the cost of living outside is far too high compared to their village. They plant most of what they eat and sells the rest of their seasonal crops like beans corn and rice in town.

On the Forest management part the group have shown interest and would like to do some work but they don't have a license. Like Conejo their experiences and skills indicates their limited knowledge but their interest in training signifies that they are willing to learn once a license is granted.

Interview with logging groups/village councils Sundaywood Village

Part I: The forest and livelihoods

What is the population of the village? 287

About how many families are in the village? 48

What kind of work (employment) do most of the villagers do?

Farming

Is it mostly the men who work or do women also work (employment)?

Yes

Does the forest near the community provide anything that you use in the home?

Yes

If yes, please indicate which goods and their use (e.g. herbs for medicinal purposes, animals for meat, material for craftwork, water for drinking etc. Please be specific.)

Forest Resource	**Use**
Animals	Food, Skin and Pets
Trees	Firewood, Food, material for Houses
Herbs and Shrubs	Medicine
Air	Oxygen
Creeks and Springs	Water for drinking, bathing and washing

How often do you utilize the forest? Daily

___Daily ___Weekly ___Monthly ___Quarterly ___Yearly

Do you earn money from the forest ? Yes

Does the forest provide a steady income for your home? No

If not, how often does the family earn an income from the forest? 60 % Annually

The remaining would earn but on a catch and kill lifestyle basis.

___never ___quarterly ___bi-annually ___annually

What other activities provide an income for the home? (e.g. farming, teaching, work in town etc.) farming, working out in town and other village.

What percent of the home income would you say the forest provides? More than 50%

____less than 25% ___25-50% ___more than 50%

About how much do you earn from the forest activities (logging, hunting, etc.) (can be monthly, annually etc.) 50 % earns between 800 to 1000 dollars per annum. The others do make but not able to give a figure.

Part II: Forest management skills

How important do you think it is to protect the forest? Very Important

___not important ___somewhat important ___very important

Why do you think it is important to protect the forest?

Because this is what provides a life for the village

Do you think it is something good for your family and the community to manage the forest? Yes

Why? We use it for our living and our children will need it when they grow up.

What do you understand is sustainable forest management?

We understand that you use the forest in a proper way and the same time you take care of it.

Is there a logging group/association in the village that is willing to sustainably manage the forest? Yes

What is the name of the group? Emery Group

How many members are in the group? 13

How many families (households) are represented in the group? About 15

Are there any women in the group? No

Why/why not? The women have not showed any interest in this kind of work.

Do the members of the group have any experience in forest management? No

If yes, what experience do they have?

Do the members of the group have any specific skills in forest management?
Yes

If yes, please list specific skills.
Identification of Trees, Line Cutting and Some can use the GPS

Do the members of the group feel that they need other specific training in forest management? Yes

If yes, please list specific training needs.
Inventory, Forest Protection,

Do the members of the group know how they can acquire this training? Yes
The NGO,s and THFI can train them.

What other skills/training in forest management do the members of the group feel they need? None other they can think of.

Annex 9: Livelihoods interview report – Boom Creek Village (conducted by Wayne Bardalez)

This interview was done in the School building. There were 11 people in attendance. This was representative of both the Village Council and the Logging Group. At the beginning of the interview they were of the impression that this was a follow up meeting to update them on the status of a license they applied for some time ago.

In this Village it was clear that they realized that they needed to take care of their of their forest so as to be able to continue doing logging, hunting and fishing. These three are their main interest as this is what keeps them surviving.

The interview went well except for one interruption from one Villager who believed that they were not allowed to cut their logs and that Forestry Department and Government was just doing as they please.

Interview with logging groups/village councils, Boom Creek village

Part I: The forest and livelihoods

What is the population of the village? 120

About how many families are in the village? 16

What kind of work (employment) do most of the villagers do?

Hunting Fishing Logging Farming

Is it mostly the men who work or do women also work (employment)?

Mostly Men: 5% of women would do fishing

Does the forest near the community provide anything that you use in the home?

Yes

If yes, please indicate which goods and their use (e.g. herbs for medicinal purposes, animals for meat, material for craftwork, water for drinking etc. Please be specific.)

Forest Resource	**Use**
Trees	Lumber Sticks and Roofing for Houses.
Animals	Food
Herbs and Bark	Medicine
River	Food and Water for bathing and Washing
Air	For Breathing

How often do you utilize the forest? Daily

___Daily ___Weekly ___Monthly ___Quarterly ___Yearly

Do you earn money from the forest ? yes

Does the forest provide a steady income for your home? Yes (more or Less)

If not, how often does the family earn an income from the forest?

___never ___quarterly ___bi-annually ___annually

What other activities provide an income for the home? (e.g. farming, teaching, work in town etc.)
Teaching and Construction Work

What percent of the home income would you say the forest provides? More than 50%

____less than 25% ___25-50% ___more than 50%

About how much do you earn from the forest activities (logging, hunting, etc.) (can be monthly, annually etc.) About $5,000 t0 $6,000 per annum.

Part II: Forest management skills

How important do you think it is to protect the forest? Very Important

___not important ___somewhat important ___very important

Why do you think it is important to protect the forest? Because that is the source of our living.

Do you think it is something good for your family and the community to manage the forest? Yes

Why? Because we use it to make our living

What do you understand is sustainable forest management? We understand that it is using it to survive and not destroy it. One example they used was logging some and saving some.

Is there a logging group/association in the village that is willing to sustainably manage the forest? Yes

What is the name of the group? Boom Creek Logging Association

How many members are in the group? 8

How many families (households) are represented in the group? 8

Are there any women in the group? No

Why/why not? When the group was formed only men showed up at the meeting. Also note that this village the women ordinarily stay at home.

Do the members of the group have any experience in forest management? No
When you look at 28 you will realize that some of their skills can be considered as experience. But the group insist they have no experience.

If yes, what experience do they have?

Do the members of the group have any specific skills in forest management? Yes

If yes, please list specific skills. These men have skills in identification of trees, Using a GPS, Cutting of Lines, Measurement of Trees, Felling of Trees and some Firefighting Skills. Firefighting skills are limited to getaway fires from Agricultural land.

Do the members of the group feel that they need other specific training in Forest management? Yes

If yes, please list specific training needs. Inventory, Safety Precautions in Directional Felling, Preparation of Management Plans and Annual Plan of Operations.

Do the members of the group know how they can acquire this training? Yes
They believe THFI is supposed to train them.

What other skills/training in forest management do the members of the group feel they need? None immediately

Annex 10: Forest use survey instrument for women of Sundaywood and Conejo. (Interviews were conducted by the Toledo Maya Women's Council)

Forest use interview with women of Conejo and Sundaywood village

1. How old are you?
2. How many children do you have?
3. Do you work outside the home?
4. If yes, where do you work?
5. Do most women in the community stay at home?
6. What are the responsibilities of the women in the home?
7. Does the forest near the community provide anything that you use in the home?
8. If yes, please indicate which goods and their use (e.g. herbs for medicinal purposes, animals for meat, material for craftwork, water for drinking etc. Please be specific.)

Forest Resource	Use

9. How often do you utilize the forest?

   ___Daily ___Weekly ___Monthly ___Quarterly ___Yearly

10. Do you earn money from the forest ?

11. Do the men in the community utilize the forest?

12. What do the men use from the forest? (e.g. trees for lumber, animals for meat)

Forest Resource	Use

13. Do the men earn money from the forest resources they utilize?

14. Does your husband/son (any male in the home) currently earn money from the forest?

15. Does the forest provide a steady income for your home?

16. If not, how often does the family earn an income from the forest?

___never ___quarterly ___bi-annually ___annually

17. What other activities provide an income for the home? (e.g. farming, teaching, work in town etc.)

18. What percent of the home income would you say the forest provides?

____less than 25% ___25-50% ___more than 50%

19. How important do you think it is to protect the forest?

___not important ___somewhat important ___very important

20. Why do you think it is important to protect the forest?

21. Would you support long term sustainable management of the forest by the community?

22. Do you think it is something good for your family and the community?

23. Why?