Synergizing climate change mitigation and adaptation in Cameroon: An overview of multi-stakeholder efforts

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Synergizing climate change mitigation and adaptation in Cameroon
An overview of multi-stakeholder efforts

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Abstract

Purpose – This paper aims to examine the policy environments, institutional arrangements and practical implementation of some initiatives undertaken by the Government of Cameroon, together with some relevant stakeholders, in addressing climate change mitigation and adaptation at various levels in the country, which are prerequisites to promote synergistic ways of addressing climate change mitigation and adaptation.

Design/methodology/approach – Using a qualitative approach to data collection, the paper draws upon information collected from relevant literature and interviews with 18 key country resource personnel.

Findings – Results revealed that most reviewed policies/programs/strategies do not mention “climate change” explicitly but propose some activities which indirectly address it. Interaction is fair within the government ministries but weak between these ministries and other institutions. Inadequate financial resources are being opined as the most important challenge stakeholders are (and would continue) facing as a result of adopting integrated approaches to climate change. Other challenges include inadequate coordination, insufficient sensitization and capacity building, ineffective implementation, inadequate compliance, lack of proper transparency and inadequate public participation. To redress the aforementioned constraints and challenges, the paper concludes by outlining a number of recommendations for policy design.

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Originality/value – The following recommendations were made: create a national technical committee to oversee and provide scientific guidance to the government on synergistic approaches; promote private sector investment and sponsorship on synergistic approaches; create local awareness, etc. It is important to underscore that minimal studies have been conducted to analyze multi-stakeholder perspectives on synergies between climate change mitigation and adaptation in Cameroon. This study attempts to bridge this major gap.

Keywords Adaptation, Climate change, Mitigation, Cameroon, Synergy

Paper type Research paper

1. Introduction

In the world today, climate change is at the center of most global debates. While the Intergovernmental Panel on Climate Change (IPCC) attributes these climatic changes to anthropogenic emissions of greenhouse gases (GHGs), a changing climate has and will continue to have adverse effects on agro-ecosystems and societies in multiple ways, with negative consequences dominating (Rosenzweig and Tubiello, 2007). Thus, the central question is no longer whether the climate will change but rather how we should respond. As a response, the United Nations Framework Convention on Climate Change (UNFCCC) has identified two options: mitigation, “an intervention that comprises all human activities aimed at reducing the emission sources or enhancing the sinks of greenhouse gases,” and adaptation, “any adjustment in natural or human system in response to actual or expected climatic stimuli or their effects, aimed at moderating harm or exploiting beneficial opportunities” (Klein et al., 2005, p. 580). Although the benefits of adaptation and mitigation have been well documented, differences also exist in their objective/nature, co-benefits and limits, who decides and who pays the price versus who receives the benefits of mitigation and adaptation (Wilbanks et al., 2003; Klein et al., 2005; Locatelli et al., 2011). Regardless of which global actions are taken to slow GHG emissions (e.g. clean development mechanisms [CDM] and REDD+ [reducing emissions from deforestation and forest degradation and fostering conservation, sustainable management of forest and enhancement of carbon stocks]), cumulative past emissions have already committed the planet to a certain degree of climate change and associated impacts (Rosenzweig and Tubiello, 2007), thus the need to adapt.

However, although the UNFCCC refers to both mitigation and adaptation, the development of their activities has been dealt with as separate matters with adaptation highly ignored in favor of mitigation (Verchot et al., 2007). In the first decade of the UNFCCC, there was hope that mitigation efforts as a first line of defense could be sufficient to address climate change, not requiring intensive active adaptation. With that hope gone, coupled with the exacerbated vulnerabilities of several developing nations, adaptation has slowly, but steadily, moved up the scale to international policy attention as it has become clear that some impacts of climate change will spread beyond national borders (Duguma et al., 2014a). Thus, this paper examines efforts that have been made by stakeholders in Cameroon to promote synergy between climate change mitigation and adaptation and prescribed recommendations for improvement.

2. The case for synergizing mitigation and adaptation efforts in Cameroon

Before the Paris Agreement in 2015, international policies primarily focused on mitigation, as the need for adaptation was perceived as a failure of mitigation or a way to weaken mitigation efforts (Wilbanks et al., 2003; Klein et al., 2005; Locatelli et al., 2011). It was also argued that the implementation of synergy measures will encounter institutional and
organizational complexity at the international and national levels, and forcing them together might be counterproductive (Locatelli et al., 2011). However, as climate change seems inevitable, posing a risk for people and the planet, both mitigation and adaptation are important; the former attempts to reduce future impacts and the later effects short-term impacts (Wilbanks et al., 2007). Although mitigation and adaptation measures were previously handled separately, there is a growing argument that synergistic approaches to adaptation and mitigation could bring substantial benefits at multiple scales (Duguma et al., 2014a). It is therefore imperative that to address the impacts of climate change, strategies combining mitigation and adaptation are selected. Thus, as developing countries take on a more active role in climate change mitigation and simultaneously realize their great need for adaptation, pursuing synergies between the two measures is gaining impetus as a viable option for their response to climate change (Duguma et al., 2014a, 2014b).

Klein et al. (2005), representing some of the few pioneer literatures on synergy, stated that synergies are created when measures that control atmospheric GHG concentrations also reduce adverse effects of climate change, or vice versa. According to the IPCC, synergy refers to the “intersection of adaptation and mitigation so that their combined effect is greater than the sum effect if implemented separately” (IPCC, 2007). Duguma et al. (2014a) described synergy between mitigation and adaptation as “an approach in which both mitigation and adaptation measures are addressed without any prioritization, mainly undertaken within a systems-thinking context to address climate change issues”. Some arguments in favor of synergistic approaches have been explored in the past decades. For instance, Klein et al. (2007) posited that synergies between mitigation and adaptation can increase the efficiency of climate change measures, making it more attractive to funding agencies. Dang et al. (2003) also argued that if the balance between mitigation and adaptation could be achieved, climate policies may be socio-economically efficient and may even foster sustainable development. Thus, synergy approach is gradually gaining impetus as a basis for future climate policy.

As climate change is projected to hit the poorest the hardest, it is particularly important that developing countries such as Cameroon pay particular attention to the management of its natural resources, especially its large expense of dense tropical rainforests of the Congo Basin, which can play a vital role toward mitigating and adapting to climate change (Bele et al., 2011). In Cameroon, as in other countries of the Congo basin region, policy processes and activities related to climate change have been hitherto geared mostly toward mitigation and related questions, with limited concern about adaptation issues (Chia et al., 2015). In 1992, Cameroon signed the UNFCCC convention and ratified it in 2004, signifying its readiness to contribute in the reduction of GHG emissions. This provided a basis for concerted international action to mitigate climate change and adapt to its impacts (Bele et al., 2011). Cameroon has also signed and ratified the Kyoto Protocol and has been taking part in deliberations leading to future regional and global climate change response processes (Chia et al., 2015). Like most countries in the Congo Basin, Cameroon is well represented in REDD/REDD+ debates and is also engaged in the REDD+ readiness process (Alemagi et al., 2014). Also, in 2005, the government developed and submitted the country’s First National Communication to the UNFCCC, principally focusing on climate change mitigation and related issues. Additionally, as Bele et al. (2011) opined, Cameroon’s Forest and Environment Support Program document and its Poverty Reduction Strategy Paper (PRSP) is replete of forest management actions required to respond to the effects of climate change. As of 2011, Cameroon was yet to design a formal institutional framework for climate change adaptation (Chia et al., 2015). However, as the impacts of climate change are being felt, adaptation is moving up the scale of climate change discourse in Cameroon. In June 2015, Cameroon...
validated a national adaptation plan for climate change (INDC, 2015). Furthermore, in addition to mitigation-related issues, adaptation strategies to curb the impacts if climate change were proposed in the country’s Second National Communication to the UNFCCC (NC2) submitted in September 2015 (MINEPDED, 2015). This is a step toward synergy, further accentuated by propositions to integrate mitigation and adaptation strategies in national plans and development policies (Cameroon’s INDC, 2015).

However, the bulk of the current research discusses synergy at the theoretical and conceptual level without pointing out how it can be planned and implemented. Despite the promising potential of the synergy concept and the salient need for synergistic approaches for addressing climate change, knowledge on how the approach is being implemented “on-the-ground” in Cameroon is lacking, as research conducted thus far is restricted on either mitigation or adaptation with little emphasis on synergies between mitigation and adaptation (Nkem et al., 2010; Brown et al., 2011; Sonwa et al., 2012; Somorin et al., 2014; Awono et al., 2013; Chia et al., 2016). Therefore, the objective of this paper is twofold:

1. analyze efforts made by the Government of Cameroon and other stakeholders to promote synergies between climate change mitigation and adaptation; and
2. suggest possible options for promoting these synergies in Cameroon.

3. Methods
To accomplish the objective of this study, qualitative methods were used for analysis. A number of metrics were adopted from a study by Duguma et al. (2014a) as indicators of potential synergy between adaptation and mitigation. These indicators were the basis for the two-pronged approach applied in data collection, namely, document review and interviews.

3.1 Metrics
A number of metrics were adopted from a study by Duguma et al. (2014b) as indicators of potentials for synergy between mitigation and adaptation. These relate to national-level policy-making and implementation processes and are aimed at assessing to what extent synergy is considered at this level. The following metrics were adopted:

- **National-level laws, policies and strategies for climate change**: Climate change-specific documents, laws, policies and strategies governing sectors that significantly contribute to and/or are affected by climate change were analyzed for whether and how they captured climate change and synergy.
- **Projects for synergy**: Respondents were asked to provide details of projects which addressed both mitigation and adaptation to gain a better understanding of components that were crucial to their implementation, success and possible scale-up.
- **Implementing institutions and associated funding**: State and non-state institutions were surveyed to gain an understanding of their role in addressing climate change. The study limited itself to institutions at the national level given their decision-making roles in climate change issues. They were drawn from various government ministries, international organizations, non-governmental organizations (NGOs) and research bodies.
3.2 Data sources

Document review: A synthetic review of some national documents was carried out to gain insights on whether and (if applicable) how climate change is addressed. These documents included government legislations, policies, strategies, programs and plans. A total of nine of these were reviewed. Furthermore, journal articles, civil society reports and working papers were reviewed to gain further insights on synergies between climate change mitigation and adaptation.

Interviews: Semi-structured open-ended interviews were conducted with state and non-state actors from institutions (e.g. the Ministry of Forestry and Wildlife [MINFOF]; the Ministry of Environment Protection of Nature and Sustainable Development [MINEPDED]; the Ministry of Agriculture and Rural Development; the Ministry of Livestock Fisheries and Animal Industry; Ministry of Water Resources and Energy; the Ministry of Social Affairs; the Ministry of Territorial Administration and Decentralization; and the Ministry of Social Affairs) whose mandate include (or is greatly affected by) climate change. In total, 18 key country resource personnel were interviewed. Specifically, they included representatives from the government, NGOs, private sector and university institutions; they were strategically selected for the following reasons:

- Government institutions are often involved in formulating laws, policies, strategies and programs to address climate change.
- NGOs and private sector are widely engaged in implementing climate change related projects.
- Universities are engaged in climate change through research and training activities.

Interview protocols focused on institution and actors, role, participation, network, motivations, challenges and projects/activities for synergies between climate change mitigation and adaptation.

Data gathered from document review were analyzed for their consideration of whether “climate change” was mentioned in the documents, and if so, to what context it was addressed. Those that integrated both aspects of climate change without a significant bias for either were considered to promote synergy between the two. Data from the interviews complemented the document review, with summary statistics generated using the Windows Excel© software.

4. Results

4.1 Enabling factors for synergy

4.1.1 Policies, laws and strategies. Major policy documents in Cameroon such as the 1994 Forest Law, the 1995 Forest Policy, the 1996 Framework Law on Environment, the PRSP, the 1999 Agricultural Policy, the REDD + Readiness Preparation Proposal (REDD + RPP) and the first National Communication to UNFCCC (NC1), pay little attention to climate change adaptation. As shown in Table I, with the exception of the REDD + RPP, sectoral policies, laws and strategies are void of tangible reference to climate change but make provisions for some activities that directly or indirectly address climate change. Although there is no specific law on climate change in Cameroon, the 1996 Framework Law on Environment sets a basis for all environmental policies, including steps taken to reduce GHG emissions. According to this framework law, “every person shall have a right to a healthy environment, the protection and improvement of which shall be the duty of the state and every citizen”. Furthermore, the forest law and policy obliges the state to “protect the national forest heritage” and “ensure resource (forest) renewal through regeneration and...
| Law/policy/strategy    | Vision/goal                                                                 | How climate change is addressed                                                                                     |
|------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 1995 Forest Policy     | Preservation of the environment and its resources through the protection of national forests | Forest regeneration through tree planting/reforestation<br>Set up a national policy on environmental management<br>Promote agroforestry activities in slash and burn agriculture and environmental protection<br>Create forest reserves which cover a minimum of 30% of the national territory |
| 1994 Forest Law        | Lay down forestry, wildlife and fisheries regulations, with a view to attaining the general objectives of the forestry, wildlife and fisheries policy, within the framework of an integrated management<br>Ensuring sustainable conservation and use of the said resources and of the various ecosystems | Forest conservation and regeneration, Re-afforestation, Natural or artificial regeneration, Forest protection |
| PRSP                   | Provide a framework for domestic policies and programs, as well as for foreign assistance, with the overall aim of reducing poverty | —                                                                                                                  |
| 1999 Agricultural policy | Ensure food security of the populations and establish the bases for the launch of the agricultural revolution | —                                                                                                                  |

(continued)
| Law/policy/strategy                                      | Vision/goal                                                                 | How climate change is addressed                                                                 |
|---------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| First National Communication to UNFCC                  | Presents an overview of national circumstances, particularly GHG inventory, negative impacts, analyses mitigation strategies, vulnerability and adaptation assessments | Management of protected areas  
Rational management of marine and coastal resources  
Integration of an environment component in the spatial planning policy  
Protection, improvement and conservation all forest resources  
Referral to cheap alternative energy sources (other than timber)  
Reforestation  
Reduce GHG emission and sequester Carbon  
The practice of fallow  
Use of improved plant varieties more tolerant to climate hazards  
Crop diversification and rotation, Adjust farming calendar  
Creation of reserves and delineation of mangrove removal areas (coastal zones) |
| 1996 framework law on environment (void of the word climate change) | ensure sustainable development through environmental protection and sustainable use of natural resources | Management of protected areas  
Rational management of marine and coastal resources  
Integration of the environment component in the spatial planning policy |
| REDD+ Readiness Preparation Proposal                   | Present initiatives and projects which can add to the development of activities aimed at sharing information, raising awareness and training all the stakeholders in the REDD+ process | Train stakeholders on concepts on CC and REDD+, as well as the role of forest in mitigating CC  
Construct and adapt various tools and equipment to provide the stakeholders with relevant information concerning climate change and REDD+ |
reforestation so as to sustain its potential”. The interpretation of this has been stretched to include carbon sequestration and thus climate change.

Although government action and commitment still need to be visibly strengthened through adopting an integrated climate change policy option, the submission of the REDD + RPP in 2013 and the National Adaptation Program of Action (NAPA) to the UNFCCC is expected to “position” the country for future access to climate change financing for addressing synergy challenges at the national level.

4.1.2 Practice dimension (projects). Although some national documents propose various activities (projects) which directly or indirectly addresses climate change (Table II), the sampled institutions/organizations assert having activities and projects exhibiting climate change mitigation and/or adaptation with potentials for synergy (Table III). These projects details reveal some of the collaborations between different actors. Although much of the financing and to a lesser extent technical support still comes from foreign governments and development partners, local institutions take a lead in implementation. Generally, besides being the project initiators, there also seems to be great involvement of government

| Policy/strategy                        | Program/projects/activities related to climate change                                                                 |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| 1994 Forest Law                       | Annual inventory of volume of trees to be logged                                                                       |
| First National Communication to UNFCC | Develop, inform and sensitize the population on a National Action Plan to Fight against desertification                  |
|                                       | Develop an ozone program aimed at progressively controlling and eliminating chloro-fluoro-carbon in the atmosphere         |
|                                       | National capacity building and development of activities geared at sensitizing the public on issues of climate change       |
|                                       | Develop projects (an activities) geared at sequestering carbon and reducing GHG emission                                 |
| 1996 Framework Law on Environment      | Creation of a database, website and information system on climate change                                               |
|                                       | Development of sectoral projects for climate change mitigation and adaptation                                          |
| REDD+ Readiness                       | Identification of the present and future causes of deforestation and forest degradation by agro-ecological zone and by sector |
| Preparation Proposal                  | Analysis of the REDD+ initiatives/pilot projects developed by civil society                                            |
|                                       | Development of plantations with a direct link to afforestation                                                        |
|                                       | Promotion of crop rotation and reclamation of fallow land                                                             |
|                                       | Fertilization through the development of ecological farming techniques, particularly the development of agroforestry, composting, cover cropping methods/systems |
|                                       | The improvement of carbonization techniques (improved haystack for carbon production)                                 |
|                                       | Development of renewable and alternative energies                                                                    |
|                                       | Development of plantations/reforestations for energy purposes (in particular in the arid regions)                   |
|                                       | Strengthening the regulatory framework for forestry to adapt it to all agro-ecological zones and to all ecosystems including mangroves |
|                                       | Reforestation, restoration and replanting for the sequestration of carbon and the recycling of wood for various purposes in function of the agro-ecological zone |
|                                       | Pilot projects that allow reduction of pressure on resources and thus on GHG emissions in various agroecological zones |

Table II. Proposed activities (projects) directly or indirectly addressing climate change
| Project name                      | Project goal/objective (or brief description)                                                                 | Implementing agency       | Project initiator | Funder                  | Partners                        |
|----------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------|------------------|-------------------------|---------------------------------|
| PACC                             | The project seeks to:                                                                                         | UNDP (United Nations Development Programme) | MINEPDED          | Japanese government    | MINADER, MINEPIA, Civil society, NGOs |
|                                  | Create a National adaptation program                                                                           |                           |                  |                         |                                 |
|                                  | Develop a national Action plan for climate change adaptation                                                  |                           |                  |                         |                                 |
|                                  | Multiplication of National adaptation plan                                                                   |                           |                  |                         |                                 |
| PSEF                             | The project seeks to promote the sustainable management of rainforests and savanna lands:                    | Japan International cooperative system | MINEPDED          | Japanese government    | MINEPDED MINFOF                 |
|                                  | Increase local community involvement in and benefits from sustainable management of natural resources,       |                           |                  |                         |                                 |
|                                  | Improve the institutional and organizational capacity to implement new policies and regulations for forest management and timber industry development, |                           |                  |                         |                                 |
|                                  | Enhance conservation of biodiversity, Supply environmental services of national and global relevance,         |                           |                  |                         |                                 |
|                                  | Assist in the finalization of the National adaptation plan, and                                               |                           |                  |                         |                                 |
|                                  | Promote multiplication of National adaptation plan                                                             |                           |                  |                         |                                 |
| Program with an integrated approach to climate change                                                        | Mitigation of Climate Change by developing a national strategy for REDD+                                     | UNDP                      | CN-REDD+           | Japanese Government          | -                               |
|                                  |                                                                                                              | MINEPDED                  | MINEPDED          |                         |                                 |

(continued)
| Project name                        | Project goal/objective (or brief description)                                                                                                                                                                                                 | Implementing agency | Project initiator | Funder                                                                 | Partners         |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------|------------------------------------------------------------------------|------------------|
| Ngoyla Mintom Project            | Has three main components; *Component 1*: strengthen government and civil society capacity for participatory planning and management of the core areas that are proposed for conservation and low impact community. *Component 2*: design and implement a livelihood support mechanism. *Component 3*: design and implement a long-term monitoring and Evaluation system for the Ngoyla Mintom Forest Block. | –                   | MINFOF           | GEF (Global Environmental Fund)                                       | MINEPDED, MINEPAT |
|                                  | The project aims at increasing existing forest cover by supporting reforestation activities and forest regeneration.                                                                                                                                   | –                   | MINFOF           | Government of Cameroon                                                 | –                |
| Support to reforestation activities | The project aims at fighting desertification in the Savannah zones of the Northern regions of the country through reforestation and afforestation.                                                                                                           | MINEPDED, Local NGOs | MINEPDED         | MINEPDED                                                              | Local NGO        |
| “Project Sahel Vert”             |                                                                                                                |                     |                  |                                                                        |                  |
| Strategy for the modernization of wood energy | Faced with the present challenges of illegal wood exploitation and increase demand for wood energy, the project seeks to develop and integrate a value chain for wood energy into the national energy policy by promoting the production and utilization of renewable energy while ensuring a sustainable management of forest resources and environmental protection. | GIZ/ProPSFE Maroua  | GIZ              | GIZ (Deutsche Gesellschaft für Internationale) and CIDA (Canadian International Development Agency) | MINFOF, MINEPDED, MINEE |

Table III.
| Project name | Project goal/objective (or brief description) | Implementing agency | Project initiator | Funder | Partners |
|-------------|-----------------------------------------------|---------------------|------------------|--------|---------|
| Carbon Sequestration | Increase existing carbon stocks through reforestation | National Water and Forestry School | National Water and Forestry School | AFD (the French Development Agency) | – |
| Faced with high degradation of the mangrove ecosystems, the project aims at proposing a strategy that will enable the Government of Cameroon to develop and implement a national strategy and policies for mangroves that will enable the sustainability of this resources while improving the living conditions of the local population | Cameroon Ecology | CAMECO/REFACOF Plateform | ITTO (International Tropical Timber Organization) and FAO | Municipal councils |
| Governance of forest initiatives | Cameroon Ecology | CAMECO/REFACOF Plateform | WRI (World Resource Institute) | – |
| Capacity building of communities | Cameroon Ecology | CAMECO/REFACOF Plateform | CIDA (Canadian International Development Agency) | – |
| Support to coastal region in their effort on climate change adaptation | MINRESI | MINRESI | World Bank Global Financing Facility Funds | MINEPDED |
| Conservation and sustainable utilization of forest resources | MININFOF | MININFOF | German Government | – |
| Capacity building on climate change | MINRESI | MINRESI | Germany | – |
| Integrated fight against climate change | MINRESI | MINRESI | Germany | – |
| Second National Communication on climate change | UNEP (United Nations Environment Programme) | MINEPDED | World Bank Global Financing Facility Funds | Government ministries |
institutions in providing technical backing. With the exception of MINOF and MINEPDERD funding synergy activities, capacity building, researching, facilitation (of participation in climate change dialogue platforms/conferences) and implementation of projects geared toward synergy were cited by the respondents as synergy activities of their institutions.

4.1.3 Institutional arrangements. Respondents pointed out that besides a national REDD steering committee (co-chaired by MINEPDERD and MINOF) which exists, currently, no national committee/institution in charge of climate change exists in Cameroon. The responsibility of climate change is therefore embedded within MINEPDERD with limited coordination and support from other relevant ministries to mainstream climate change across sector programs. Thus, most knowledge and capacity on climate change is restricted to a small number of people/staff within MINEPDERD and to a lesser extent MINOF and will therefore take time for other sectoral ministries to incorporate climate change into their strategies and development plans.

Nevertheless, the design and implementation of climate change projects, environmental planning and reporting, national communications on climate change, implementation of guidelines for the IPCC, advice and monitoring of documents linked to REDD+ and climate change were all cited as roles institutions (such as MINOF and MINEPDERD) play in general in addressing climate change in Cameroon. In addition, capacity building and elaboration of projects, monitoring and measuring carbon fluxes and addressing issues linked to climate change were equally mentioned. Other key institutional mandates highlighted by respondents included facilitating participation of communities in activities linked to climate change and defining forest policies with greater incidence on climate change mitigation and adaptation.

However, although most respondents stated that their institutional mandate was focused on both mitigation and adaptation with no bias for either strategy, awareness of climate change, both inside and outside of government as of now, is largely limited to an understanding of environmental and climate related impacts at the local levels.

4.2 Actor participation for synergy
Several respondents stated that they participate at the national level to address climate change. Some examples of their roles at the national level included the provision of technical support, acting as the focal point on issues related to climate change, serving as the president or chairperson on climate change issues, crafting the REDD+ plan of action and strategic coordination. That said, it is important to note that although communication within members of the national-level committees addressing climate change is done on a monthly basis, climate change response is facing weak information dissemination and support between actors especially, state actors, and weak institutional links between state actors and non-state actors. This is shown in the frequency of interaction between relevant national-level actors, as presented in Table IV.

4.3 Actor to actor networks for synergy
Most respondents cited the government (especially MINEPDERD) as the most influential actor in integrated climate change policy implementation. Furthermore, they cited influencing political debates, support for programs and projects relating to climate change, lobbying, mobilization of funds, knowledge and mastery of the climate change, institutional mandate and expertise and official authority responsible for REDD+ implementation as criteria that were used for this selection. Although MINEPDERD is the major institution defining and implementing all climate response policies and actions within the national and international arenas, with forest taking central stage in the present and future climate
### Table IV.

Interaction between climate change actors in Cameroon

| Actors                                                      | Private company | MINEPDED  | MINEPIA  | NGO   | MINFOF | MINRESI | MINADER |
|-------------------------------------------------------------|-----------------|-----------|----------|-------|--------|---------|---------|
| Ministry of Environment Nature Protection and Sustainable Development (MINEPDED) | Often           | –         | Always*  | Always| Always | –       | Often   |
| Ministry of Energy and Water Resources (MINEE)              | –               | Often     | Rarely   | Sometimes | Sometimes | Sometimes | –       |
| Ministry of Forests and Fauna (MINFOF)                     | Sometimes       | Always    | Sometimes* | Always | –     | Rarely*  | Always*  |
| Ministry of Agriculture and Rural Development (MINADER)     | Rarely          | Often     | Often    | Sometimes | Rarely* | Sometimes | –       |
| Ministry of Finance (MINFI)                                 | –               | Often     | Never    | Rarely | Rarely | Rarely   | –       |
| Ministry of Livestock, Fishery and Animal Industry (MINEPIA) | –               | Often*    | –        | Sometimes | Rarely* | Sometimes | –       |
| Ministry of Scientific Research and Innovation (MINRESI)   | Rarely          | Often     | Sometimes | Rarely | Sometimes* | –       | Sometimes |
| Ministry of Higher Education (MINESUP)                      | Rarely          | Often     | Never    | Rarely | Sometimes | –       | –       |
| Technical Secretariat of the REDD+ Steering Committee (STR) | Always          | Often     | Always   | Always | Sometimes | –       | Often   |
| IPCC Focal point                                            | Always          | Often     | sometimes| Always | Rarely | Always   | –       |
| National Secretariat for CDM                                | –               | Often     | Never    | –     | Rarely | –       | –       |
| UNFCCC Focal Point                                          | Always          | Often     | Sometimes | Always | Sometimes | –       | –       |

**Note:** *Frequency varies with respondent’s opinion*
change regime, MINFOF has become a relevant actor. However, how the two ministries and other sectorial ministries operate to guarantee better climate response relating to mitigation and adaptation in the forest sector still remains a big challenge. International organizations such as the UN and the World Bank were also rated as the most influential organizations currently promoting National Appropriate Mitigation Action, NAPA, REDD+ and national climate change policy.

4.4 Motivations and drawbacks to synergy
Almost all the respondents asserted that the synergy approach to climate change is more appropriate than the segregated approaches to mitigation and adaptation. One of the main reasons underpinning this assertion included the fact that climate change was a reality, and thus, there was a need to mitigate and adapt to its impact simultaneously. Other reasons included the fact that there are certain adaptation actions such as agroforestry that favor mitigation and adaptation. Moreover, apart from the fact that better results are obtained, it is more coherent and suitable to adopt a synergistic approach to climate change to avoid duplication of activities, the waste of financial, technical and material resources and also create the chance of mainstreaming climate change into other development endeavors.

As both mitigation and adaptation have a cost associated to it, most respondents stated that financial incentives are necessary to move toward an integrated approach to climate change. Inadequate financial resources or funding was cited as one of the most important challenges stakeholders are (and would continue) facing as a result of adopting integrated approaches to climate change. Other challenges as posited by the respondents included inadequate coordination, insufficient sensitization and capacity building, ineffective implementation, inadequate compliance, lack of proper transparency and inadequate public participation. Overall, respondents were of the view that sensitization, education and training, promotion and financing of relevant pilot projects, knowledge generation, effective implementation of relevant laws and policies, data sharing, collaborative action between sectorial administration and stakeholders and financial support to the private sector constitute effort that should be undertaken to address climate change issues effectively, especially in the developing countries land use sector.

5. Discussion
While it seems that climate change is just coming to the forefront as a priority in Cameroon, the government is largely focused on mitigation as per its laws, policies and strategies, as well as its submission of the NC1 and development of its national REDD+ strategy (after the validation of its REDD R-PP 2012). Although the government is also preparing its first NAPA, which is expected to increase understanding around adaptation needs, Cameroon is yet to design a formal institutional framework for climate change adaptation (Davies, 2011; Chia et al., 2016). Although the government is well aware of the eventual impacts of climate change on various sectors, study results revealed that there is currently no specific program on climate change adaptation in Cameroon.

Study results further revealed that the institutional mandate of most respondents was focused on both mitigation and/or adaptation with no bias for either strategy. This observation reflects the fact that harnessing synergies provide the necessary capacity and opportunity to effectively adapt and mitigate (Smith and Olesen, 2010; Ravindranath, 2007; Bizikova et al., 2007). As Illman et al. (2013) explain, concerted efforts aimed at harnessing adaptation and mitigation strategies have great potential in building the necessary knowledge base, institutional capacity and sectoral collaboration to simultaneously guide economies toward low/zero-emission pathways and accelerate adaptation and required
resilience building. Thus, the potential and need for integrating adaptation strategies and practices in mitigation projects, as well as establishing a bridge between science, policy-making and development cooperation, cannot be understated (Ravindranath, 2007; Bizikova et al., 2007).

Additional insights were gained by investigating stakeholders’ participation in harnessing synergy. Interestingly, although cross-sectorial interaction is weak, several respondents stated that they have participated in national-level committees and workshops to address climate change. This appears to support Tompkins and Adger’s (2004) assertion of collective stakeholder action to inform understanding of climate response capacity. Thus, harnessing the strengths of private, public and nonprofit partners through multi-stakeholder partnership is critical in addressing existing regulatory, participation, resource and learning gaps (Kehbila et al., 2014; Pinksea and Kolka, 2012). Strengthening partnerships between government, the private sector and civil societies is therefore crucial in successfully harnessing synergy between mitigation and adaptation measures (Huong and Dhakal, 2013). Such partnerships promote better decision-making by ensuring that the perspectives of the main actors concerned with regards to a particular decision are heard and incorporated at all stages through dialogue and consensus building.

With regard to stakeholder power, most respondents cited government (especially MINEPDED), as well as the UN and the World Bank, as the most influential actor in promoting national mitigation actions and integrated climate change policy implementation. As Pocklington (2015) puts it, governments have the legal obligations to protect their citizens from the deleterious impacts of climate change. With regards to the UN mandate, member states have veto powers in any climate negotiations based on the principle of consensus building (Dimitrov, 2010). That said, the contribution of science is a key component in the climate negotiation process, although a number of politicians appear to be disinterested and even uninterested in the science of climate change. From that premise, the creation of a national technical committee to oversee and provide scientific guidance to the government on the synergies between adaptation and mitigation is vital.

With regard to the constraints on synergy, the study results revealed that a majority of institutions rated inadequate financial resource or funding as the most important challenge in implementing integrated approaches to climate change. This view is supported by Illman et al. (2013), Xiang et al. (2001) and Bowen (2011), who pointed to the role of private and public finance as crucial in building enabling environments and capacities to harness mitigation and adaptation strategies. Despite this, financial constraints have stalled the development and implementation of mitigation and adaptation projects in most African countries (Thomas et al., 2010; Grubba, 2011), particularly with the advent of the credit crunch (Grubba, 2011). Thus, promoting private sector investment and sponsorship, as well as committing funding for joint mitigation and adaptation projects from relevant ministries and international organizations, is considered vital. Also, Cameroon not being a member of the LDCs initiatives, still has financial opportunities to explore through the UNFCCC by accelerating the slow process of preparing its national adaptation program on the one hand and developing policy options that fit into the operational guidelines of the different mitigation financial mechanisms (e.g. Norway’s International Climate and Forests Initiative) on the other hand (Chia et al., 2015).

Other challenges as posited by the respondents included inadequate coordination, insufficient sensitization and capacity building, ineffective implementation, inadequate compliance, lack of proper transparency and inadequate public participation. These findings are not different from those indicated in previous studies by Alemagi et al. (2014), Fünfgeld (2010), Thomas et al. (2010), Smith and Olesen (2010) and Biesbroek et al. (2011), who pointed
to structural, educational and institutional challenges, as well as administrative and
governance issues, such as the lack of capacity and coordination, ambiguity of the legal
system, conflicting timescales, fragmentation, lack of awareness and communication,
corruption and the lack of motives and willingness to act, as the main constraints to
implementing integrated approaches to climate change. In this vein, developing effective
and creative community awareness and enforcement programs and integrating mass media
coverage to communicate the right message, as well as involving stakeholders in joint
decision-making at all stages and various aspects of mitigation and adaptation projects, are
critical.

6. Conclusions and recommendations
The analyses presented in this paper highlight efforts made by the Government of
Cameroon and other relevant institutions to promote synergies between climate change
mitigation and adaptation. The results revealed that although policies, laws, strategies and
institutional arrangements relevant for promoting an integrated approach to climate change
are insufficient in Cameroon, some promising projects and activities that harness great
potential for synergies exist. Furthermore, results also showed that interaction between the
government ministries and NGOs was poor, and inadequate financial resources or funding
was the major challenge stakeholders are and would continue to face as a result of adopting
integrated approaches to climate change. Other challenges that may impede the adoption of
integrated approaches to climate change included inadequate coordination, insufficient
sensitization and capacity building, ineffective implementation, inadequate compliance, lack
of proper transparency and inadequate public participation.

With all that has been said, specific recommendations for overcoming these constraints/
challenges and promoting synergy between climate change mitigation and adaptation in
Cameroon have been identified in this paper:

- A national technical committee must be created to oversee and provide scientific
guidance to the government on the synergies between climate change adaptation
and mitigation. This is indeed fundamental, as this will go a long way to inform
relevant governmental bodies about relevant scientific information that they are not
aware of.

- Private sector investment and sponsorship must be promoted, as well as
committing funding for joint mitigation and adaptation projects from relevant
ministries and international organizations. The involvement of the private sector is
indeed important as they are quite keen in investment in a sector that will benefit
them in a long run.

- Effective and creative community awareness and enforcement programs must be
developed and mass media coverage must be integrated to communicate the right
message on climate change adaptation and mitigation.

- Stakeholders must be involved in joint decision-making at all stages and various
aspects of mitigation and adaptation projects. As Rosenbaum (2000) explains, the
merit of involving all stakeholder’s in climate change-related issues is that it paves
the way for faster and cost-effective results.

- Networks and partnerships must be created and knowledge must be shared with
countries having initial experience in the design and implementation of integrated
strategies to climate change. Implementation of these key aforementioned
recommendations will help in promoting synergies between climate mitigation and
adaptation practices in Cameroon.
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