International Journal of Environmental Sciences & Natural Resources
ISSN: 2572-1119

Research Article
Volume 33 Issue 5 - August 2024
DOI: 10.19080/IJESNR.2024.33.556376

Int J Environ Sci Nat Res

Governance in Landscape Restoration Interventions in Cameroon's Afromontane Region: The Example of the Bamboutos Mountain

Tchoutezou Guy Herman Zanguim[1], Nyong Princely Awazi[1,2]*, Lucie Felicite Temgoua[1] and Martin Ngankam Tchamba[1]

[1]*Department of Forestry, University of Dschang, Cameroon*

[2]*Department of Forestry and Wildlife Technology, The University of Bamenda, Cameroon*

Submission: August 3, 2024; **Published:** August 14, 2024

***Corresponding author:** Nyong Princely Awazi, Department of Forestry, Faculty of Agronomy and Agricultural Sciences, the University of Dschang & Department of Forestry and Wildlife Technology, the University of Bamenda, Cameroon

Abstract

Restoration of degraded forest landscapes is now high on the international political agenda. Cameroon has committed to restoring more than 12 million of its degraded forest lands over a 20-year period. Among these landscapes, the Bamboutos Mountains in the western highlands are a priority area. In order to contribute to this process, baseline studies are needed to support stakeholders in achieving their restoration objectives, including the governance arrangements. To this end, this study aimed to assess the quality of current governance for the restoration of the Bamboutos Mountain in order to inform the various stakeholders and decision-makers on the prospects for good governance for the restoration. It took place from February to June 2022 in six riparian communities on the western slopes of this landscape. The data collection was done through an interview guide with the stakeholders where it was a question of assessing on a 5-point score, the quality of governance through the 03 pillars and the 06 principles of governance proposed in the FAO-PROFOR evaluation framework. The Wilcoxon one-tailed statistical test was used to measure the overall quality of this governance in the R software. The results of this assessment show that Pillar 1 on policy, legal, institutional and regulatory frameworks for restoration of the degraded Bamboutos Landscape has a good score of 3.35/5; Pillar 2 on planning and decision-making processes on the other hand has a poor score of 2.95/5 and Pillar 3 on implementation, enforcement and compliance with regulations also gets a good score of 3.16/5. Overall, it appears that current governance is good for the restoration of the Bamboutos Mountains in terms of the results achieved. However, the planning and decision-making process still needs to be improved.

KeywordsGovernance; Afromontane; Landscape restoration; Bamboutos Mountain; Cameroon

Introduction

Central Africa's forest ecosystems, the world's second-largest block of dense rainforest after the Amazon, serve as crucial reservoirs of carbon and biodiversity, benefiting both the countries in the region and the entire planet [1]. These forest landscapes support the livelihoods of approximately 60 million people and contribute to the food security of an additional 40 million residing in nearby urban areas [2]. Moreover, they hold significant social and cultural value for indigenous peoples and local communities [2]. Given their ecological, economic, social, and cultural significance, Central African forest landscapes have become focal points of international discussions aimed at preserving these unique and globally important ecosystems [1]. However, these forest landscapes are subject to numerous threats related to unsustainable and illegal logging, slash-and-burn agriculture and intensive livestock farming in densely populated areas, poaching of animal species, exploration and mining [3]. These threats cause deforestation and degradation of forest formations with consequent loss of biodiversity and account for about 10-12% of total global anthropogenic greenhouse gas emissions responsible for climate change [4,5]. The international community has responded to the threats of deforestation and forest degradation by launching initiatives such as the African Forest and Landscape Restoration (AFR100) initiative. By September 2016, 21 African countries, including Cameroon, had pledged their commitment to participate in this initiative. AFR100 aims to expedite the restoration of 100 million hectares of deforested and degraded landscapes across Africa by 2030. This ambitious endeavor seeks

to enhance food security, bolster resilience to climate change, mitigate its impacts, and alleviate rural poverty [6].

Cameroon pledged in 2017 to restore 12 million hectares of its degraded ecosystems, aligning itself with global initiatives like the New York Declaration on Forests and the Bonn Challenge, which aims for a total restoration of 350 million hectares worldwide by 2030 [7]. This commitment not only supports the Sustainable Development Goals (SDGs) 13 and 15 and the Paris Agreement on climate change but also contributes to the objectives of the UN Conventions on Biodiversity and Combating Desertification [6]. Cameroon has significant opportunities to expand forest landscape restoration efforts, encompassing deforested forest lands as well as agricultural and pastoral landscapes depleted of tree cover [8]. With an estimated annual rate of anthropogenic deforestation and degradation at 0.90%, and projections indicating a potential tripling of this rate in certain agro-ecological zones by 2035 [4], Cameroon faces both challenges and opportunities in its restoration efforts. The final report of the Forest Landscape Restoration Potential Assessment in Cameroon identified the Far North, Northwest, West and Central regions as priority areas for restoration being in the very high degradation category within the study [9]. Also, in its national strategy for reducing emissions from deforestation and forest degradation [10], Cameroon has respectively oriented 02 of the 03 programmes towards landscape restoration and management for resilience and adaptation to climate change in the far north and integrated watershed management in the western highlands.

The agroecological zone of the Western Highlands is an agro-pastoral zone par excellence with a high economic importance of cattle breeding and agriculture in the form of fairly intensive production systems [9]. According to the same author, the area consists of savannah with a mosaic of fields and remnants of trees and shrubs. Very few parts with forest vegetation are still visible. The two most important forest reserves in the region (Bamboutos and Santchou) are highly degraded and more than 50% invaded by agricultural activities [11]. Although the population has a culture of silvicultural practices, especially eucalyptus, the plantations are small in size, but also very numerous [9]. It is an agro-forestry landscape with agriculture predominating. The Bamboutos Mountain chains are located in this area and described as the most degraded, which play a predominant role as a water tower for the town of Mbouda, were the subject of a project proposal for restoration, submitted to the Ministry in charge of forests in Cameroon by GIZ and Rainforest Alliance respectively [7,11]. It is in this perspective that this study is conducted on the assessment of governance arrangements for the restoration of the degraded Bamboutos Mountain landscapes. The subject is justified by the conjunctural challenges inherent to good governance for successful restoration of this forest landscape and the imperative need to find viable and inclusive solution options to support the State of Cameroon in honouring its commitment to AFR100.

Materials and Methods

Study area

The Mount Bamboutos landscape, situated on the Bamiléké plateau in the Western Highlands of Cameroon lies between latitude 5°25' and 5°45' North and longitude 10°00' to 10°15' East. This area comprises a significant volcanic shield, reaching an altitude of 2740 meters. The communities residing along the slopes of the Bamboutos Mountains are distributed across three regions (West, North-West, and South-West), four divisions (Bamboutos, Menoua, Mezam, and Lebialem), and seven sub-divisions (Babadjou, Batcham, Nkong-Ni, Fongo-Tongo, Santa, Alou, and Wabane), encompassing a total of 30 villages. For reasons of insecurity due to the socio-political crises in the North-West and South-West Regions, the study area was restricted to the slopes of the Western region. Data collection took place in the Sub-Divisions of Babadjou, Batcham and Nkong-Ni, as well as the towns of Dschang, Bafoussam and Mbouda, which are home to the administrative services and offices of the various key stakeholders managing the Bamboutos Mountain biodiversity hotspot.

Data collection and analysis

Primary data collection was done following the methodology or approach of FAO-PROFOR framework on forest governance assessment [12]. The interview guides to the key stakeholders and informants were designed to respect the three pillars of forest governance which captured: (1) the policy, legal, institutional and regulatory frameworks; (2) the planning and decision-making process and (3) the implementation, enforcement and compliance of restoration initiatives on the Mt. Bamboutos. These three pillars were cross-referenced with the six principles of the evaluation framework, which are: accountability, effectiveness, efficiency, equity, participation and transparency. The questions formulated were closed-ended to ease analysis, as well as open-ended questions for more details. The intention was to collect adequate information that shows the level of application of governance principles in the Bamboutos Mountain landscape particularly the 03 pillars, 13 components and 47 sub-components of governance. For each question proposed, a scale (indicators) was proposed to the resource person as follows: 1= Strongly disagree; 2= Partially disagree; 3= Neither agree nor disagree; 4= Partially agree; and 5= Strongly agree. Different categories of resource persons were interviewed (Table 1).

In total, 51 key informants and experts responded to our interviews from various organizations, including 25 people from 8 institutions in the public administration, 8 researchers from research institutions and universities, 13 people from 3 international organizations and 5 people from decentralized territorial authorities. These stakeholders were selected on the basis of their experience in the restoration of mountain landscapes. Effort was made to select stakeholders from as many backgrounds as possible to get different perspectives and collect adequate data

How to cite this article: Tchoutezou Guy H Zanguim, Nyong P Awazi, Lucie F Temgoua, Martin N Tchamba. Governance in Landscape Restoration Interventions in Cameroon's Afromontane Region: The Example of the Bamboutos Mountain. Int J Environ Sci Nat Res. 2024; 33(5): 556376.
DOI: 10.19080/IJESNR.2024.33.556376

for the study. Qualitative and quantitative information collected from the 51 key and expert informants was adequate for this study considering that the total number of targeted key and expert stakeholders in and around the Bamboutos mountain landscape was 60. This gives a solid database for a reliable evaluation of the governance of the Bamboutos Mountain restoration project. Ethics committee approval was obtained from the University and informed consent was sought from all the interviewees.

Table 1: Categories and number of actors interviewed during governance assessment.

Type of Organisation	Name of the Institution	Number of Resource Persons Interviewed
Public administration	MINEPDED	4
	MINFOF	5
	MINADER	4
	MINCAF	2
	MINEE	1
	MINEPAT	2
	MINEPIA	5
	MINPMEESA	2
Research institutions	IRAD	3
	University of Dschang	5
Development partners	ERuDeF	4
	GIZ	6
	Rainforest Alliance	3
Decentralised local authorities	Babadjou, Batcham, Mbouda, Dschang and Nkong-Ni town halls	5
Total number of resource persons interviewed		**51**

Besides the primary data collected from resource persons, relevant literature from peered reviewed articles, gray literature, projects/programmes documents on restoration initiatives on Mt Bamboutos, from councils, dissertations and theses from universities were also consulted.

Data was treated and imputed into the Microsoft Excel 2013, and the R version 4.0.3 software. We used Microsoft Excel to derive descriptive statistics (charts). To test for normality, the Shapiro-Wilk test was utilized, revealing non-parametric data. Student's t-test was then applied to evaluate the scores of each pillar, as well as the final or average evaluation score. Additionally, the Kruskal-Wallis test was used to compare means across the three governance pillars. These tests were chosen because the data involved qualitative variables quantified by point scales or ranks, indicative of an ordinal scale. The Wilcoxon one-tailed statistical test was used to measure the overall quality of governance using the R software. The fundamental hypothesis tested using these tests was "Governance is critical for the successful restoration of the Bamboutos mountain in Cameroon". Using a combination of these statistical tests was vital as it led to scientifically robust and technically sound findings.

Results

Governance for successful restoration of the Bamboutos Mountain assessed according to the core elements of the forest governance assessment framework consisting of 03 pillars, 13 components and 47 sub-components yielded the results presented in this section.

Pillar 1: Policy, legal, institutional and regulatory frameworks

Pillar 1 of the framework focuses on the long-term systems of policies, laws, rules, and regulations pertaining to the restoration of degraded forest landscapes. It aims to evaluate the clarity, coherence, and interaction of these systems to establish the context for decision-making regarding forest landscape restoration. The components of Pillar 1 assess the existence and quality of forest-related policies, laws, and regulations, as well as the systems safeguarding forest tenure and rights. Additionally, they observe the functionality of key institutional frameworks and analyze the extra-sectoral linkages influencing governance in the forest restoration process. Furthermore, these components scrutinize the alignment between forest policies and broader development policies, including financial incentives and economic instruments, while also considering equity in the distribution of resources and benefits derived from forest restoration. Assessment is conducted using a 5-point Likert scale across five components and twelve sub-components outlined in Table 2.

How to cite this article: Tchoutezou Guy H Zanguim, Nyong P Awazi, Lucie F Temgoua, Martin N Tchamba. Governance in Landscape Restoration Interventions in Cameroon's Afromontane Region: The Example of the Bamboutos Mountain. Int J Environ Sci Nat Res. 2024; 33(5): 556376. DOI: 10.19080/IJESNR.2024.33.556376

Table 2: Assessment of policy, legal, institutional and regulatory frameworks.

Components	Sub-components	Score/5	Standard Deviation/5
1.1 Policies and legislation for the restoration of degraded forest landscapes	Policies, laws and regulations governing forest use and landscape restoration are clear and consistent.	3.79	0.78
	There is coherence and coordination of national development plans and strategies with international environmental policies (climate change) with regard to landscape restoration.	3.82	0.85
Average component 1.1		**3.81**	**0.81**
1.2 Legal framework to support and protect land tenure, the ownership and use rights in a restoring landscape	The existing legal framework recognises and protects property rights related to landscape restoration.	3.44	1.08
	The existing legal framework recognises the customary and traditional rights of indigenous peoples, local communities and land use rights	4.49	0.68
	Policies, laws and regulations governing land tenure and landscape restoration in Cameroon are clear and consistent	3.23	0.94
Average component 1.2		**3.72**	**0.9**
1.3 Alignment of general development policies with policies related to forest landscape restoration	There is coherence and coordination between national development plans and strategies and forestry policies regarding landscape restoration.	3.66	0.89
	There is consistency and coordination of national development plans and strategies with energy policies regarding landscape restoration.	3.27	0.81
	There is a fit between development policies in general and trade policies regarding landscape restoration	2.7	0.78
	There is coherence and coordination between national development plans and strategies and agricultural policies regarding landscape restoration	3.16	0.64
	Land ownership and use rights are clear and enforceable on the ground, supporting landscape restoration in Cameroon	3.44	1.13
Average component 1.3		**3.25**	**0.85**
1.4 Institutional frameworks	The mandates of national forestry agencies are clear and mutually reinforcing for landscape restoration	**2.95**	**0.78**
1.5 Financial incentives, economic instruments and benefit sharing	There are legal provisions and mechanisms for equitable forest revenue sharing and landscape restoration.	**3.03**	**0.93**
Average Pillar 1		**3.35**	**0.85**

Table 2 indicates that governance regarding policy, legal, institutional, and regulatory frameworks received a moderately satisfactory score, averaging 3.35 points, slightly above the fair average of 3 for this assessment. The overall score is justified by the clarity and coherence of policies and laws concerning the restoration of degraded forest landscapes at both national and international levels, scoring 3.81 out of 5. Additionally, the legal framework supporting and protecting land tenure, ownership, and use rights in a restoring landscape also performed well, scoring 3.72. However, components related to the alignment of general development policies with policies for forest landscape restoration, as well as financial incentives, economic instruments, and benefit sharing, received fair scores of 3.25 and 3.03, respectively. Conversely, institutional frameworks scored poorly at 2.95 out of 5, indicating a lack of clarity, coherence, and collaboration among national agencies involved in the restoration of degraded forest landscapes.

Pillar 2: Planning and decision-making processes

This pillar assessed the transparency, accountability, and inclusiveness of the key processes and institutions involved in governing forest restoration. It examined the characteristics

How to cite this article: Tchoutezou Guy H Zanguim, Nyong P Awazi, Lucie F Temgoua, Martin N Tchamba. Governance in Landscape Restoration Interventions in Cameroon's Afromontane Region: The Example of the Bamboutos Mountain. Int J Environ Sci Nat Res. 2024; 33(5): 556376.
DOI: 10.19080/IJESNR.2024.33.556376

of these processes and institutions, how key agencies operate, and the level of stakeholder participation and accountability of decision-makers. Components under this pillar evaluated the extent, characteristics, and quality of stakeholder participation, as well as the transparency of decision-making and resource allocation in forest restoration. The degree of accountability of governance mechanisms and processes was also considered. Table 3 presents the three components and 28 sub-components assessed under this pillar.

Table 3: Evaluation of the planning and decision-making process.

Components	Sub-components	Score/5	Standard Deviation/5
2.1 Stakeholder participation	Civil society, indigenous peoples and the agricultural sector have adequate capacity to participate and engage in planning, decision-making and implementation of landscape restoration	3.46	0.97
	Civil society, indigenous peoples and livestock sector development partners have sufficient capacity to participate and engage in planning, decision-making and implementation of landscape restoration in Cameroon	3.44	0.81
	Civil society, indigenous peoples and small and medium-sized enterprises have sufficient capacity to participate and engage in landscape restoration planning, decision-making and implementation	3.32	0.89
	The legal framework for agriculture provides incentives for smallholder farmer development in relation to landscape restoration in Cameroon	3.77	1.05
	The legal framework for livestock farming provides incentives for livestock feed development in relation to landscape restoration in Cameroon	3.47	0.87
	Does the legal framework for energy provide incentives for landscape restoration in Cameroon?	3.09	0.75
	The environmental legal framework provides incentives for landscape restoration in Cameroon	3.9	1
	Corporate legal framework provides incentives for landscape restoration in Cameroon	2.89	0.79
	Forest legal framework provides incentives for landscape restoration in Cameroon	4	0.97
	Legal framework for trade offers incentives for landscape restoration in Cameroon	2.59	0.81
	The legal framework for land tenure provides incentives for landscape restoration developers in Cameroon	2.53	0.73
	The existing legal framework provides opportunities for public participation in forest policies and decisions and for the use of landscape restoration	4.08	0.82
	The existing legal framework provides opportunities for public participation in environmental policies and decisions and for recourse to landscape restoration	3.89	0.75
	The existing legal framework provides opportunities for public participation in energy-related policies and decisions and for recourse to landscape restoration	3.31	0.97

How to cite this article: Tchoutezou Guy H Zanguim, Nyong P Awazi, Lucie F Temgoua, Martin N Tchamba. Governance in Landscape Restoration Interventions in Cameroon's Afromontane Region: The Example of the Bamboutos Mountain. Int J Environ Sci Nat Res. 2024; 33(5): 556376. DOI: 10.19080/IJESNR.2024.33.556376

	The existing legal framework provides opportunities for public participation in trade-related policies and decisions and for recourse to landscape restoration	2.83	0.69
	The existing legal framework provides opportunities for public participation in business-related policies and decisions and for recourse to landscape restoration	2.97	0.69
	The existing legal framework provides opportunities for public participation in policies and decisions related to agriculture and for recourse to landscape restoration	3.66	0.77
	The existing legal framework provides opportunities for public participation in livestock policies and decisions and for recourse to landscape restoration	3.25	0.69
	The existing legal framework provides opportunities for public participation in policies and decisions on land issues and for recourse to landscape restoration	3.97	0.98
Average component 2.1		**3.39**	**0.84**
2.2 Transparency and accountability	The existing legal framework supports transparency and accountability, such as public access to information, transparency in the various landscape restoration activities	**3.29**	**1.00**
2.3 Stakeholder capacity and empowerment	There are effective and independent governmental control mechanisms on landscape restoration in the forest administration	2.24	0.83
	There are effective and independent governmental control mechanisms on landscape restoration in the environmental administration	2.26	0.93
	There are effective and independent governmental control mechanisms on landscape restoration in the energy administration	1.95	0.77
	There are effective and independent governmental control mechanisms on landscape restoration in the administration in charge of trade	1.94	0.79
	There are effective and independent governmental control mechanisms on landscape restoration in the administration in charge of enterprises	2	0.61
	There are effective and independent governmental control mechanisms on landscape restoration in the administration in charge of agriculture	1.9	0.55
	There are effective and independent governmental control mechanisms on landscape restoration in the administration in charge of livestock	1.83	0.74
	There are effective and independent governmental control mechanisms over the land, which favours the development of landscape restoration in Cameroon	3.18	1.14
Average component 2.2		2.16	0.79
Average Pillar 2		**2.95**	**0.88**

How to cite this article: Tchoutezou Guy H Zanguim, Nyong P Awazi, Lucie F Temgoua, Martin N Tchamba. Governance in Landscape Restoration Interventions in Cameroon's Afromontane Region: The Example of the Bamboutos Mountain. Int J Environ Sci Nat Res. 2024; 33(5): 556376.
DOI: 10.19080/IJESNR.2024.33.556376

According to these results, the quality of governance in planning and decision-making processes for the restoration of degraded forest landscapes is poor as the average score for this pillar was 2.95/5 below the required average of 3/5. Although, stakeholder participation (3.39/5) and transparency and accountability (3.29/5) were fair, stakeholder capacity and empowerment were clearly poor with a score of 2.95/5. In fact, the government does not yet have effective and independent control mechanisms that promote forest restoration in the different sectors; the incentives provided for landscape restoration in Cameroon are not yet perceptible in the legal frameworks.

Pillar 3: Implementation, enforcement and compliance

Table 4: Assessment of implementation, enforcement and compliance.

Components	Sub-components	Score/5	Standard Deviation/5
3.1 Administration in charge of forest restoration	There is an effective administration system for landscape restoration in Cameroon	2.21	1
	There is an effective steering and decision-making body for the administration on the guidelines for the restoration of the Bamboutos Mountains	3.66	0.85
Average component 3.1		**2.93**	**0.93**
3.2 Law enforcement in relation to forest restoration	The country has measures and tools for effective forest law enforcement, with a particular focus on landscape restoration?	**3.36**	**0.9**
3.3 Land tenure and property rights management	Land and property rights administration measures and mechanisms exist and are effective in addressing the issue of landscape restoration in Cameroon	**2.87**	**0.92**
3.4 Cooperation and coordination	There is adequate cooperation and coordination between the government and national and international organisations regarding landscape restoration activities in Cameroon	**4.03**	**0.8**
3.5 Anti-corruption measures	There are adequate and effective measures to combat corruption in the forestry and landscape restoration sectors in Cameroon	**2.63**	**1.15**
Average Pillar 3		**3.16**	**0.94**

This pillar focuses on evaluating the implementation of policy, legal, institutional, and regulatory frameworks related to forest restoration. It assesses the effectiveness, efficiency, and equity of implementation efforts. Components under this pillar examine aspects such as forest administration, law enforcement, anti-corruption measures, and management of land tenure and property rights. Cooperation and coordination between implementing and enforcing agencies are highlighted as crucial for achieving effective restoration and enforcement, thereby promoting overall good governance. Table 4 outlines the five components and six sub-components selected for the assessment of this pillar.

According to this table, the implementation, enforcement and respect of regulations was globally good with a score of 3.16/5. Cooperation and coordination was perfect between the government and national and international organisations regarding activities related to landscape restoration in Cameroon with a score of 4.03/5. Law enforcement in relation to forest restoration (3.36/5) was fair; however, the administration in charge of forest restoration (2.93/5), management of land tenure and property rights (2.87/5) and anti-corruption measures (2.63/5) still need to be improved as these components have scores below 3/5 which is the average required for good governance.

Evaluation of governance for forest restoration in the Bamboutos Mountains

Figure 1 presents the evaluation result of governance for forest landscape restoration in the Mt. Bamboutos.

Evaluating the overall quality of governance of Mt. Bamboutos restoration initiatives, one-sided Wilcoxon rank test at a significance level of α =5% was necessary. The parameters of this test are presented in Table 5.

The statistical analysis reveals significant insights into the governance of landscape restoration in Mount Bamboutos. For the first pillar, which assesses the political, legal, institutional, and regulatory framework, the P-value is 0.03125, indicating significance at the 5% probability level. This suggests that governance in these aspects was good. However, for the second pillar, focusing on the planning and decision-making process of restoration initiatives, the P-value is 0.25, which is above the significance threshold (α). This implies that governance in this area was poor, indicating a need for improvement. Meanwhile, the third pillar, which evaluates the implementation, application, and

How to cite this article: Tchoutezou Guy H Zanguim, Nyong P Awazi, Lucie F Temgoua, Martin N Tchamba. Governance in Landscape Restoration Interventions in Cameroon's Afromontane Region: The Example of the Bamboutos Mountain. Int J Environ Sci Nat Res. 2024; 33(5): 556376. DOI: 10.19080/IJESNR.2024.33.556376

enforcement of regulations, shows a P-value of 0.03125, signifying significance below the threshold. This confirms the average obtained in this pillar as being good, reflecting good governance in these aspects of restoration. Overall, the analysis indicates that governance was generally good for the restoration of Mount Bamboutos, as evidenced by the obtained results, with an overall P-value of 0.000366, below the threshold value. However, there is room for improvement, particularly in the planning and decision-making process.

Table 5: Kruskal Wallis test statistics indicating variations in performance of governance pillars in the restoration of the Bamboutos Mountain.

Pillar	Min	1st Quartile	Median	Average	3th Quartile	Max	P value (α=0.05)
Pillar 1	2.946	3.026	3.246	3.349	3.718	3.808	0.03125
Pillar 2	2.163	2.726	3.289	2.947	3.34	3.39	0.25
Pillar 3	2.632	2.872	2.932	3.164	3.359	4.026	0.03125
Governance Review	2.163	2.932	3.246	3.185	3.359	4.026	0.00037

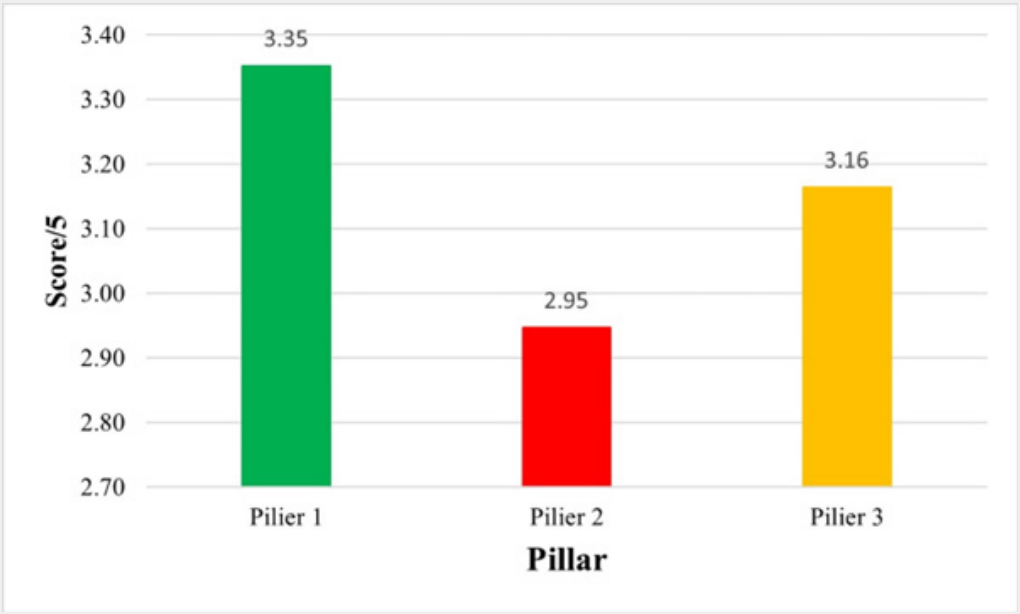

Figure 1: Governance for forest landscape restoration in Mount Bamboutos.

Discussion

Several elements justify this satisfactory result on the political, legal, institutional and regulatory frameworks for a successful restoration of the Mount Bamboutos forest landscape. Indeed, the Constitution of Cameroon, which is the fundamental law, lays down in its preamble, which has the same legal value as its articulated provisions, the bases for the protection of the environment through the affirmation of the right to a healthy environment, i.e. an environment that is balanced and respectful of health. The fundamental law in this area has been supplemented by a series of legislative and regulatory texts, the most emblematic of which is law n°96/12 of 5 August 1996 on the framework law on environmental management. In their formulation, these provisions allow for a good understanding of the fundamental norms and principles in the area of the environment; align environmental protection in Cameroon with internationally recognized standards; respond to the requirements of an inter-institutional context, a framework within which environmental issues must be dealt with; and innovate through the inclusion of pluralism of norms which values traditional knowledge and recognizes the rights of populations.

The restoration of the Mount Bamboutos landscape aligns with several of Cameroon's national commitments in sustainable development, forestry, greenhouse gas emissions reduction, and land degradation. At the national level, this endeavor is consistent with the Forestry and Wildlife Sub-Sector Strategy 2020, aiming to enhance the sector's contribution to Cameroon's economic development and the achievement of Sustainable Development Goals (SDGs), notably SDG 13 (Climate Action) and SDG 15 (Life on Land). Additionally, the Rural Sector Development Strategy, the National Agricultural Investment Plan (NAIP), and the National Development Strategy (NDS30) advocate for the development

How to cite this article: Tchoutezou Guy H Zanguim, Nyong P Awazi, Lucie F Temgoua, Martin N Tchamba. Governance in Landscape Restoration Interventions in Cameroon's Afromontane Region: The Example of the Bamboutos Mountain. Int J Environ Sci Nat Res. 2024; 33(5): 556376.
DOI: 10.19080/IJESNR.2024.33.556376

of environmentally-friendly agricultural value chains and the sustainable management of natural resources, further supporting the restoration of the Bamboutos Mountain and Cameroon's Afromontane landscape.

Law n°2011/008 of 6 May 2011 on the orientation of territorial development in Cameroon has facilitated the development of planning and territorial development tools at various levels, including national, regional, and local. These tools include the National Zoning Plan (ZNAT), the National Scheme for Sustainable Territorial Development (SNADDT), the Regional Scheme for Planning and Sustainable Development (SRADDT), and the Local Plans for Planning and Sustainable Development of Territory (PLADDT). These mechanisms aim to secure land for different uses and users while ensuring sustainable development and environmental protection. By coordinating development actions down to the commune level, these tools contribute to more effective and organized territorial management.

Cameroon has implemented several national strategies and plans to address the restoration of degraded lands and forests. These include: The National Strategy for the Development of Forest Plantations, aimed at promoting afforestation and reforestation efforts to increase forest cover and enhance ecosystem services; The National Plan to Combat Desertification, focused on mitigating land degradation and desertification through sustainable land management practices; The National Emergency Plan to Combat Deforestation and Forest Degradation, which aims to address urgent issues related to deforestation and forest degradation through targeted interventions; and The National Plan for Adaptation to Climate Change, designed to enhance resilience to climate change impacts by implementing adaptive measures in various sectors, including forestry and land management. These strategies and plans reflect Cameroon's commitment to addressing environmental challenges and promoting sustainable development. The Rural Sector Development Strategy SDSR (Activity 3.3.3) provides for the fight against desertification and climate change (promotion and restoration of nature, promotion of good practices and strengthening of environmental monitoring) in the matrix of the National Agricultural Investment Plan (NAIP). From the above, it is clear that the process of restoring Mt. Bamboutos has sufficient effective policies, legal, institutional and regulatory instruments for its implementation. This is in line with the results of Tunk et al. [9] who find in the assessment of the potential for forest landscape restoration in Cameroon. In general, the Cameroonian legal framework is favourable to the restoration of degraded landscapes. Although there are overlaps in some laws and inaccuracies in some definitions, it leaves enough room for commitment to sustainable land management in general and forests in particular. In developing the national strategic framework for forest landscape restoration and degraded lands in Cameroon, GIZ [7] reports similar findings with regard to policy, legal, institutional and regulatory frameworks on degraded forest landscape restoration.

In the planning and decision-making processes, the situation was more complex: some implementation texts were missing or contradictory; the institutions or entities in charge of a certain mandate did not have the will, or the means, or capacity, to implement it [9]. Often, regional authorities were unfamiliar with the terms of reference of the mandate, and farmers were unfamiliar with their rights and obligations. It is therefore crucial that the actors on the ground (regional and departmental authorities and individual land managers) have at least a rudimentary knowledge of their legal situation with regards to the elements of the restoration. According to EDF (2021), in its chapter on forest landscape restoration in Central Africa, ambitious restoration programmes face many barriers, including poor governance in the form of lack of inter-sectoral coordination, land-use conflicts, mismatches between the time of projects and the time needed for the restoration process, and consequently, the lack of real support for local people. From this analysis, the importance of involving these local populations in the decisions to restore the Bamboutos landscapes from the project design stage, and of having research and development support services to be able to propose better techniques, technologies and realistic itineraries to the local governments and populations on whom the implementation of restoration activities ultimately depends and emerges. Finally, a monitoring system should be put in place, from the project design stage, to assess the effectiveness, efficiency and sustainability of the restoration efforts [13-16].

Conclusion

Forest governance in general has always been criticized in Central Africa, but this study reveals that in terms of restoring degraded forest landscapes, governance is rather good. The strong points of this governance were the availability of policy, legal, institutional and regulatory frameworks that were fully consistent with international policies on the restoration of degraded forest landscapes and the enforcement of these regulations. However, there were still shortcomings in planning and decision-making, including weak stakeholder capacity and agency. Overall, the governance arrangements for Mt. Bamboutos were favourable for restoration. This restoration initiative will thus be able to restore the lost vital goods and services of the landscape and improve the livelihoods of local people. It is also a tool for achieving various landscape objectives by creating mosaics of land uses that are complementary and productive. Finally, this study is also a means to follow up on agreed commitments by the government of Cameroon in the areas of forests, biodiversity, climate change and desertification. In perspective, it is therefore urgent to carry out complementary studies for its implementation, notably on the evaluation and mapping of intervention priorities; economic and financial analysis; restoration diagnosis linked to the presence of essential success factors and on financing mechanisms and opportunities. This study has policy implications for landscape restoration in Cameroon in general and the Afromontane landscape in particular.

How to cite this article: Tchoutezou Guy H Zanguim, Nyong P Awazi, Lucie F Temgoua, Martin N Tchamba. Governance in Landscape Restoration Interventions in Cameroon's Afromontane Region: The Example of the Bamboutos Mountain. Int J Environ Sci Nat Res. 2024; 33(5): 556376.
DOI: 10.19080/IJESNR.2024.33.556376

Funding

This study received no external funding.

Conflict of Interest Declaration

The authors declare that there are no conflicts of interest.

Acknowledgement

We are grateful for the material and logistical support provided by the Environmental Geomatics Laboratory of the Forestry Department of the University of Dschang. We greatly appreciate the collaboration of all the different categories of stakeholders who supported us during data collections and responding to our questionnaires. We thank the independent reviewers for the time and knowledge put to improve this manuscript.

References

1. Atyi REA (2022) Etat des forêts du bassin du Congo en 2021: conclusion. État des Forêts 2021: 391.
2. Shidiki AA, Zanguim TGH, Tchamba NM (2021) Governance of Non-Timber Forest Products (NTFPs) Djansang (*Ricinodendron heudelotii*) and Wild Mango (*Irvingia gabonensis*) and Its Influence on the Livelihood of Rural Communities of Yokadouma in the East Region of Cameroon. Open Journal of Forestry 11(02): 153.
3. Tadoum M, Tchamba M, Tanougong A (2021) Spatio-Temporal Dynamic of Land Use in the Dja-Odzala-Minkébé Landscape between Cameroon, Congo and Gabon: Influence on the Evolution of Forest Cover in a Context of Cross-Border Cooperation. Open Journal of Forestry 11(3): 222-237.
4. Hansen MC, Potapov PV, Moore R, Hancher M, Turubanova SA, et al. (2013) High-resolution global maps of 21st-century forest cover change. Science 342(6160): 850-853.
5. Le Quéré C, Moriarty R, Andrew RM, Canadell JG, Sitch S, et al. (2015) Global carbon budget 2015. Earth System Science Data 7(2): 349-396.
6. Messinger J, Winterbottom B (2016) African forest landscape restoration initiative (AFR100): restoring 100 million hectares of degraded and deforested land in Africa. Nature & Faune 30(2): 14-17.
7. GIZ – ProFE (2019) La Restauration des Paysages forestiers et des Terres dégradées au Cameroun. Cadre stratégique national, p. 88.
8. Cerutti PO, Mbongo M, Vandenhaute M (2016) État du secteur forêts-bois du Cameroun (2015). Publié par Organisation des Nations Unies pour l'alimentation et l'agriculture et le Centre de recherche forestière internationale (CIFOR).
9. Tunk C, Hoefsloot H, Amougou J (2016) Evaluation du potentiel de restauration des paysages forestiers au Cameroun. GIZ GOPA/DFS.
10. Ministère de l'Environnement, de la Protection de la Nature et du Développement Durable (MINEPDED) (2018) Document de stratégie nationale de réduction des émissions issues de la déforestation et de la dégradation des forêts, gestion durable des forêts, conservation des forêts et augmentation des stocks de carbone au Cameroun, p. 91.
11. Ngoufo R (2014) Document avant-projet du Développement participatif, conservation et restauration des massifs forestiers dégradés de la région des monts Bamboutos (Ouest- Cameroun). MINFOF/OIBT. 184.
12. Cowling P, Kristin D, Kenneth R (2014) Évaluation de la gouvernance forestière: Guide pratique pour la collecte, l'analyse et l'utilisation des données. PROFOR et FAO. Washington DC.
13. Leumbe LO, Bitom D, Tematio P, Temgoua E, Lucas Y (2005) Etude de sols ferralitiques à caractères andiques sur trachytes en zone de montagne humide tropicale (Mont Bambouto - Ouest Cameroun). Etude et Gestion des Sols 12(4): 313-326.
14. Ministère de l'Environnement et des Forêts (MINEF) (1994) Loi n° 94/01 du 20 janvier 1994 portant régime des forêts, de la faune et de la pêche au Cameroun.
15. Ministère de l'Environnement et des Forêts (MINEF) (1996) Loi n°96/12 du 05 août 1996 portant loi cadre relative à la gestion de l'environnement au Cameroun.
16. Ministère de l'Economie, de la Planification et de l'Aménagement du Territoire (MINEPAT) (2011) Loi n° 2011/008 du 06 mai 2011 d'orientation pour l'aménagement et le développement durable du territoire au Cameroun.

DOI: 10.19080/IJESNR.2024.33.556376

How to cite this article: Tchoutezou Guy H Zanguim, Nyong P Awazi, Lucie F Temgoua, Martin N Tchamba. Governance in Landscape Restoration Interventions in Cameroon's Afromontane Region: The Example of the Bamboutos Mountain. Int J Environ Sci Nat Res. 2024; 33(5): 556376.
DOI: 10.19080/IJESNR.2024.33.556376