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National forest policy as a platform for biosphere carbon management: the case of community forestry in Cameroon

Peter A. Minang^{a,*}, Hans Th.A. Bressers^b, Margaret M. Skutsch^c, Michael K. McCall^a

^a International Institute for Geo-Information Science and Earth Observation (ITC), P O Box 6, 7500 AA, Enschede, Netherlands

^b Centre for Clean Technology and Environmental Policy (CSTM), University of Twente, P O Box 217, 7500 AE, Enschede, Netherlands

^c Technology and Sustainable Development (TSD), University of Twente, P O Box 217, 7500 AE, Enschede, Netherlands

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ABSTRACT

Little attention has been given to the development of national policies relevant for the uptake, development and implementation of Clean Development Mechanism (CDM) projects. In this paper we examine the compatibility between forestry and related policy provisions in Cameroon and the CDM provisions for Land Use, Land Use Change and Forestry (LULUCF). For each CDM requirement such as eligibility, additionality, impact assessment and sustainable development, relevant national forestry policy questions are identified. These relevant policy questions are applied to community forestry policy instruments in Cameroon to analyse the likelihood that they can enhance or inhibit the uptake and implementation of biosphere carbon projects. We found that choosing a single crown cover value (from between 10 and 30%) presented a serious dilemma for Cameroon given its diverse vegetation cover. Adopting any single value within this range is unlikely to optimize national carbon management potential. The current forest institutional and regulatory policy framework in Cameroon is inadequate for promoting carbon forestry under current CDM rules. We conclude that national policy in Cameroon would need to recognise the need for and adopt a pro-active approach for biosphere carbon management, engaging in institutional development, integrated planning, project development support and providing adequate regulatory frameworks to enhance sustainable development through CDM projects. The need for CDM/Kyoto capacity building support for proactive national and local policy development is highlighted.

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1. Introduction

Current rules for carbon forestry projects within the Clean Development Mechanism (CDM) of the Kyoto Protocol are the result of a lengthy multilateral negotiation process, yet their implementation is expected at project level in developing countries. The assumption is that national policy will accommodate and mediate between the international and the project levels. This paper is about compatibility between Clean Development Mechanism forestry project provisions

and national policies on land use and land use change forestry. It examines the ways in which extant community forestry policy in Cameroon could support or inhibit the uptake and implementation of carbon forestry as a developing country example. But we begin by considering along what lines a supportive national policy is needed for CDM/Kyoto implementation.

The Kyoto Protocol provides for the use of sinks in developing countries as one way of meeting greenhouse gas reduction targets through the CDM. The CDM is one of three

* Corresponding author. Tel.: +31 53 4874 281; fax: +31 53 4874 575.

E-mail address: minang@itc.nl (P.A. Minang).

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“flexible mechanisms” in the Kyoto Protocol designed to accomplish the objectives of the UNFCCC. It makes provision for investment by industrialised countries and industry in projects related to carbon emissions reduction and carbon sequestration in developing countries. These projects should contribute to sustainable development in developing countries (i.e. Non-Annex 1 countries) while enabling developed countries (i.e. Annex 1 countries with quantified emission reduction targets) to meet the Kyoto emission reduction and quantified emission limitation targets (Article 12.2 of the Kyoto Protocol). Annex 1 countries or other entities would buy carbon credits from CDM projects through multilateral systems such as the World Bank or the European Union.

Biosphere carbon projects are required to meet certain conditions in order to acquire Certified Emission Reductions from the Executive Board of the CDM. Main conditions include *additionality* (mitigation effects with project must be additional to what would have happened without project); *leakage* (project mitigation effects must not be offset by impacts outside the accounting boundary); and *contribution to sustainable development* (to be demonstrated according to host country rules). Certified Emission Reductions represent the emission reduction or sequestration output of a project, and constitute the basis on which payments are made.

The negotiations that arrived at the above-mentioned requirements have been long, expensive and have included little more than one representative from most developing countries at each stage. The modalities deal mainly with issues relating to the carbon accounting, market mechanisms and specific project level-issues. As a result, little attention has been paid to relevant national and sub-national policy in developing countries, which will be required to make carbon management within the CDM a reality. The extent to which policies can support the CDM and how much change or adjustments might be required of policy to enable such support in developing countries is not well known. Two relevant studies have been reported so far (Masripatin, 2005; Michealowa, 2003).

Masripatin (2005) describes Indonesia’s preparation for forestry projects under the CDM. She highlights the creation of a Designated National Authority (DNA) for Indonesia comprising a National Commission made of representatives from nine ministries; a Technical team made of representatives of nine ministries and WWF Indonesia as an NGO representative; and a DNA secretariat. The study also describes a national project approval procedure in which responsibilities are shared between the Ministry of Forestry and the DNA. The Ministry approves and recommends a project following appraisal of a project concept note and local district or municipal recommendation on eligibility of forest based on whether area is conflict free, absence of fires and land ownership conditions. The Ministerial approval must be completed within 30 days of receipt of the project concept note. The DNA will further assess the technical aspects of the project design document. The values for the definition of forest have also been given as, minimum land area of 0.25 ha; 30% crown cover and 5 m tree height. The process for the development of these policy responses entailed the creation of a CDM Working Group in the Ministry of Forestry that facilitated information dissemination, capacity building and policy development; a national

strategy study on the CDM in the forestry sector by the Ministry of Forestry in 2003; and a nationwide forest eligibility for CDM identification using available forestry data in the Ministry.

Michealowa (2003) examines CDM host country institution building requirements including case studies from Morocco, Indonesia and India. He finds an independent CDM office with full approval powers as the optimum institutional option for a DNA. A second best solution would be a two-tiered system. A CDM board with representatives of ministries that would define criteria and priorities whereas a CDM secretariat would evaluate (and possibly approve) project proposals and do outreach and marketing. Small countries could use the existing UNFCCC focal point and flexibly involve consultants if project proposals come in. He also finds that long-term professional staff in these institutions would be an important asset. Organised information exchange and capacity building for actors will increase competence and also investor confidence, while fights between ministries is likely to scare investors.

These studies present interesting dimensions of national policy responses to the current CDM requirements. Though the Indonesia case provides valuable information, it remains largely descriptive. Michaelowa’s study is limited to national institutional questions and the criteria for sustainable development. Policy makers would require a more holistic, systematic and analytical study to be able to develop relevant policy instruments to facilitate terrestrial carbon management. It is to these more holistic and analytical dimensions of the discussion that this paper aims to make a contribution. In-depth policy analysis- down to the small print is presented, demonstrating that such an analysis is necessary for every non-annex 1 country. This Cameroon case does not only show results, but also how such a study can be made.

This paper is structured as follows: Section 2 presents the current CDM forestry requirements and the derived framework for assessing forest policy compatibility to the CDM. Section 3 presents community forestry policy in Cameroon, while Section 4 elaborates the study methods. The study results are presented in Section 5 and emerging issues discussed in Section 6. Section 7 presents the conclusions of the study.

2. CDM forestry requirements and forest policy assessment framework

2.1. CDM forestry requirements

CDM projects are expected to meet a set of requirements prior to the issuance of certified emission reductions by the CDM Executive board. These requirements are articulated in the Kyoto Protocol and in subsequent decisions taken during the Conferences and Meetings of Parties. These requirements can be summarised under the following categories: eligibility, additionality, acceptability, externalities and certification. They are derived from a review of the CDM modalities (Decisions 19/CP.9 and 14/CP.10), the Marrakech Accords, and commentary and analytical literature on the modalities (FAO, 2004; Lee, 2004; Sedjo et al., 2001; Vine et al., 2001). In the ensuing paragraphs we briefly present the CDM requirements.

2.1.1. Eligibility

Eligibility of land for CDM is given by two aspects. Firstly, the suitability of the forest within the definition of forest provided by the host country as provided for under Decisions 11/CP.7 and 19/CP.9 of the Conference of Parties. These decisions require countries to determine national threshold values of crown cover, tree height and minimum land area, which together will constitute the definition of a forest. These decisions also provide ranges within which countries can choose as follows: between 10 and 30% for crown cover; 2 and 5 m for tree height; and 0.05 and 1 ha for minimum land area. These values have to be determined and communicated by the Designated National Authority.

The second eligibility condition refers to the type of forestry activity. Only afforestation and reforestation (AR) activities are eligible under the CDM during the first commitment period. Afforestation would mean planting trees on land that has been below all the threshold values (crown cover, tree height and minimum land area) of the host country definition for a period of at least 50 years. Reforestation would mean planting on land that was below the threshold values on 31 December 1989.

2.1.2. Additionality

Sequestration or emission reductions due to project activities must be “additional” to any that would occur in the absence of the project (paragraphs 18–22 of Decision 19/CP.9). In other words, additionality implies that projects must result in a net storage of carbon and therefore a net removal of carbon from the atmosphere. Other forms of additionality include programme, financial and investment additionality. *Programme additionality* means that emission reductions are additional to emissions required by law or government policy. *Financial additionality* is the requirement that funding for the implementation of projects must not come from overseas development or environment assistance funds. *Investment additionality* refers to where a project might justify additionality by showing that the creation of carbon offsets will involve costs that would not be incurred in the business as usual scenario. Though not a requirement per se it is a way of demonstrating “intent” and effort through financial analysis.

The draft tool for the demonstration of additionality in AR CDM projects (Annex 16 of CDM Executive Board Report No. 12) identifies some key steps that project developers could follow including:

- Preliminary screening based on the starting date of the project activity and the specific features of the afforestation and reforestation activity (Mapping and map analysis, land use and land tenure analysis);
- Identification of alternatives to the project activity consistent with current laws and regulations (land use analysis, estimates/measurements of carbon stocks, projections, baseline development);
- Investment/financial analysis (Internal Rates of Return, Net Present Value, cost benefit ratio, sensitivity analysis, etc.);
- Barrier analysis (investment, institutional, technological, cultural, social, ecological and others such as risks of fire, conflicts, etc.); and
- Impact of CDM registration (expected).

It is worth noting that most aspects of additionality are applicable at project level, while this paper deals with macro and meso (national and sub-national) policy. As a result, we focus on policy aspects that influence additionality such as land use and land tenure and forest risk management policies—see assessment framework in Section 2.2.

2.1.3. Acceptability

The Kyoto Protocol states that all carbon offset projects in developing countries are required to contribute to sustainable development (Articles 2.1 and 12.2 and Decision 19/CP.9). Host countries have to have criteria for sustainable development by which projects will be judged. In addition, projects must be consistent with other international agreements and guidelines such as the Convention on Biodiversity, Agenda 21, Ramsar and others.

Decision 19/CP.9 also lays out the responsibility of evaluating AR CDM projects with respect to risks associated with the use of potentially invasive alien species or genetically modified organisms. The preamble of the above-mentioned decision recognizes that host countries will have laws against which afforestation and reforestation will be evaluated.

2.1.4. Externalities (environmental impact and leakage)

Projects must demonstrate a clear strategy to deal with all impacts/effects that may arise from project implementation. These impacts could include positive or negative social, cultural, economic or environmental impacts. Projects have to show how the negative impacts would be mitigated or countered.

A prominent aspect in externalities is the question of *leakage*. Leakage can be defined as unplanned emissions that could occur outside project boundaries as a result of project activities. Imagine a decision to cut down on fuel wood harvesting from a given forest in order to allow for regeneration. As a result, fuel wood harvesters may increase harvesting in a neighbouring forest area. This shift in activity to another adjoining forest will trigger loss of biomass/carbon that is being preserved in the regenerating forest. The loss outside the boundaries of the regenerating forest is known as leakage. Leakage can also result from demand and supply changes of land or certain related products. Leakage should not disqualify a project except in instances where projections of emissions are substantial enough to negate projected carbon offsets. However, project analysis must show how leakage has been estimated and what measures will be put in place to minimize it.

2.1.5. Certification

The concreteness, measurability and long-term characteristics of the project will have to be checked independently by a third-party (i.e. a Designated Operational Entity) accredited by the CDM executive board. This takes place in three stages during the CDM project cycle namely validation, verification and certification.

Validation is the process of independent evaluation of proposed project activity based on the Project Design Document against the CDM requirements. The outcome is the registration of the project.

Verification is the independent review process of monitored reductions or sequestration that occurred as a result of a

registered project activity for a given period. This is an ex-post check to confirm whether or not and to what extent carbon offsets have actually been attained.

Certification is the process by which the designated operational entity gives written assurance of the emission reductions or sequestrations achieved by the project during a specified time period as verified. The result is the issuance of Certified Emissions Reductions.

2.1.6. Small-scale afforestation and reforestation projects

Following discussions on the complications and costs involved in responding to the rules or requirements outlined above, modalities were then simplified for 'small-scale projects'. Decision 14/CP.10 defines small scale A/R projects as those that will result in net greenhouse gas removals by sinks of less than 8 kt of carbon dioxide per year during the crediting period. Moreover, the host country has to confirm that the project developers are a low-income community or individuals.

From the above, it will be clear that CDM requirements are framed basically for projects (micro level), but this paper is focused on elements of national (macro level) forest policy that could facilitate or inhibit the implementation of these requirements at the project level. We further analyse these requirements to elucidate national forest policy determinants of compatibility to CDM, which are used to assess community forestry policy in Cameroon.

2.2. A framework for forestry policy compatibility assessment

In this section, we review the CDM requirements in order to elucidate parameters of national policy suitability or compatibility. Our presentation is based on direct references and analytical judgements about which national policy provisions would facilitate or inhibit the fulfilment of these project level CDM requirements. Table 1 presents the framework for forest policy compatibility assessment derived from this analysis. It consists of a number of questions that can be asked of national policy for every CDM requirement category.

A first requirement for a country to partake of CDM projects is the creation or definition of a Designated National Authority with overall responsibility for CDM activities at the national level. All countries have to constitute and identify such an institution, which will be the main link between the host country and the CDM process at international level. This body will also oversee project approval. Michealowa (2003) notes that the structure, functions and capacity of these institutions could vary from country to country.

2.2.1. Eligibility

In terms of eligibility host country authorities are given a direct responsibility to determine threshold values of crown cover, tree height and minimum land area to make up what will constitute a definition of forests. This is a precondition for participation within CDM A/R activities.

The second aspect of eligibility relates to small-scale projects. Decisions 19/CP.9 (Annex Ai) and 14/CP.10 indicate that host country governments need to approve that project developers are low income communities or individuals in order for the project to be validated. They would thus have to determine what criteria would define such a community.

2.2.2. Additionality

We base our analysis on land use and land tenure rights and risk management because most aspects of additionality are applicable at the project level. Decision 19/CP.9 (Paragraph 20e) and the draft tool for the demonstration of additionality in AR CDM projects indicate that all project baselines must take into account all applicable laws and regulations as well as relevant national and/or sectoral policies and circumstances. These include land-use and related regulations, tax and investment regulations historical land uses, practices and economic trends. This means the Designated National Authority or ministry in charge of approval must have information to check these compliance points for every project in the country. It may also imply well functioning institutional structure across scales. Variables might be different in different parts of the country. For example, in Indonesia district authorities are required to give clearance to

Table 1 – Framework for national forest policy-CDM compatibility assessment

CDM requirements	Compatibility question or determinant
Institutional development	a. What is the nature of the Designated National Authority? b. How do current institutions support CDM projects?
Eligibility	c. What is the country definition of a forest? d. What is the country definition of a low-income community or individual?
Additionality	e. How are the land and resource tenure rights implemented? f. How does forest policy cater for forest resource management risks?
Acceptability	g. What are the sustainable development criteria and indicators for the host country? h. What laws regulate the use of potentially invasive species and genetically modified organisms in the forestry sector?
Externalities	i. How are environmental and social impact assessment regulations applied in resource management?
Certification	j. What procedural regulations exist for CDM project approval?

the Ministry of Forestry on issues relating to conflicts over land/ownership of resources and the degree of risks in terms of fire (Masripatin, 2005).

Land and resource tenure rights are important for carbon forestry. FERN (2000) highlight how unclear ownership and tenure rights led to conflicts over land and consequent failure of a carbon project in Uganda.

The potential role of policy provisions in helping with risk of project failure is an important consideration. CDM projects are likely to face a number of risks including political, legal, institutional, financial, market and physical risks. Policy changes at the international level and property rights at the national level are examples of political risks. Non-respect of contracts, non-compliance with guarantees and expropriation are examples of legal risks. Carbon prices are speculative and unpredictable therefore, a source of risks for projects especially when juxtaposed with project performance in terms of certified emission reductions delivery, as well as cost and time investments. Fire and disease are examples of physical risks.

2.2.3. Acceptability

Article 12 of the Kyoto protocol stipulates that CDM projects must contribute to sustainable development in host countries. Host countries are given the responsibility in Decision 19/CP.10 to define sustainable development criteria and ensure that projects adhere to these criteria as a condition for CDM project registration. Therefore countries have to define a procedure for project approval.

A second aspect of acceptability that is to be assessed is compliance with regulations governing the use of potentially invasive species and genetically modified organisms in the forestry sector.

2.2.4. Externalities

Project developers have to demonstrate that the projects will not have any adverse environmental and social impacts if they get registered as CDM projects. Alternatively, if such negative impacts are likely, they need to show how they will be mitigated. This implies that rules for impact assessment ought to be in place at the national level or sub-national level. Countries also have to approve the analysis. This also means that there has to be a procedure for such approval.

2.2.5. Validation

National project approval is an important part of the validation process in the CDM. National approval would cover issues relating to sustainable development, impact assessment, and stakeholder involvement and consultation. This implies once more that a procedure needs to be in place to cater for project approval. Such a procedure would specify roles and responsibilities of the various national actors. Hence, in the case of validation we can also ask whether a procedure for project approval exists at the national level?

It is worth noting that many of these assessment issues are closely related and sometimes difficult to distinguish. There are crosscutting issues that are relevant to all the project requirements. These could include procedural and institutional issues. We attempt to reflect this in our analysis based on insights from community forestry policy in Cameroon.

Notwithstanding the focus on community forestry, we occasionally refer to more general forestry policy when the need arises.

3. An outline of community forestry policy in Cameroon

3.1. Community forestry within forest landscape

Community forestry was born through a long process of forest reforms that started in 1988 with the development of the Tropical Forestry Action Plan. The reform process had five broad national forest policy objectives and corresponding strategies for their achievement (Government of Cameroon, 1993, 1995). These were:

- To safeguard/protect the forest heritage, environment and biodiversity;
- Strengthen the participation of local population in forest management and conservation so that forestry can contribute to raising their living standards;
- Enhance forest resources and their contribution to the national gross domestic product while preserving productivity;
- Ensure the regeneration of forest resources by plantations in order to perpetuate potential; and
- Revitalise the forest sector by setting up an efficient institutional framework.

The process resulted in the revision of the forest law of 1981. A new forest law was enacted and promulgated, -Law No. 94-1 of 20 January 1994. The Prime Minister signed a corresponding implementation decree specifying details of the new law in 1995 (No. 95-531-PM of August 23, 1995). Together, the 1994 law and its implementation decree laid out a new classification of forests, logging rights and conditions and norms for management of forests in Cameroon. This classification and conditions are summarised in Table 2.

In 1995, the Prime Minister signed into law another instrument enacting the Indicative Land Use Framework (plan de zonage) -Decree No. 95-678-PM of 18 December 1995. This is a proposed broad land use plan drawn by the state but open to negotiations during implementation at the local level (Atyi, 2000). It is based on the rules and conditions stipulated in the 1994 law and its implementation decree of 1995. It is meant to plan all of the various forest types in Table 2 for the entire country, but only about 30% of the national territory has been covered within this zoning framework to date.

Community forestry in Cameroon was chosen for this study because the policy provisions for community forestry provides a good institutional and regulatory framework for project appraisal, approval and verification by the Sub-Directorate of community forestry in the Ministry of Forests and Fauna. Rules and regulations are elaborated in the Manual of Procedures and Norms for the Management of Community Forests (MINEF, 1998). No other forest management unit in Cameroon has such a regulatory framework. At the same time the framework leaves open the possibility for private investments to be made in community forests as long as they are

Table 2 – Summary of forest types and conditions in Cameroon

Forest type or unit	
A	<i>Permanent Forests</i> (also known as classified forests) Forests set aside for long-term use and should constitute at least 30% of total forest area in the country.
I	<i>State Forests (forêts domaniales)</i> Comprise protected areas including national parks, forest reserves and sanctuaries with conservation as primary objective. They would require management plans.
Ia	<i>Production forest reserves or Unité Forestière D'Aménagement (UFA)</i> To enable sustainable lumber production. Forest concessions can be granted for an area of up to 200,000 ha to licensed timber operators in these areas. Management plans are a requirement.
Ib	<i>Council Forests (forêts communales)</i> Planted or natural forests managed by municipalities in their area. Planned logging and restoration/afforestation activities are allowed in these forests.
B	<i>Non-permanent Forests</i> Includes all unclassified forests that could be converted temporarily or permanently to purposes other than forestry.
I	<i>Private Forests (forêts privées)</i> Planted forests belonging to individuals in which logging, tree planting and management activities are allowed based on a management plan.
II	<i>Communal Forests (forêts du domaine nationale)</i> This is a residual class of forests including all forests not included in permanent or private forest estates.
Ila	<i>Community Forests (forêts communautaire)</i> Forest area within the communal forest estate, which is the object of an agreement between community and state. Maximum area is 5000 ha per forest. Management contracts run for 25 years renewable. It is the only forest estate communities own and is fully entitled to revenue from natural forest products. Communities may open their community forests to a sale of standing volume and other activities, provided they are agreed upon and included in the management plan.
Iib	<i>Sale of standing volume (ventes de coupe)</i> An area of not more than 2500 ha for which logging rights have been granted to a Licensed Timber Operator. No management plan is required.

NB: Communities have usufruct rights to all forest types in the country. Source: Adapted from (Brown, 1999) and (Djeumo, 2001).

agreed between the community forest legal entity and the private investor. These characteristics identify community forests with the CDM framework.

Secondly, many authors have argued that community forest management has the potential of fulfilling the triple objectives of biodiversity conservation, supporting local development and providing forest services such as carbon sequestration (Klooster and Masera, 2000; Smith and Scherr, 2003). Hence, if well managed it could contribute substantially to the achievement of CDM objectives.

Thirdly, there is a growing potential as more forests in Cameroon are coming under community management following new forest legislation in 1994 introducing community forestry. By January 2006, there were 334 applications by communities in the Ministry of Forests and Fauna (MINFOF). Of the 334 applications, 90 community forests were under full community management. This means that the number more than quadrupled from 17 in December 2001. At this rate, total area under community forestry could attain 1 million hectares in 5 years (i.e. 200 community forests at a maximum of 5000 ha). However, a good number of the community forests are being hijacked by financially lucrative deals from timber exploiters—about 44% of all community forests by December 2003 (MINEF, 2003, pp. 69–73). This runs contrary to the

sustainable management objectives that justified the introduction of community forestry. Carbon forestry might provide a lucrative alternative or at least some competition with timber exploitation in this sector.

A disadvantage of choosing community forestry is that a large part of community forests in Cameroon practice forest management, which is not currently eligible for CDM. Relatively fewer community forests practice afforestation or reforestation, currently eligible for the CDM. However, we think that prospects of and pressure for forest management coming into the Kyoto Protocol framework (post 2012) and the potential of the non-compliant or voluntary carbon market is good, thereby justifying this study.

3.2. Main features of community forestry in Cameroon

Community Forest is defined as “that part of non-permanent forest estate (not more than 5000 ha) that is the object of an agreement between government and a community in which communities undertake sustainable forest management for a period of 25 years renewable” (MINEF, 1998).

Government approves a community forest application and signs a management agreement upon community fulfilment of the following requirements:

- The community has constituted a legal entity and appointed a community forest manager who shall represent them in negotiations with government in matters of community forestry;
- The community has delineated and mapped the intended community forest area;
- The community has completed an 8–10% inventory of the timber, non-timber forest products, and wildlife of the forest;
- The community has provided a description of previous activities carried out in the intended forest area;
- The community presents a simple management plan for the intended forest; and
- The community shows proof of stakeholder agreement on the intentions of forest management.

Once the management agreement is signed, policy requirements are as follows:

- That 100% inventories are carried out in the compartments prior to the commencement of activities;
- The management of community forests provide annual activity plans for approval;
- The management of community forests provide annual reports to government; and
- The community forest management plans are reviewed every 5 years.

3.3. Forest institutions in community forestry

At the national level, forest policy development and implementation is steered by the Ministry of Forests and Fauna (MINFOF)—known until 2004 as the Ministry of Environment and Forests. Its role includes coordination with other ministries such as Economy and Finance on forest revenue issues and Higher Education and Scientific Research on training and research through universities and the Research Institute for Agriculture and Development (IRAD). In terms of ground implementation, the ministry has offices at the provincial, divisional and sub-divisional levels. A government agency called L'Agence Nationale D'Appui au Développement Forestier—ANAFOR (known until June 2002 as ONADEF) handles technical issues such as inventories and silviculture.

The advent of community forestry in 1994 prompted the creation of a special community forestry unit now known as the Sub-Directorate for Community Forestry in the Ministry of Forests and Fauna (MINFOF). It handles the community forestry attribution process as prescribed in the Manual of Procedures and Norms for the Management of Community Forests (MINEF, 1998).

At the local level communities must constitute legal entities representative of all concerned sections of the community in order to manage a community forest. According to Article 28 (1.3) of the 1995 Decree, communities can constitute themselves into one of the following legal entities: an association, a co-operative, a common initiative group or an economic interest group.

The 1994 law created a Special Forestry Development Fund, a national instrument for the promotion and development of forest resources management. An inter-ministerial committee

chaired by the Minister of Forests and Fauna manages the fund. A decree signed in April 1996 (No. 96-237-PM of 10 April 1996) specified the modalities for its functioning. Essentially it mobilises a proportion of current forest revenue and redeploys such funds into special forestry projects.

Armed with the provisions of the CDM and related policy instruments, we move on to analyse the extent to which community forestry policy in Cameroon meets these demands.

4. Methods

This study aims at assessing forest policy compatibility to CDM requirements as a platform for proactive biosphere carbon management, using community forestry policy in Cameroon as a host country case.

The main data sources in this study include: policy documents (laws, decrees, Conference of Parties/Meetings of Parties Decisions, technical reports from various institutions, etc.); existing commentary or analytical literature on policy and policy implementation; and interviews with key informants—when specific information was required. Content analysis was employed on the data in the extraction and organisation of information from various sources. This entailed coding according to the various criteria and assessment questions in the policy assessment framework in Table 1.

The assessment of policy is mainly based on the framework elaborated in Section 2.2. However, we have chosen to introduce policy analysis theory in order to accommodate a more nuanced view of multi-actor policy processes that might not be apparent from a more pros and con “quasi-objective” argument with the use of the framework alone. A rather limited version of Contextual Interaction Theory (Bressers, 2004) is thus used. Its principles of motivation, power and information are used to complement the arguments for each of the questions in the forest policy-CDM compatibility framework.

4.1. Contextual Interaction Theory—CIT

Contextual Interaction Theory explains the process of implementation of policy instruments and attempts to predict whether in a given case there will be any implementation at all, and under what conditions adequate implementation will occur. It can also be used to determine the degree of adequacy of the implementation of policy with respect to “targets”. Contextual Interaction Theory is based on the assumption that the course and outcomes of policy implementation depend not only on the characteristics of the policy instruments (inputs) but more importantly on the characteristics of the actors and interactions involved, especially the *motivation* (perception and interpretation of instrument, values, preferences and incentives), *power* (the relative ability of actors to influence policy as determined by bargaining strength and resources) and *information* (availability, access and control) (Bressers and O'Toole, 2005). The interaction of these three variables of motivation, power and information results in a prediction of the policy implementation process.

The predictive model depicts possible interactions for implementation of the various instruments including *cooperation* (active, passive and forced), *opposition* and *joint learning*. Cooperation is supposed to be active when actors share a common goal among other things, “passive” when one or both parties adopt a very passive stance, which neither hinders nor stimulates the policy application and “forced” when a powerful actor imposes cooperation. Opposition is assumed to be when one or more actors try to prevent policy instrument application, and joint learning, is when only lack of information stands in the way of instrument implementation. These criteria have been applied in the assessment of different policy instruments, to give a more nuanced appraisal of the likelihood of success.

5. Assessing community forestry compatibility to CDM

This section analyses the potential of forest policy to support or inhibit the implementation of CDM forestry requirements in Cameroon. We analyse relevant policy instruments in relation to the requirements and compatibility assessment questions in the framework laid out in Section 2.2 and Table 1—i.e. institutions, eligibility, additionality, acceptability, externalities and certification.

5.1. Institutions

5.1.1. Definition of a Designated National Authority

Cameroon is yet to constitute a DNA. The only office responsible for Kyoto Protocol issues is the Focal Point located in the Ministry of Environment and Nature Protection. Since Cameroon’s ratification of the Protocol on August 28 2002, the focal point is basically an individual (Decision No. 00214/MINEF/CAB). Michealowa (2003) argues that small countries with few projects may maintain the focal point as the DNA and only contract consultants when project numbers increase. It can be argued that a one person Focal Point is inadequate. A second possibility will be for Cameroon to go in for Inter-Ministerial commissions or committees, as is currently the case with issues such as sustainable development, environment or the issuance of timber concessions. Inter-Ministerial committees often face coordination challenges and the problem of impermanence of personnel. In Cameroon personnel change very often, hence the motivation and experience will be lost. These sorts of problems have been experienced in Morocco and Indonesia (Michealowa, 2003). Moreover, such a commission can only operate at the strategic level, the actual registration and follow up issues will have to be addressed by a permanent and specialised unit.

A one-stop shop for approval and support of CDM projects could be a more efficient option. Here, there is some experience in the area of community forestry, where the Sub-Directorate of Community Forestry reviews and recommends approval to the Minister of Forests and Fauna. One advantage of the system is that it mandates the involvement of all other relevant Ministerial departments at the divisional and sub-divisional level (MINEF, 1998). The problem may arise as to where such a unit could be located, given that the DNA

takes care of both energy and forestry projects. In Cameroon, Environment and Nature Protection, Forests and Fauna, and Energy are different ministerial departments. The solution may lie in defining a participatory process through which various actors make such decisions relating to locations and responsibilities.

5.1.2. Current role of institutions in CDM project development

Little has been done relating to promoting CDM projects in Cameroon especially in the forestry sector. As was the case with forestry reform, there is a developing partnership between bilateral aid institutions and NGOs in the sub-sector. The Ministry of Environment and Nature Protection organised a seminar in August of 2005 in Yaounde on the potentials of CDM contributing to local development. The aim was to sensitize stakeholders on the basic issues involved in the CDM. Much of the little ground work by NGOs and projects has been more concerned with feasibility studies.

One such organisation is the Cameroon Mountain Forest Conservation Foundation (CAMCOF). It commissioned a study to evaluate the potential for a carbon programme in the Cameroon Mountains region in 2001 (EcoSecurities, 2002). Modelling results showed that most carbon sequestration could only be done through regrowth and conservation of natural forest on about 4300 ha or 2.5% of the forest area. Regrowth and conservation are not eligible under the first commitment period CDM rules. This suggests that forest policy must be proactive and look at the opportunities that exist in the non-compliance market or concepts of reduced emissions through deforestation and degradation in post 2012 carbon policy scenarios. There exists under-recognised data in the project areas that could facilitate baseline and carbon additionality analysis. The TREMA database of the Mount Cameroon catchment area consists of geo-referenced forest inventory database with 20,000 data records from approximately 300 forest samples. It has built in functions to derive indices of “bioquality” and can be easily modified using additional field information and regression equations to serve carbon management purposes (EcoSecurities, 2002).

Research by the World Agroforestry Centre (ICRAF) on carbon dynamics in a chronosequence of slash-and-burn agriculture in the humid forest zone of Southern Cameroon could be useful for national policy development (Kotto-Same et al., 1997). An example for use of this sort of data would be for further refinement of local standard baselines for small scale projects as expressed in Decision 14/CP.10. More has to be done by NGOs and government in terms of sensitization and institutional capacity building for project uptake and implementation.

It suffices to mention that the Cameroon Mountain Conservation Foundation has been using British aid funds in these carbon studies. NGOs and bilateral and multilateral projects have also used overseas development assistance funds to support community forestry projects in Cameroon. MINEF (2003) reckons that 40% of community forests in Cameroon have been developed through overseas development finances. Projects developed using overseas development finances are not be eligible for CDM projects under the financial additionality criterion. This could be a problem.

5.2. Eligibility

5.2.1. Country definition of forest

Cameroon is yet to define and communicate a definition of forest to the CDM Executive Board. Section 2 of the 1994 forestry law (No. 94-1 of 20 January 1994) defines a forest as,

“any land covered by vegetation with a predominance of trees, shrubs and other species capable of providing products other than agricultural produce”.

It does not mention any of the parameters of crown cover, tree height and minimum land area as requested by the CDM. The current legal definition would not be acceptable.

The requirement of choosing single values each for crown cover (between 10 and 30%), tree height (between 2.5 and 5 m) and minimum land area (between 0.05 and 1 ha) will be problematic for Cameroon. The country is comprised of six agro-ecological zones ranging from humid tropical forests in the south through savannah type vegetations in the middle to sahelian type vegetation in the north. Choosing the lower threshold limit of 10% is likely to exclude most of the 46% of the country that is currently forests, including community forests. On the other hand, choosing a higher threshold value of 30% of crown cover is likely to exclude most of the 50% comprising savannah and dryland areas.

Verschot et al. (2005) showed that between 70 and 90% of all lands in Bolivia, Uganda, and Ecuador were not eligible for CDM projects at a low crown cover threshold of 10%. While only 28% of land in Kenya was excluded at the same crown cover threshold value, mainly because a larger proportion of its lands are dry lands. EarthTrends Country Data (WRI, 2003) estimates that about 37,182,000 ha of land in Cameroon in the year 2000 was above 25% crown cover. Granted that total forest area in Cameroon is estimated at 21,245,000 ha, we can conclude that most community forests areas and indeed current forest areas are unlikely to be eligible for CDM if a crown cover threshold value of less than 25% is chosen.

The forest definition issue requires careful data analysis of the carbon sequestration potential of various agro-ecological regions in the country, as well as comparative cost implications for various threshold crown cover values. These data are not available at the moment. Completing such a study might help reach a decision at the national level, but questions of resource availability for such studies remain open. An alternative could be to orientate policy towards non-compliance mechanisms or post 2012 CDM scenarios that might introduce more favourable eligibility criteria.

5.2.2. Definition of a low-income community or individual

No definition has been discussed within national policy in Cameroon. However, given that rural populations in Cameroon generally live on less than a dollar a day, it is probable that most communities would qualify for small-scale CDM.

5.3. Additionality

5.3.1. Land tenure and resource rights implementation

Land tenure in Cameroon is characterised by multiple layers of rules namely, the 1974 land ordinances, the Indicative Land

Use Framework or *Plan de zonage* and local cultural and traditional land tenure systems.

Following the 1974 Land ordinances, all uninhabited forestland without statutory titles, belong to the state. As a result this land has been conceptualised under the generic notion of “collective ownership” (Chi, 1999; Fisiy, 1997).

The *plan de zonage* further categories land into permanent and non-permanent forests as in Table 1. A main weakness of this instrument is that only about 30% of the country (about 14 million ha) has been zoned through this scheme. The *plan de zonage* is negotiable on the ground (Articles 1 (2) and 6 (2) of Decree No. 95-678-PM of December 18) during regional land allotment planning or boundary delineation for various forest types, but institutional capacity for facilitating such processes are weak and very few experiences of the sort exist (Lescuyer et al., 2001). All areas not designated as permanent forest in the *plan de zonage* or by other decrees are subject to local traditional regimes of land rights. This allows for considerable overlap in rights and entitlements.

In the local traditional regimes, chiefs have political and ritual powers and claim some kind of sovereignty over the land in the non-permanent forest estate. Traditionally effective ownership and administration comes in one of three ways:

- Firstly, by virtue of first occupation for original family lineages;
- Secondly, by community members by birth, marriage or co-optation following local access practice through family lineage, elders or traditional councils; and
- Thirdly strangers or non-natives can pay tribute to the rulers to be granted usufruct.

It is common for unscrupulous strangers to interpret the ownership of the state as permission to access the area without approval from local level. This duality between national and local levels and overlaps would pose serious barriers and risks to carbon project development and management.

Furthermore, there could still be a problem of entitlements to carbon benefits due to regulatory weakness relating to the definition of rights to forest products. Section 9 (1–2) of the 1994 Forestry law defines forest products as comprising:

“Mainly wood and non-wood products as well as wildlife and fishery resources derived from the forest. Certain forest products such as ebony, ivory, wild animal horns, as well as certain animal, plant and medicinal species or those, which are of interest, shall be classified as special. The list of special products shall be fixed, as and when necessary, by the competent ministry” (Section 9 (1–2)).

The discretionary power of the minister may also allow the inclusion of carbon services into the special products list. If this happens within CDM projects and indeed community forests, then communities are doomed because they do not have the right to sue government in a court of law in matters regarding community forests (Vabi et al., 2000). More so, in the case of community forests, the minister reserves the right to terminate the management contract with communities in cases where they do not respect the management plan. Should one or both scenarios occur, there will be no certainty, and as a

corollary, no incentive for carbon investments. What becomes of ongoing certified emission reduction if and when a contract is terminated? Such issues must be clarified if CDM projects are to function smoothly in Cameroon.

While information on land tenure and forest resource entitlements is largely known to actors, excessive discretionary power of MINFOF and lack of clarity on forest service earnings is likely to be an obstruction to CDM implementation.

5.3.2. Forest resource risk management

Fires remain a major cause of forest destruction in Cameroon, hence a great policy challenge to government. Communities use fire as a technique for clearing in subsistence agricultural land preparation, for enabling fresh grass growth for cattle and to a limited extent, hunting in montane forests. Communities also recognize the destructive capacity of fire for their crops and forests in many places. As a result, there are fire management policies both at the level of government and within communities.

Articles 6–8 of Decree No. 95-531-PM allows for local ministry of forestry staff to determine modalities for safe and controlled fires. The same articles empower local government administrators in the Ministry of Territorial Administration and Decentralisation to issue permits to start fires after consultation with the local forestry staff. But they very often issue permits without consulting forestry staff. Joint MINFOF-Community fire prevention and monitoring committees are supposed to be set up at local level but they have hardly been effective because MINFOF is highly understaffed. For example, the ratio of MINFOF staff to forest area in the South West Province is around 1:15,000 ha.

Gardner et al. (2001), report more successful fire fighting control techniques within community forestry in the Kilum-Ijim forest area in the northwest province of the country. These communities are using regular fire tracing, sensitization and patrols to successfully reduce fire occurrence and destruction of forests, grazing land and farms in the area.

This dichotomy in forest fire management capacity has implications for potential carbon forestry projects. Permanent forest estates under government control may suffer while community forestry areas under carbon forestry may benefit if these lessons are multiplied and community capacity enhanced. Failures in fire prevention may dent investor confidence in carbon forestry in the country.

5.4. Acceptability

5.4.1. Sustainable development criteria

Cameroon is yet to define a set of sustainable development criteria for CDM projects as required by the Kyoto Protocol. There is also no known general set of sustainable development criteria and indicators in the country. However, principles, criteria and indicators for sustainable forest management exist. These criteria for sustainable forest management were developed through a process supported by a number of organisations led by the African Timber Organisation and the International Tropical Timber Organisation. The set of principles includes 1 principle at the national level, which requires the maintenance of the multiple functions of forests as a high political priority. This principal has 5 criteria, 33

indicators and 45 sub-indicators. At the forest management unit level three principles are identified namely: enabling the continued supply of required goods and services; maintaining the ecological functions of the forest; and ensuring the contribution of forests to the improvement of the economic and social well-being of workers in the forest management unit and the local populations. These three principles have 15 criteria, 57 indicators and 140 sub-indicators (ATO/IITO, 2003). This could be a starting point for carbon forestry sustainable development criteria development.

Relevant examples of criteria and indicators from the ATO/IITO set include, ensuring projects contribute to improving the health and education of the local population; project recognising and respecting the rights and entitlements of the local population (e.g. shares of benefits); ensuring projects does not introduce any contamination of food chains or aquatic ecosystems; and projects do not introduce any alterations to the drainage system.

The community forestry manual of procedures introduced a number of requirements that could also be seen as enhancing sustainable forest management. Communities were required to carry out inventories and produce simple management plans, develop and show a benefit-sharing mechanism for proceeds that will come from the community forest, and demonstrate that all involved had participated in the decision-making during the planning process. Annual exploitation plans are not expected to go beyond forest productivity rates. To date all community forests approved have fulfilled these conditions, but a number of shortcomings have appeared.

Firstly, an evaluation report at the end of 2003 showed that 80% of these communities were not respecting the management plan (MINEF, 2003). Many communities have exploited timber beyond the recommended volumes because community forests are more attractive to timber exploiters. Timber exploiters find community forests cheaper and easier to work with. In addition, some villagers encourage and cooperate with illegal loggers for personal financial benefits (Brunner and Ekoko, 2000; Fomete, 2001).

Carbon funds could present greater benefits within the simplified procedures for small-scale CDM projects. It could enable carbon forestry projects to compete with and/or edge out sale of standing volumes and illegal logging, thereby contributing to sustainable development.

5.4.2. Regulations on potentially invasive species and genetically modified organisms

The CDM presumes that host countries have laws that enable them to assess the risks of projects that use potentially invasive species and genetically modified organisms. In Cameroon reference to both invasive species and genetically modified organisms is very indirect. Article 16 of the August 1995 Decree states as follows:

“The conditions for organizing the prevention and control of diseases and insects threatening forest plantations and species shall be determined by order of the Minister in charge of forestry”.

Such an order is still awaited. Although this is not a condition that can justify the non-registration of a project, it is

in the interest of host countries to define such policies for the benefit of sustainable ecosystems management as a whole.

5.5. Externality—impact assessment

National approval has to take project impact analysis into account. This means that policy must be available to guide the appraisal and evaluation process. Article 110 (1) of the August 1995 Decree states the following with regards to impact assessments:

“Within the context of a development plan likely to disturb or destroy a forest, a preliminary impact study on the environment shall be carried out by the applicant, according to the rules laid down by the department in charge of the environment, in order to determine what special steps should be taken to ensure the conservation, management or as the case may be, salvage of natural resources” (Article 110 (1) August 1995 Decree).

The rules required for such impact studies are yet to be determined. However, a Department of Norms was created in the Ministry of Environment alongside the Secretariat for Environment in 1999 to establish all environmental and forestry related norms demanded by the 1994 law. But nothing has been published in this regard. Any Designated National Authority for CDM could work with this government department to establish the impact assessment conditions required.

Despite the weak institutional and regulatory framework in this regard, two initiatives have been carried out in the country initiated by external funding bodies: the Mokong dam project in the North province (IUCN) and the Chad Cameroon Pipeline Project (Bitondo, 2000). Guidelines of donor institutions were used viz. the World Bank Operational Directives on environmental assessment – OP 4.01 and the Operational Policy on Economic Evaluation of projects – OP 10.04 (Dames and Moore, 1997). The government of Cameroon put the Mokong Dam project on hold as a result of the environmental assessment (Bitondo, 2000).

The motivation of civil society in both cases enabled the adaptation of international frameworks/criteria to local settings with some success. The fact that government recognised the results of both studies indicates that they could be acceptable if used for CDM project impact assessments.

5.6. Certification—project review and approval procedures

Cameroon is yet to determine a project review and approval procedure for the CDM. Establishing such a procedure will fall within the responsibilities of a DNA once it is constituted. The only experience of project appraisal and approval in the forestry sector that the DNA could learn from is the case of community forestry. The Sub-Directorate of community forestry in the Ministry of Forests has reviewed over 300 community forestry applications so far. Its reviews are based on prescriptions laid out in the Manual of Procedures and Norms for the Management of community forests (MINEF, 1998). An outline of these requirements was presented in Section 3.2.

The Ministry must make a decision within 6 months of receipt of the application. If communities do not receive a letter rejecting their application with justification, they can assume it has been granted, and therefore continue with the development of the management plan. If rejected, they could correct the application based on the recommendations of the Minister and re-submit. A second strong point of the approval process is that it provides for consultation and crosschecking with all government departments at the local level.

There have been some problems with the requirements for approval. These include chiefly complaints of the process being costly and some requirements simply redundant. For example, communities produce GIS based boundary maps that are up-to-date in terms of land use at scale 1:50,000, and are required to certify them at the Institut Nationale de Geographie. There, technicians use points from the community map to hand-trace new boundaries on topographic sheets of 1975 for which they issue an attestation of surface area. As a result communities spend money to get final a product that is less accurate than their initial map (McCall and Minang, 2005). Such problems have led to the revision of the manual of procedures. The Ministry of Forests is preparing a new version. The experiences of this process could help the DNA gauge what will be workable for the CDM.

6. Discussion

The previous section examined the potential of policy instruments to support or inhibit the implementation of CDM requirements by attempting to answer a number of key questions of national forestry policy, and Table 3 summarises the analysis. Salient constraining factors and supportive policy dimensions for carbon forestry project development are highlighted and discussed in the text that follows.

6.1. Constraining factors which limit the potential

Firstly, some constraining institutional factors emerge from the analysis, namely: the absence of a Designated National Authority and the need for broad institutional capacity development. The creation of a Designated National Authority is very urgent if Cameroon must benefit from the CDM. Its absence not only inhibits the approval of any project developed but also creates a serious vacuum in terms of education and capacity building for the promotion of carbon project uptake. Even when created, a serious coordination and networking challenge has to be overcome at the national and sub-national levels given that the Departments of Environment, Forestry and Wildlife and Energy are separate ministerial departments.

The involvement of NGOs will be important in the development of carbon forestry as they can represent a strong repository for the required knowledge and skills in the country (Michealowa, 2003). Institutional synergy and cooperation at multiple levels involving multiple actors enabled the development of carbon forestry in countries such as Costa Rica and Mexico (Subak, 2000; Nelson and de Jong, 2003). Specific policy attention must be given to institutional development.

Table 3 – The likelihood of policy instrument application for CDM criteria in Cameroon under CIT

CDM criteria	National policy issue/question	Policy instrument	Mi	Mt	I+	Pi	Process prediction	Observations
Institutional development	Designated National Authority	DNA Focal point for UNFCCC	–	–	–	–	None	Not done Limited capacity—an individual with little resources
		Sub-Directorate of Community Forestry	+	–	+	0/+	Cooperation	Operating very well, could provide valuable experience for CDM process
		Role of NGOs	+	+	+	+	Cooperation (active)	Very good potential and interest; need capacity building and resources
		Overseas development assistance	+	+	+	+	Cooperation (active)	Worked well for community forestry but potentially limiting for forest eligibility
Eligibility	Definition of forest Definition of low-income communities or individuals		–	–	–	–	None	Not adequate
			–	–	–	–	None	None
Additionality	Land and resource tenure rights	ILUF (Plan de zonage)	0	+	0	+	Learning toward cooperation	Inadequate; needs an integrated approach to be helpful for CDM
		Forest and tree resource entitlements (Section 9 (1–2) of 1994 Forestry Law)	0	0/+	0/+	+	Obstruction/none	Needs clarification and equity measures
		Forest resource risk management Fire management provisions	+	+	0/–	+	Cooperation	Good at community level; government needs resources
Acceptability	Sustainable development criteria and indicators		–	–	–	–	None	Not defined for CDM
		ATO/ITTO sustainable forest management criteria and indicators	N/E	N/E	N/E	N/E	N/E	Could be helpful in CDM criteria definition
		Financial/taxation	+	–	–	–	None/obstruction	Needs revision, otherwise would be counterproductive
		Regulations governing GMOs and potential invasive species in forestry	–	–	–	–	None	None
Externalities	Impact assessment regulations		0	+	0/+	–	Learning toward cooperation	Scanty and inadequate, needs development
Validation	Project review and approval procedure	Community forest approval procedure	+	–	+	0/+	Cooperation (forced)	Potentially helpful for CDM development

NB: Mi—motivated implementers; Mt—motivated target group; I+—information for implementation; Pi—balance of power viewed from position of implementer; N/E—no evidence.

Secondly, a number of regulatory issues need to be addressed to facilitate biosphere carbon project management. These include: specifying the definition of forest and low-income communities and individuals for small-scale project eligibility; developing sustainable development criteria and indicators, impact assessment rules, and policy on genetically modified organisms and invasive species within forestry. Most importantly and urgently, modalities and procedures for national project approval are needed in Cameroon. These regulatory requirements are an absolute necessity in the CDM modalities (Decisions19/CP.9 and 14/CP.10).

In addition a number of regulatory measures that could help promote carbon forestry are required in the case of Cameroon. Clarification will be required on rights of ownership and access to earnings from forest services. Current policy provisions refer only to product ownership and access, and they also allow excessive discretionary power to forest administration and political appointees to withdraw rights of ownership. Clarification about ownership and entitlements to earnings from forest services including carbon will provide an incentive for carbon project development and could help reduce risk of project failure and conflicts. [Smith and Scherr \(2003\)](#) argue that securing forest access and ownership rights for local people and establishing forest carbon rights are national policy actions needed to enhance CDM project development.

Multi-layered land tenure policy arrangements in Cameroon could inhibit carbon forestry development. The current proposed land use framework (*plan de zonage*) gives room for negotiation at the local level, but the lack of technical capacity and resources has hampered its implementation. Leaving room for conflict with local tenure arrangements. Conflicts of this nature will endanger the success of carbon forestry projects. [FERN \(2000\)](#) point to the role of land conflicts in carbon project failure in East Africa. Encouraging an integrated land use planning approach could help mitigate the problem while enabling the achievement of sustainable development and leakage avoidance.

Lastly, procedures for the acquisition of community forests must be simplified and meaningful support provided by policy implementation to curb the illegal logging induced by changes in financial and regulatory instruments in the 1994 law. This argument lends support to the ongoing revision of the manual of procedures and norms for community forest management.

Understanding the various indications of motivation, power and information of actors as they affect the above-mentioned constraining factors is relevant (see [Table 3](#)). Perhaps a national strategy study in the nature of what preceded policy development in Indonesia, India or Morocco is also needed to understand the details of these issues.

6.2. Supportive policy dimensions/opportunities

A number of opportunities for enhancing biosphere carbon sequestration exist in current policy including: the potential to fund capacity building activities through the national Special Forestry Development Fund; learning from the current regulatory framework for community forestry approval; and taking advantage of the current interest and capacity of Non-Governmental Organisations.

Government resources are in short supply and few opportunities exist for communities to obtain funds to develop projects. When overseas development assistance has funded the development of community forests this may render projects ineligible for the CDM under the financial additionality requirement. This means other funds are needed for capacity building and for start-up investments in communities. The Special Forestry Development Fund provides an own funding opportunity. This is a fund in the Ministry of Forests and Fauna that allows for percentage of forestry taxes to be reinvested into forestry development. [Subak \(2000\)](#) demonstrated that Costa Rica's own funding from hydro-carbon taxes was instrumental in developing the carbon forestry programme.

Current community forestry project approval regulations provide a good point of departure for CDM project approval procedure. They address and handle participation, planning, tenure, and conflict issues with some success ([Brown and Schreckenber, 2001](#)), enabling some kind of good governance dimension to forest management in Cameroon ([Brown et al., 2003](#)). Over time, communities have gained experience with forest inventories, management plan development, monitoring and other relevant management mechanisms. These experiences further boost the potential for terrestrial carbon management within community forests. Carbon funds can provide the strong competition needed to stem the invasion of community forests by timber companies.

Better involvement of NGOs could help enhance carbon project uptake and implementation in Cameroon. Besides the initial interest seen from the Cameroon Mountain Conservation Foundation and the World Agroforestry Centre in carbon forestry studies in Cameroon, NGOs in the country have made remarkable contributions in terms of promoting sustainable forestry and forest policy ([Ekoko, 2000](#)). [Table 3](#) also indicates a strong likelihood for implementation with NGO involvement given better resources; lobby strength, information, motivation, and the confidence the population have in them. [Michealowa \(2003\)](#) shows the very important role NGOs played in the development of relevant CDM policy development in Indonesia and India.

In all, this study provides evidence that if national policy is to support CDM project development it must be addressed in a holistic manner, thus confirming the following IPCC report statement:

“The public policy environment for agriculture, forestry, and industrial sectors varies across countries and may facilitate or inhibit the penetration rate of LULUCF projects. Such policies could address tax incentives, or subsidies for afforestation, reforestation or deforestation; land conversion to agriculture or alternative agricultural practices; land tenure; agrarian reform; and sustainable development more generally ...” (IPCC, 2000 p. 303).

7. Conclusion

This paper set out to examine the compatibility between forest policy provisions in Cameroon and the CDM/Kyoto Protocol framework. It examined the relevant national policy questions

within CDM project requirements, and then analysed specific constraining factors and opportunities for CDM forestry project development within community forestry policy.

Based on the foregoing analysis, we conclude that national policy in Cameroon needs to address the following to enable the uptake, development and smooth implementation of CDM projects. It must specify the following:

- A definition of forest;
- National sustainable development criteria for CDM project assessment;
- National impact assessment criteria and procedures;
- Criteria for low-income individuals or communities to qualify for small-scale CDM projects; and
- Genetically modified organisms and invasive species policy guidelines for project assessment.

It must also constitute a Designated National Authority and further develop the institutional framework for project appraisal.

Given that current eligibility criteria do not offer easy opportunities to maximise carbon sequestration potential for biosphere carbon management, it must recognise the need for the adoption of *pro-active policy action*. This would mean a holistic approach in which it must do the following: clarify ownership and entitlements to earnings from LULUCF services; facilitate review and approval procedures for forest types; enhance integrated land use planning within forest types to reduce conflicts and the potentials for leakage; and generate own start-up funds for policy development. Enhancing cooperation between NGOs, government agencies and research institutions will be vital for providing project level support and capacity building on complex novel issues such as additionality, leakage and development impact amongst others. Government could also consider facilitating the development of a national carbon market mechanism that would organise producers and link with the international carbon market. These measures would help national policy look beyond the current CDM rules and into the non-compliance market and post 2012 Kyoto scenarios in a bid to maximise options.

At the global level, the CDM/Kyoto framework needs to explore possibilities of setting-up mechanisms for supporting proactive biosphere carbon management policies in non-annex 1 countries at national level as well as in project development at the community level in order to enhance carbon forestry project adoption. This could be under the current rules or within ongoing negotiations on the carbon forestry rules beyond 2012.

In addition, the findings of this study also support the current considerations for reduced emissions through deforestation and degradation within the Kyoto Protocol process (post 2012). This is due to the fact that conservation activities that avoid emissions through deforestation in humid tropical countries like Cameroon are not eligible for the CDM even though deforestation causes about 25% of global emissions. One of the widely supported post 2012 ideas is the concept of “compensated reduction”. “Compensated reduction” suggests a mechanism in which countries that elect to reduce national level deforestation to below 1980–1990 level would

receive post facto compensation, whilst they commit to stabilise or further reduce deforestation in the future (Santili et al., 2005). Such a proposition offers better opportunities for forest management in the humid tropics like Cameroon. But it might mean that national governments take responsibility for meeting the reduction targets through a sectoral approach once they elect to participate in the compensated reduction scheme. The implications could be greater challenges for proactive forestry policy development and implementation especially because the rules are still being crafted. Hence, further research and learning will be needed.

REFERENCES

- Atyi, R.E., 2000. TROPFOMS, A Decision Support Model for Sustainable Management of South-Cameroon's Rain Forests. PhD Thesis. Wageningen University, Wageningen.
- ATO/ITTO, 2003. ATO/ITTO Principles, Criteria and Indicators for Sustainable Management of African Natural Tropical Forests. ITTO Policy Development Series No. 14. ITTO, Yokohama.
- Bitondo, D., 2000. Environmental assessment in Cameroon: state of the art. *Impact Assess. Project Appraisal* 18 (1), 33–42.
- Bressers, H Th.A., O'Toole, L.J., 2005. Instrument selection and implementation in a networked context. In: Eliadis, P., Hill, M., Howlett, M. (Eds.), *From Instrument Choice to Governance: Future Directions for the Choice of Governing Instrument*. McGill Queen's University Press.
- Bressers, J.T.A., 2004. Implementing sustainable development: how to know what works, where, when and how. In: Lafferty, W.M. (Ed.), *Governance for Sustainable Development: The Challenge of Adapting form to Function*. Edward Edgar, Cheltenham.
- Brown, D., 1999. Principles and Practice of Forest Co-management: Evidence from WEST-CENTRAL Africa. European Union Tropical Forestry Paper 2, ODI, London.
- Brown, D., Schreckenber, K., 2001. Community Forestry: Facing up to the Challenge in Cameroon. RDFN Paper No. 25a, ODI, London.
- Brown, D., Vabi, M.B., Nkwinkwa, R., 2003. Governance Reform in the Forest Sector: A Role for Community Forestry. Paper prepared for the XII World Forestry Congress, Quebec.
- Brunner, J., Ekoko, F., 2000. Cameroon. In: Seymour, F.J., Dubash, N.K. (Eds.), *The Right Conditions: The World Bank, Structural Adjustments and Forest Policy Reform*. World Resource Institute, Washington, DC, pp. 59–80.
- Chi, A.M., 1999. Co-management of Forest in Cameroon: The Compatibility of Government Policies with Indigenous Practices. PhD Thesis. University of Twente, Enschede.
- Dames, Moore, 1997. Etude D'Impact sur L'Environnement. Projet D'Exportation Tchadien - Partie Camerounaise. ESSO Exploration and Production Chad, Cameroon Oil Transportation Company (COTCO) Societe Nationale D'Hydrocarbure (SNH), Washington.
- Djeumo, A., 2001. The Development of Community Forests in Cameroon: Origins, Current Situation and Constraints. Rural Development Forestry Network Paper No. 25B (I), ODI, London.
- EcoSecurities, 2002. Evaluation of the Potential for Developing a Carbon Programme in the Cameroon Mountains Region (Report for CAMCOF). EcoSecurities, Oxford.
- Ekoko, F., 2000. Balancing politics, economics and conservation: the case of the Cameroon Forestry Law reform. *Dev. Change* 31 (1), 131–154.

- FAO, 2004. Climate Change and the Forest Sector. Possible National and Sub-national Legislation. FAO Forestry Paper 144, Rome.
- FERN, 2000. Sinking the Kyoto Protocol. The Links Between Forests, Plantations and Carbon Sinks. FERN, Moreton-in-Marsh, United Kingdom.
- Fisiy, C.F., 1997. State dislocation of customary management systems: land colonization on the slopes of Mount Oku, North-West Province of Cameroon. *Law and Anthropology* 9, 124–145.
- Fomete, T., 2001. The Forestry Taxation System and the Involvement of Local Communities in Forest Management. Rural Development Forestry Network Paper NO. 25B (II), ODI, London.
- Gardner, A.A., DeMarco, J., Asanga, C.A., 2001. A Conservation Partnership: Community Forestry at Kilum-Ijim, Cameroon. Rural Development Forestry Paper No. 25H (II), ODI, London.
- Government of Cameroon, 1993. La politique Forestière du Cameroun. Ministry of Environment and Forests (MINEF), Yaounde, Cameroon.
- Government of Cameroon, 1995. La Politique Forestière du Cameroun: Document de Politique Générale. Ministry of Environment and Forests (MINEF), Yaounde, Cameroon.
- IPCC, 2000. Special Report on Land Use, Land-Use Change, and Forestry. Cambridge University Press, New York.
- Klooster, D., Masera, O., 2000. Community forest management in Mexico: carbon mitigation and biodiversity conservation through rural development. *Global Environ. Change* 10 (4), 259–272.
- Kotto-Same, J., Woome, P.L., Appolinaire, M., Zefack, L., 1997. Carbon dynamics in slash-and-burn agriculture and land use alternatives of the humid forest zone in Cameroon. *Agriculture. Ecosyst. Environ.* 65 (3), 245–256.
- Lee, M.K., 2004. CDM Information and Guidebook, second ed. United Nations Environment Programme (UNEP), Roskilde, Denmark.
- Lescuyer, G., Emerit, A., Mendoula, E.S., Seb, J.J., 2001. Community Involvement in Forest Management: A Full-scale Experiment in the Southern Cameroon Forest. Rural Development Forestry Network Paper No. 25c, ODI, London.
- McCall, M.K., Minang, P.A., 2005. Assessing participatory-GIS for community-based NRM: claiming community forests in Cameroon. *Geogr. J.* 171, 340–356.
- Masripatin, N., 2005. Preparing the ground: Indonesia's arrangements for forestry projects under the Clean Development Mechanism. *Unasylva* 222 (56), 12–18.
- Michealowa, A., 2003. CDM host country institution building. *Mitigation Adapt. Strategies Global Change* 8 (3), 201–220.
- MINEF, 1998. Manual of the Procedures for the Attribution, and Norms for the Management, of Community Forest. Ministry of Environment and Forestry, Yaounde, Cameroon.
- MINEF, 2003. Etats des Lieux de la Foresteries Communautiare au Cameroun. Ministry of Environment and Forestry, Yaounde, Cameroon.
- Nelson, K.C., de Jong, B.H., 2003. Making global initiatives local realities: carbon mitigation projects in Chiapas, Mexico. *Global Environ. Change* 13 (1), 19–30.
- Santili, M., Moutinho, P., Schwartzman, S., Nepstad, D., Curran, L., Nobre, C., 2005. Tropical deforestation and the Kyoto Protocol: an editorial essay. *Climate Change* 71 (3), 267–276.
- Sedjo, R.A., Marland, G., Fruit, K., 2001. Renting Carbon Offsets: the Question of Permanence, from http://www.weathervane.rff.org/features/pdf_files/roger3.pdf
- Smith, J., Scherr, S.J., 2003. Capturing the value of forest carbon for local livelihoods. *World Dev.* 31 (12), 2143–2160.
- Subak, S., 2000. Forest Protection and Reforestation in Costa Rica: Evaluation of a Clean Development Mechanism Prototype. *Environ. Manage.* 26 (3), 283–297.
- Vabi, M.B., Ngwasiri, C.N., Galega, P.T., Oyono, R.P., 2000. The Devolution of Forest Management Responsibilities to Local Communities. Context and Implementation Hurdles in Cameroon. WWF, Yaounde.
- Verschot, L.V., Zomer, R., Van Straaten, O., Muys, B., 2005. Implications of Country-Level Decisions on the Specification of Crown Cover in the Definition of Forests for Land Area Eligible for Afforestation and Reforestation in the CDM. Joanneum Research, Graz, Austria.
- Vine, E.L., Sathaye, J.A., Makundi, W.R., 2001. An overview of guidelines and issues for the monitoring, evaluation, reporting, verification, and certification of forestry projects for climate change mitigation. *Global Environ. Change* 11 (3), 203–216.
- WRI, 2003. EarthTrends Databases. Available online by World Resources Institute. http://earthtrends.wri.org/pdf_library/country_profiles/for_cou_120.pdf - search='EarthTrends%20forest%20data%20Cameroon' (verified July 21, 2006).

Peter Akong Minang is a doctoral candidate at the International Institute for Geo-Information Science and Earth Observation (ITC) in Enschede, The Netherlands. He has been working on community forestry, environmental education and spatial planning issues in Cameroon for 10 years. His current research interest is environmental governance with a focus on Land Use Land Use Change and Forestry and climate change issues.

Hans Th.A. Bressers is Professor of Policy Studies and Environmental Policy and Scientific Director of the Centre for Clean Technology and Environmental Policy (CSTM) at the University of Twente in the Netherlands. He is also an independent scientific member of the Commission on Sustainable Development of the Dutch Social-Economic Council (SER) and of the Scientific Committee for the European Declaration for a New Water Culture. His extensive research and publications have been on policy-mapping, -instruments, -implementation, -evaluation and policy networks, mostly applied to environmental policies.

Margaret Skutsch is Associate Professor with the Technology and Sustainable Development Group of the University of Twente in the Netherlands. She has been engaged in research on management and impacts of community forest management in Africa and Asia for 30 years and is Director of the International Research Programme 'Kyoto: Think Global, Act Local', which is looking at the potential for community forest management under future climate agreements.

Michael K. McCall is Associate Professor of collaborative spatial management at the International Institute for Geo-Information Science and Earth Observation (ITC) in Enschede, The Netherlands. He has been involved in research and training in collaborative rural development and natural resource management in East Africa and Asia for more than 30 years. His current research interests are in participatory spatial planning especially participatory mapping and GIS applied to land and resource management at community level.