An examination of REDD+ readiness and implementation in Ghana

Article *in* International Forestry Review · December 2020

DOI: 10.1505/146554820831255560

CITATIONS
2

READS
317

2 authors:

Daniel Nukpezah
University of Ghana
51 PUBLICATIONS **282** CITATIONS
SEE PROFILE

Dieudonne Alemagi
FOKABS Inc.
41 PUBLICATIONS **716** CITATIONS
SEE PROFILE

An examination of REDD+ readiness and implementation in Ghana

D. NUKPEZAH and D. ALEMAGI

Institute for Environment and Sanitation Studies (IESS), International House, University of Ghana, 1 Annie Jiagge Road, Legon, Accra, Ghana

Email: dnukpezah@ug.edu.gh, dalemagi@yahoo.co.uk

HIGHLIGHTS

- Planning and coordination for REDD+ readiness in Ghana is progressing well.
- Progress has been made in the areas of monitoring, reporting and verification (MRV) and audit for REDD+ readiness.
- Benefit sharing, financing, as well as demonstrations and pilots for REDD+ readiness are well advanced.
- Challenges still prevail in the area of policy, laws, and institutions, as well as implementation of an emission reduction program for REDD+ readiness and implementation. Therefore, some specific recommendations for advancing REDD+ readiness and implementation in Ghana are presented.
- It is hoped that policy makers who are driving the REDD+ readiness and implementation process in Ghana will be able to integrate the findings of this study into initiatives that have been established in order to advance REDD+ implementation in the country.

SUMMARY

Ghana has participated in REDD+ negotiations since its inception and has been engaged in activities geared at implementing REDD+ in the country. In this paper, we examine initiatives that have been undertaken by relevant stakeholders to advance REDD+ readiness and implementation in Ghana. Results revealed that several aspects of planning and coordination were ranked high and some progress has been made in the arena of Monitoring, Reporting and Verification (MRV) and audit; benefit sharing; financing; as well as demonstrations and pilots. That said, some challenges still prevail in the area of policy, laws, and institutions; as well as implementation of an emission reduction program. Therefore, some specific recommendations for advancing REDD+ readiness and implementation in Ghana can be considered going forward including the development of strong institutions for REDD+ implementation; clarification of carbon and tenure rights; capacity building for data collection; and institutional collaboration. Implementing these recommendations are a fundamental prerequisite for an effective and efficient implementation of REDD+ in Ghana.

Keywords: REDD+, Ghana, implementation, examination, stakeholders

Un examen de l'état de préparation et de la mise en œuvre de la REDD + au Ghana

D. NUKPEZAH et D. ALEMAGI

Le Ghana a participé aux négociations REDD + depuis sa création et s'est engagé dans des activités visant à mettre en œuvre la REDD + dans le pays. Dans cet article, nous examinons les initiatives qui ont été entreprises par les parties prenantes concernées pour faire progresser la préparation et la mise en œuvre de REDD + au Ghana. Les résultats ont révélé que plusieurs aspects de la planification et de la coordination étaient bien avancés et que des progrès avaient été accomplis dans les domaines de monitoring, reportage, vérification (MRV) et audit; de partage des bénéfices REDD+; du financement; ainsi que des démonstrations et des projets pilotes. Cela dit, certains défis persistent dans le domaine des politiques, des lois et des institutions; ainsi que dans la mise en œuvre d'un programme de réduction des émissions. Par conséquent, certaines recommandations spécifiques pour faire progresser la préparation et la mise en œuvre de la REDD + au Ghana peuvent être envisagées pour l'avenir, y compris le développement des institutions fortes pour la mise en œuvre de la REDD +; la clarification du carbone et des droits fonciers; le renforcement des capacités pour la collecte de données; et la collaboration institutionnelle. La mise en œuvre de ces recommandations est une condition préalable fondamentale pour une réalisation efficace et efficiente de la REDD + au Ghana.

Análisis de la preparación y la aplicación de REDD+ en Ghana

D. NUKPEZAH y D. ALEMAGI

Ghana ha participado en las negociaciones de REDD+ desde sus comienzos y ha participado en actividades orientadas a la implementación de REDD+ en el país. En este artículo se estudian las iniciativas emprendidas por las partes interesadas relacionadas con el progreso en la preparación y la aplicación de REDD+ en Ghana. Los resultados revelaron que varios aspectos de la planificación y la coordinación ocupaban

un lugar destacado y que se habían logrado avances en los ámbitos del monitoreo, la presentación de informes y la verificación y el de la auditoría, el reparto de los beneficios y la financiación, así como el de las demostraciones y los proyectos piloto. Sin embargo, todavía prevalecen algunos desafíos en el área de las políticas, las leyes y las instituciones, así como en la implementación de un programa de reducción de emisiones. Por consiguiente, se podría considerar la aplicación de algunas recomendaciones específicas para mejorar en la preparación y aplicación de REDD+ en Ghana, como el desarrollo de instituciones robustas para la aplicación de REDD+, la aclaración de los derechos de carbono y de tenencia de la tierra, el fortalecimiento de capacidades para la recopilación de datos y la colaboración institucional. La aplicación de estas recomendaciones es un requisito previo fundamental para una implementación efectiva y eficiente de REDD+ en Ghana.

INTRODUCTION

Ghana is endowed with the tropical rainforest which is estimated at 4,940,000 hectares. The three main ecological zones of the country which are the High Forest Zone (HFZ), Transitional Zone (TZ) and the Savannah Zone (SZ) have been delineated on the basis of rainfall and temperature (GoG 2016). The HFZ which is located in the southern part of the country records annual rainfall exceeding 2000mm and it is one of the 36 most important biodiversity areas in the world (GoG 2016). The TZ exists in the middle part of the country and has characteristics of both the HFZ and SZ while the SZ is located in the northern part of the country (GOG 2016).

In Ghana, the government has taken a series of steps geared at promoting sustainable forest management in the country. For instance, the Community Forest Resource Management Programme (CFRM) was piloted in 2002 and subsequently launched and expanded to cover twenty-six districts in the country (The REDD+ Desk 2002). As the REDD+ Desk (2002) further reports, the programme is composed of: 1) the Participatory Forest Management Planning Component which involves socio-economic, and environmental surveys and the creation of management plans in forest-dependent communities; 2) the establishment of Community Resource Management Committees (CRMCs) and the preparation of Memorandum of Understanding (MoUs) on the fundamental roles and responsibilities between the Forestry Commission, local authorities, and other stakeholders; 3) the formation of operations with the objective of forest monitoring, forest protection from wildfires, illegal logging, and commercial seedling production for reforestation and afforestation; 4) a benefit sharing element which enable forest-dependent communities to negotiate proceeds from forest exploitation with logging companies; 5) a Forestry-based Livelihoods Support element; and 6) Public Education and Awareness of the fundamental importance of forest ecosystems. The goal of all these initiatives undertaken by the government of Ghana was to achieve socio-economic, cultural, and ecological sustainability within the forestry arena.

Despite the aforementioned initiatives, the rate of deforestation and forest degradation in Ghana remain very high. For instance, Ghana has one of the highest deforestation rates in Africa and the world which is estimated at 2% per annum (GoG 2016). Indeed, the FAO (2011) reports that between 2000 and 2010, Ghana lost an average of 115,000 hectares of forest per annum. To address this fundamental ecological issue, Ghana has taken interest in REDD+. The UNFCCC (2008) reports that, "REDD+ is a mechanism to support the voluntary efforts of developing countries to mitigate climate change by reducing emissions from deforestation and forest degradation, promoting conservation and the sustainable management of their forests, and enhancing forest carbon stocks". In addition, REDD+ is an incentive for developing countries to protect and sustainably manage their forest resources in view of the fact that it provides a financial value on the carbon that is contained in the forests of these countries (UNFCCC 2008, Alemagi 2014). As Christophersen and Stahl (2011) assert, REDD+ is significant to biodiversity conservation, the water and nutrient cycles and indirectly offers opportunities for poverty reduction especially for those who depend on forest products as their main source of livelihood.

Several studies on REDD+ have been conducted in Ghana. Studies relating to REDD+ in Ghana have focused on the importance of REDD+ for sustainable development (Abissath 2019); Ghana's national forest reference level (Ghana Forestry Commission 2017); implications of Ghana's REDD+ and voluntary partnership agreement on land and tree tenure reform (Hajjar 2015); context for REDD+ implementation in Ghana (Nketiah 2009); the politics of design and implementation of REDD+ in Ghana (Asiyanbi *et al.* 2017), successes and challenges for mainstreaming gender into Ghana's REDD+ process (IUNC 2016); equity in Ghana's national REDD+ process (Saeed 2018); REDD+ finance to promote sustainable agriculture (Muriuki 2016); Ghana's REDD+ benefit sharing dialogue (Foli and Dumenu 2013); and promoting small scale forestry under Forest Law Enforcement Governance and Trade (FLEGT) and REDD+ (Hajjar 2014). In addition, scholars like Fox (2017) have investigated the development of REDD+ in Ghana. Focusing on the access dimension of food security, a central question raised by Fox (2017) is that are REDD+ Emissions Reduction Purchase Agreements (ERPAs) advantageous or disadvantageous to food insecure people wishing to strategically access forestry opportunities to reduce hunger and food insecurity in Ghana? This author submits that critical to answering this fundamental question is an in-depth conceptualisation of potential benefit available in REDD+ transactions in the country. While all the aforementioned studies are instructive, to date, however, no study has been conducted that analysis or evaluates efforts that have been formulated by the government of Ghana and other relevant actors or stakeholders to advance or promote REDD+ readiness and implementation in Ghana. Indeed, this provides a robust underpinning or rationale of why this study has been conducted. Furthermore, against

this background, we argue that this paper would contribute significantly to the literature on REDD+, especially from a purely Ghanaian context. The paper therefore sets out to:

1. Assess initiatives that have been formulated by the government of Ghana and other relevant actors to advance REDD+ readiness and implementation in the country, and
2. Prescribe policy recommendations that can be used to promote REDD+ readiness and implementation in Ghana.

It is our hope that policy makers who are driving the REDD+ readiness and implementation process in Ghana will be able to integrate the findings of this paper into their policies, plans, and programs (like the National Climate Change Policy and the National Forest and Wildlife Policy) that have been established to advance REDD+ implementation in the country. More importantly, it is hope that lessons learnt in this study can be transferred to REDD+ implementation initiatives in other countries in Central and West Africa like the Democratic Republic of Congo, Central African Republic, Liberia, and Nigeria. The remainder of the paper is structured as follows: The next section is the methodology which is followed by the results. Next, the results are discussed while in the penultimate section, recommendations are proffered. The paper ends with concluding remarks.

METHODS

The evaluation framework

In this study, we adopted the REDD+ readiness conceptual framework reported in Alemagi *et al.* 2014 and Minang *et al.* 2014 (see Figure 1 for details.) to assess the REDD+ readiness and implementation in Ghana. We then designed a questionnaire containing twenty-eight questions derived from the six key functions in the conceptual framework. In addition, three other questions regarding REDD+ implementation (especially implementation of a quantified emission reduction program in Ghana) were included in the questionnaire making a total of 31 questions.

Interviews and review of secondary literature

Semi-Structured Interviews (SSI) were held with twenty-two key country resource persons representing the REDD+ actors in Ghana. These actors had robust knowledge of the REDD+ readiness and implementation process in the country because they have either been involved in REDD+ negotiations on the ground, been involved in the establishment of the REDD Readiness Preparation Proposal (R-PP) and the National REDD Strategy, and or are involved in the implementation and development of REDD+ pilot projects in the country. Specifically, they included three officials from the Ghana Forestry Commission, seven other relevant government officials (like those from the Ministry of Agriculture and Forest Service Division), ten officials from non-governmental organizations or institutions, and two officials from research institutions/universities (University of Ghana and Kwame Nkrumah University of Science and Technology). On a Likert scale of 1-5 (1- strongly disagree, 2- Partly disagree, 3- Neither agree nor disagree, 4-Partly agree, 5-Strongly agree), respondents were asked to rate their level of agreement or disagreement with each of twenty-eight questions derived from the six key functions in the conceptual framework. The Likert scale was originally applied in psychometric research for studies involving measurement of knowledge among others. Thus, the use of the scale gauged the extent to which respondents were knowledgeable about the subject under discussion and reflects the extent to which stakeholders have been engaged. The use of the scale is also a proxy measure of the REDD+ readiness and implementation status in Ghana. In the three other additional questions regarding emission reduction program, respondents were asked whether the country had a quantified emission reduction program.

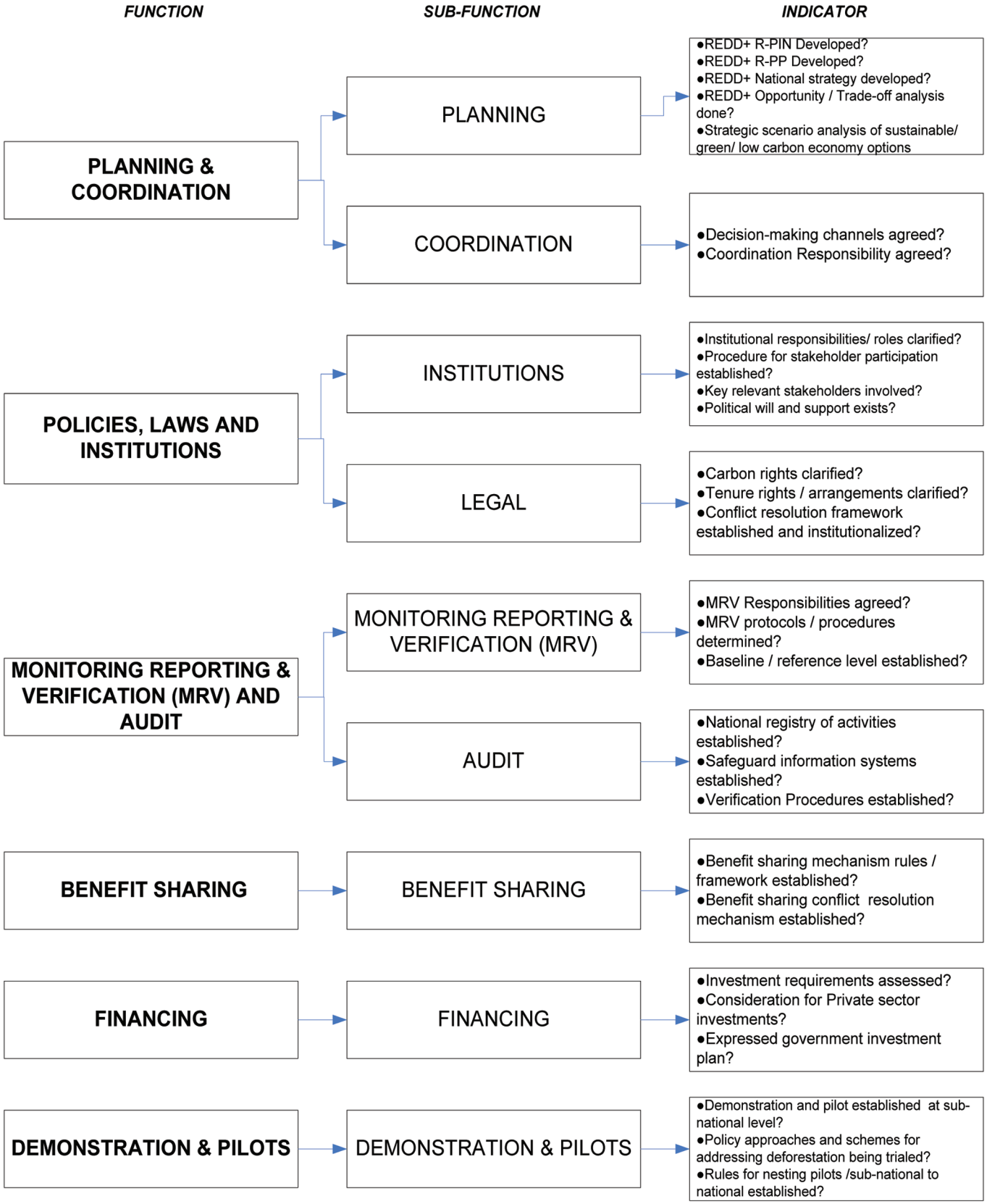
Respondents who answered affirmatively were asked to narrate the challenges they faced as a result of implementing a REDD+ quantified emission reduction program while those who stated that the country did not have a quantified emission reduction program were asked to state the different hurdles that prevent the country from implementing a REDD+ quantified emission reduction program. Interviews were conducted between October 2019 and February 2020 during workshops, in offices, and also by email. To reduce the occurrence of biased responses, interviewers avoided leading the interviewees during the interviews (following Kvale 1996, Ammenberg 2003, Alemagi *et al.* 2012) and reacted in a neutral manner by not signalling or providing their preferred answers (Ammenberg 2003).

In addition, a one-hour Focus Group Discussion (FGD) session was held with forty key relevant officials from the government and civil society in February 2020. Specifically, those who took part in the FGD included eighteen relevant officials from the government and twenty-two relevant officials from civil society. Finally, a comprehensive review and analysis of secondary literature was conducted and included relevant government reports, policies and regulations; reports from civil society; and relevant peer-reviewed literature. The objective of the FGD and the review and analysis of secondary literature was to ensure that there was triangulation in the entire research process. In analysing most of the primary data, we made use of descriptive statistics such as averages and frequencies and made graphical representation of the results using Microsoft EXCEL 2016. Finally, in ranking the results based on the Likert scale, we made use of the following designation:

- High ranking: (partly agree and strongly agree);
- Medium to high ranking: (neither agree nor disagree, partly agree and strongly agree)
- Medium ranking: (neither agree nor disagree)
- Low ranking: (partly disagree and strongly disagree)

It is important to note that our categorisation is consistent with the designation by Alemagi *et al*. (2014).

FIGURE 1 *Conceptual framework for assessing REDD+ readiness in Ghana*



Source: Alemagi *et al.* 2014 and Minang *et al*. 2014

RESULTS

Planning and coordination

Our study revealed that more than 50% of the respondents (See Figure 2) rated the country high (strongly agreed and partly agreed) in terms of the development of the country's National REDD+ Strategy, completion of the REDD+ Readiness Preparation Proposal (R-PP), and establishment of the REDD+ Readiness Plan Concept Note (R-PIN). On the other hand, most respondents (50%; see Figure 2) did not rate the country high (neither agree nor disagree, partly disagree, strongly disagree) in terms of agreement on coordination responsibilities, agreement on decision-making channels, conduction of strategic scenario analysis and opportunity cost/trade off analysis. Planning and coordination provide participatory processes in which the necessary evaluation of potential costs, benefits, and trade-offs and the necessary strategic and operational planning for REDD+ are done (Minang *et al.* 2014). Evaluation or assessment include all cost groups – e.g. opportunity, implementation, and transaction costs (White *et al.* 2010). The list of progressive planning outputs in R-Package within the FCPF process include the REDD+ Readiness Idea Note (R-PIN), the REDD+ Readiness Preparation Proposal (R-PP), and a National REDD+ Strategy (FCPF and UN-REDD 2010, IEG 2011, Minang *et al.* 2014). Some countries may choose to craft REDD+ from a broader, green, sustainable, or low-carbon-economy perspective. In order for these planning processes to be effective and efficient, coordination responsibilities and rules and channels for decision making should not be vague (Minang *et al.* 2014).

Policies, laws and institutions

Enabling policies, laws, and institutional frameworks are fundamental prerequisite for REDD+ implementation in any country. Indeed, REDD+ implementation would need robust policies, laws and institutions (in the form of norms, rules, and conventions) that govern actors (this include individuals and organizations) and control or regulate the relationships between them, especially with regards to the management of forest carbon. Several respondents (see Figure 3) agreed that procedure for stakeholder participation was established (53%) and key stakeholders were involved in REDD+ implementation in the country (68%). Stakeholders are involved in the process through their contribution in the R-PIN document, the R-PP document and the REDD+ Strategy. With regards to the clarification of institutional responsibilities for REDD+ implementation, 41% of respondents rated the country high; about a third rated the country medium with only 27% rating the country low. Similar ratings were given by respondents in terms of political will in implementing REDD+ (See Figure 3). However, only 37% (partly agreed and strongly

FIGURE 2 *Proportion of the different respondents (N=22) who agreed or disagreed with regards to planning and coordination in the domain of REDD+ readiness*

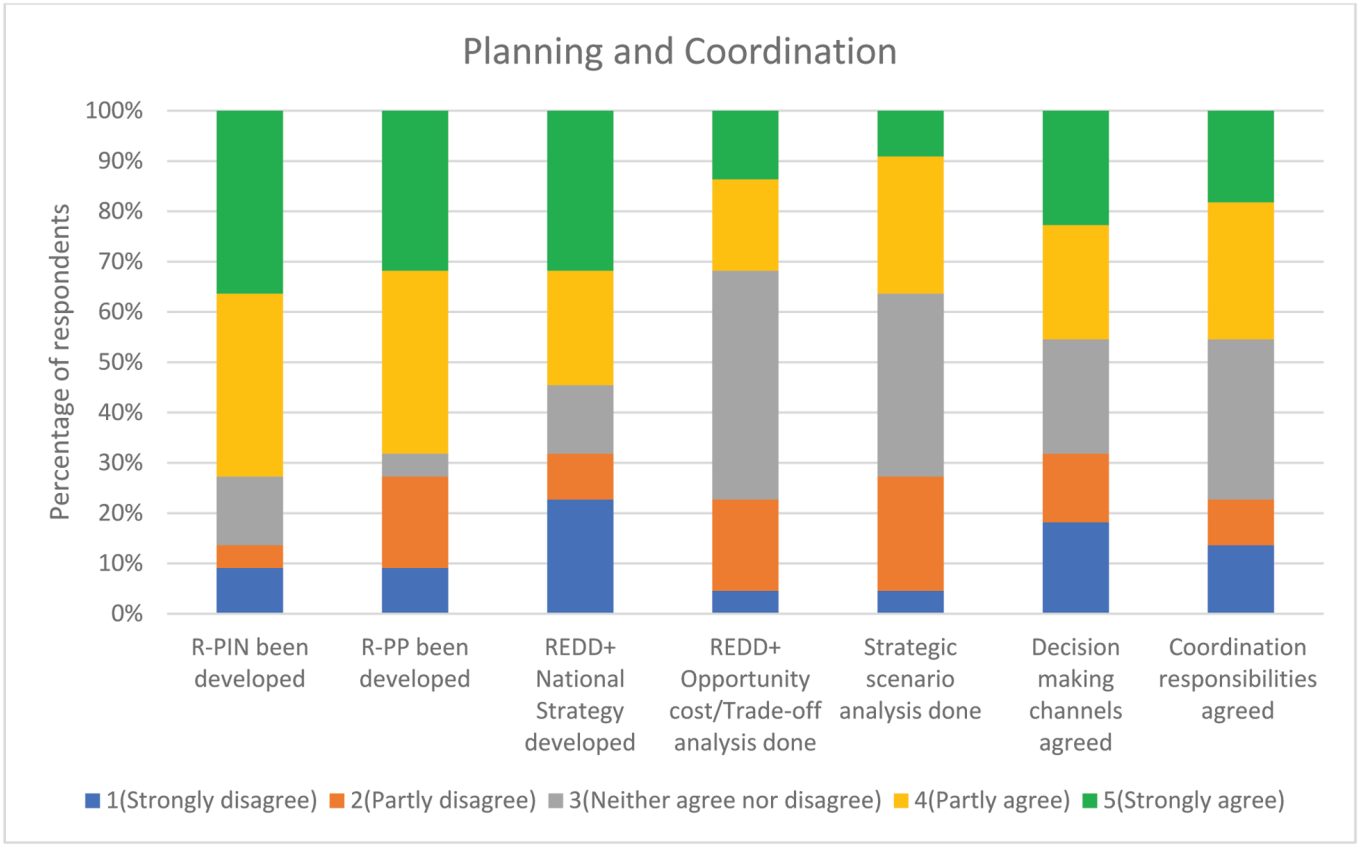
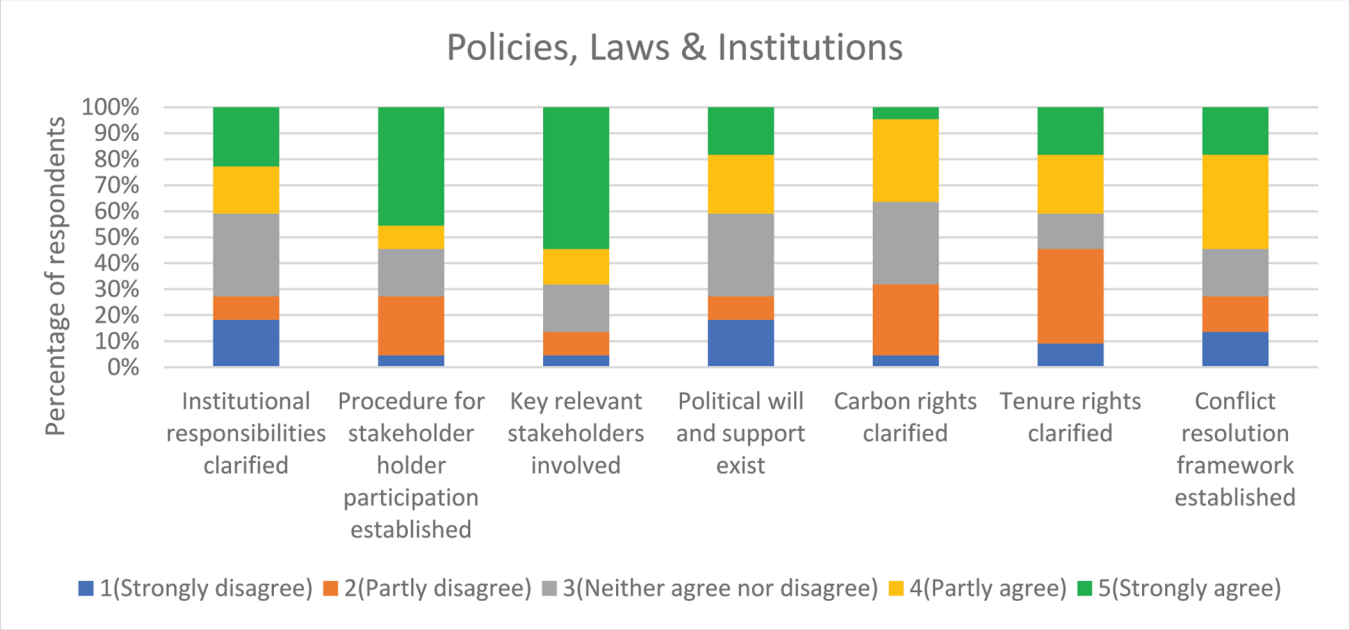


FIGURE 3 *Proportion of the different respondents (N=22) who agreed or disagreed with regards to policies, laws, and institutions for REDD+ readiness*



agreed) of the respondents were of the opinion that carbon rights and tenure rights have been clarified. This is troubling as land and tree tenure within the context of REDD+ implementation must be adequately clarified so that legal ownership, traditional user rights, and *de facto* management practices are well understood (Asare and Kwakye 2013). Indeed, if a REDD+ project intends to sell carbon credits on the voluntary carbon market, for example, then a clear understanding of land tenure is paramount or fundamental (Asare and Kwakye 2013).

Monitoring, reporting and verification (MRV), and audit

In terms of a Monitoring, Reporting and Verification (MRV) system, fundamental steps include evaluation of the data infrastructure, assigning responsibility for MRV in terms of institutions agreeing on rules and procedures for MRV (Minang *et al.* 2014). Government as a proponent is largely responsible for ensuring emission reductions and is therefore responsible for all aspects regarding the validity of emission reductions.

Our results indicate that more than 50% of the respondents (Figure 4) rated the country medium to high (neither agree nor disagree, partly agree and strongly agree) with regards to the fact that MRV responsibilities have been agreed upon, MRV protocols/procedures have been established, baseline/reference level has been determined, a national registry has been established, safeguard information systems have been designed, and verification procedures have been formulated. In Ghana some research institutions and Non-governmental Organizations (NGOs) have formulated and implemented projects that permit carbon stocks assessment or the monitoring, reporting and verification of carbon stocks.

Benefit sharing

Benefit sharing in REDD+ context entails agreements between stakeholders or actors about the distribution of monetary and non-monetary benefits or proceeds from the commercialization of forest carbon (Dumenu *et al*. (2014). As Dumenu *et al*. (2014) further asserts, benefit sharing creates effective and efficient incentives by rewarding the State, communities, organizations and businesses for actions that change unsustainable land-uses practices and reduce emissions. Moreover, an effective and efficient benefit sharing scheme for REDD+ builds a broader legitimacy and backing for the REDD+ implementation. Despite the fact that REDD+ is about allocating incentives for reducing deforestation and forest degradation to REDD+ actors or stakeholders that drive deforestation, international negotiations have left it to national governments to determine the details of how the emission reduction targets (burden) at the national level and any benefits would be distributed in-country (Minang *et al.* 2014). Interestingly, we observe that (see, Figure 5) a majority of respondents (54%) expressed a positive opinion (partly agreed or strongly agreed) that a Benefit Sharing Mechanism framework/rules were defined for REDD+ implementation in the country. In addition, most of these respondents also had the same opinion (partly agreed or strongly agreed) that a Benefit Sharing Mechanism conflict resolution mechanism has been established in the country for REDD+ implementation (See Figure 5).

Financing

Addressing REDD+ financing has become increasingly important within the REDD+ Readiness implementation

FIGURE 4 *Proportion of the different respondents (N=22) who agreed or disagreed with regards to Monitoring, reporting, verification (MRV), and audit for REDD+ readiness*

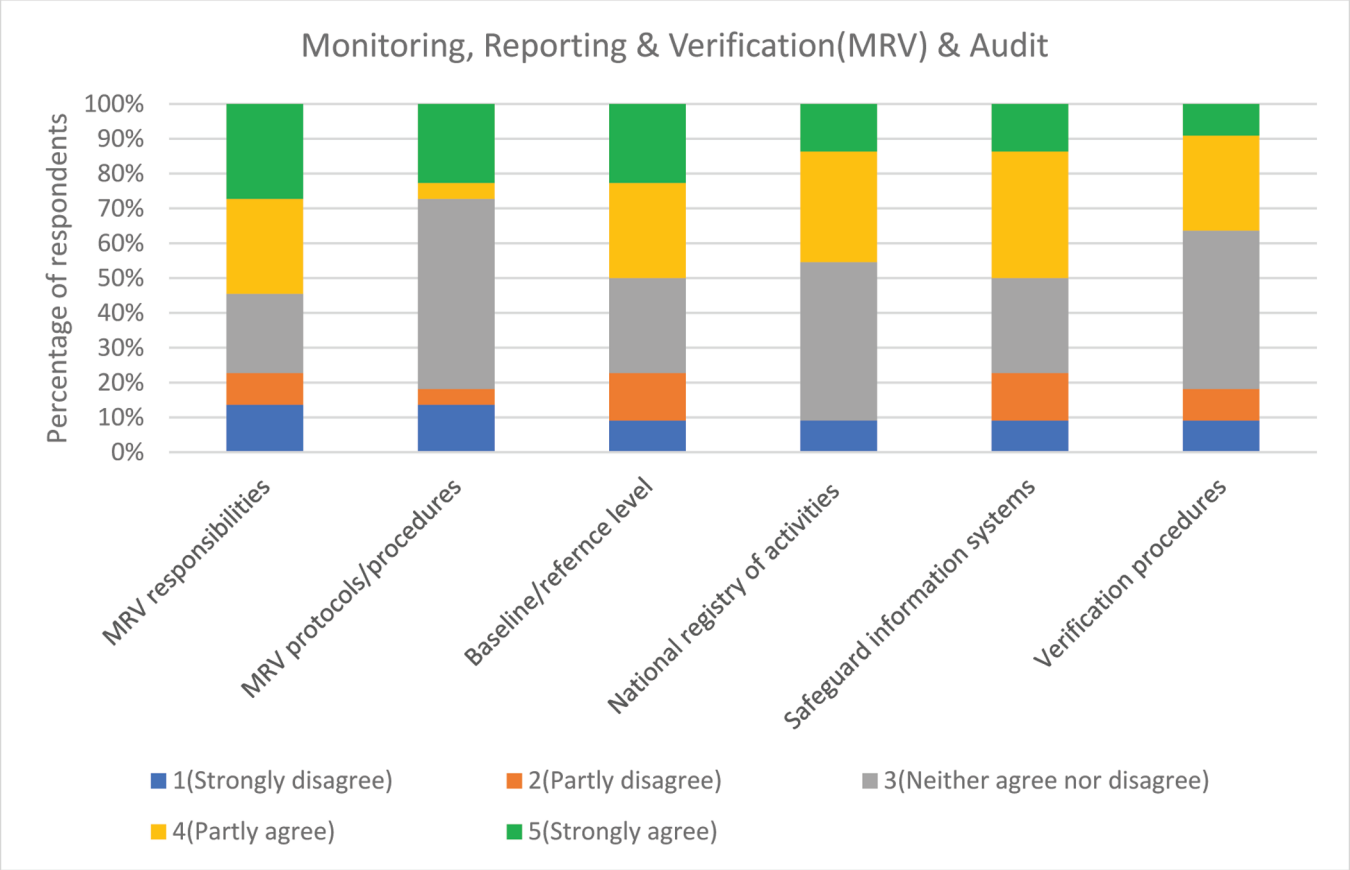
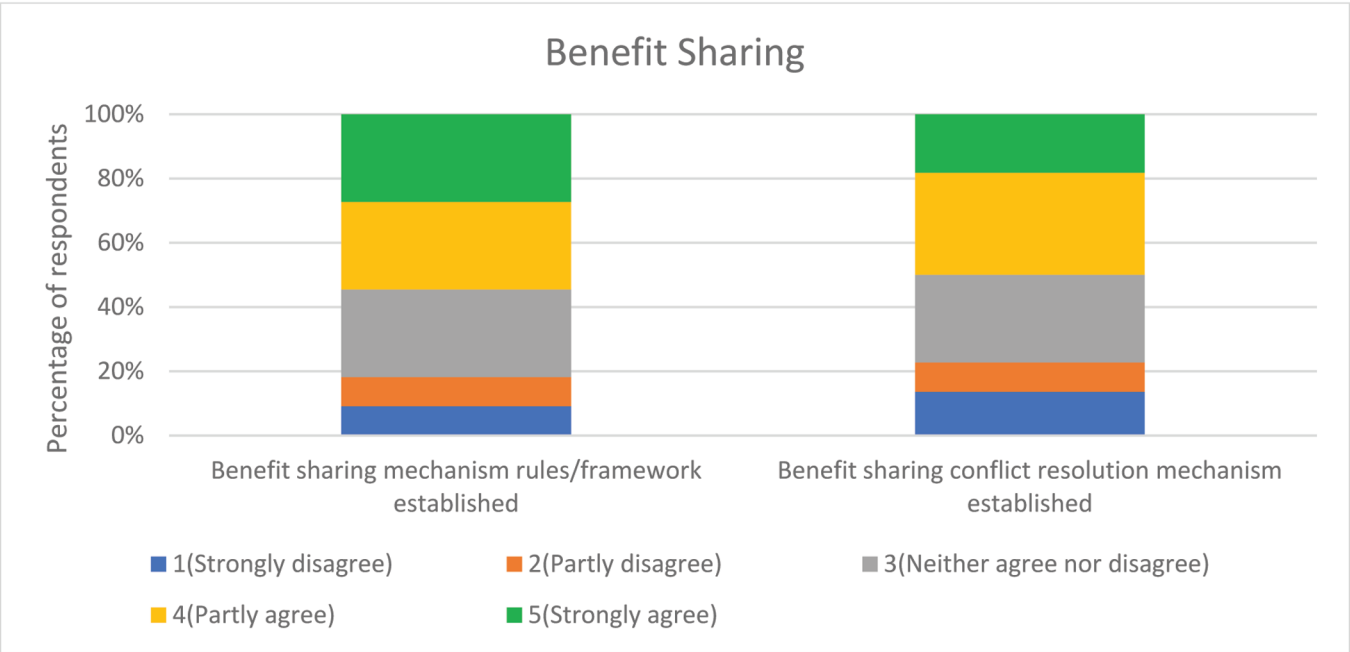


FIGURE 5 *Proportion of the different respondents (N=22) who agreed or disagreed with regards to Benefit Sharing mechanism for REDD+ readiness*



process because REDD+ finance mechanisms remain uncertain and financial flows fall far below promised amounts within negotiations at the global and national level (Creed and Nakhooda 2011, Streck 2012, Minang *et al.* 2014). Overall, most respondents rated the country medium to high (neither agree nor disagree, partly agree and strongly agree) with regards to the assessment of investment requirements and the expression of interest to invest in REDD+ implementation by the private sector and the government institutions (See Figure 6).

Demonstration and pilot

Demonstration and pilots are necessary as part of REDD+ readiness implementation processes. A key reason underpinning this is to foster 'learning by doing' and to enable adaptive management with REDD+ (Minang *et al.* 2014). Demonstration projects or activities exist mostly at the subnational level, while pilots could involve national-level systems (Minang *et al.* 2014). As indicated in Figure 7, overall, most respondent (more than 50%) provided a medium to high ranking (neither agree nor disagree, partly agree and strongly agree) pertaining to the demonstration and pilot projects in the country mostly because of the REDD+ pilot projects that have been implemented in the country. Typical examples of these projects include the REDD+ pilot project in Ankasaho and the REDD+ pilot project in Bedum which is operated by the Portal Limited (Asiyanbi *et al.* 2017). There is also the International Tropical Timber Organisation (ITTO) project entitled, "Advancing REDD+ in Ghana: Preparation of REDD+ Schemes in Off-Reserve Forests and Agroforests", which was implemented in Ghana by the Forestry Research Institute of Ghana (FORIG), in collaboration with the Climate Change Unit (CCU) of the Forestry Commission (FC), partners at Kwame Nkrumah University of Science and Technology (KNUST), and researchers from Bern University of Applied Sciences (Asare and Kwakye 2013).

Quantified emission reduction program

Majority of the respondents (64%) were aware of the fact that the country had a REDD+ quantified emission reduction program. Furthermore, it was also confirmed during FGD by all the respondents that the country had an emission reduction program. However, they stated that examples of challenges that affect effective and efficient implementation of this program include institutional challenges; lack of institutional synergy; inadequate funding; lack of tenure rights for farmers; lack of timely, reliable, and adequate baseline data; lack of cooperation from some stakeholders (chiefs, political leaders etc.) due to different interests; lack of sensitization; and logistical issues.

DISCUSSION

This study has attempted to evaluate all the initiatives that have been made by the government of Ghana and other relevant stakeholders to promote the REDD+ readiness and implementation in the country. With respect to planning and coordination for REDD+ readiness, the study found that coordination responsibilities for REDD+ readiness were still unclear, there was no clear agreement on decision-making channels and the country had not yet conducted strategic scenario analysis and opportunity cost/trade off analysis for REDD+ implementation. The reason could be that while the Ghana Forestry Commission has taken responsibility for policy actions related to REDD+ implementation and overall

FIGURE 6 *Proportion of the different respondents (N=22) who agreed or disagreed with regards to financing for REDD+ readiness*

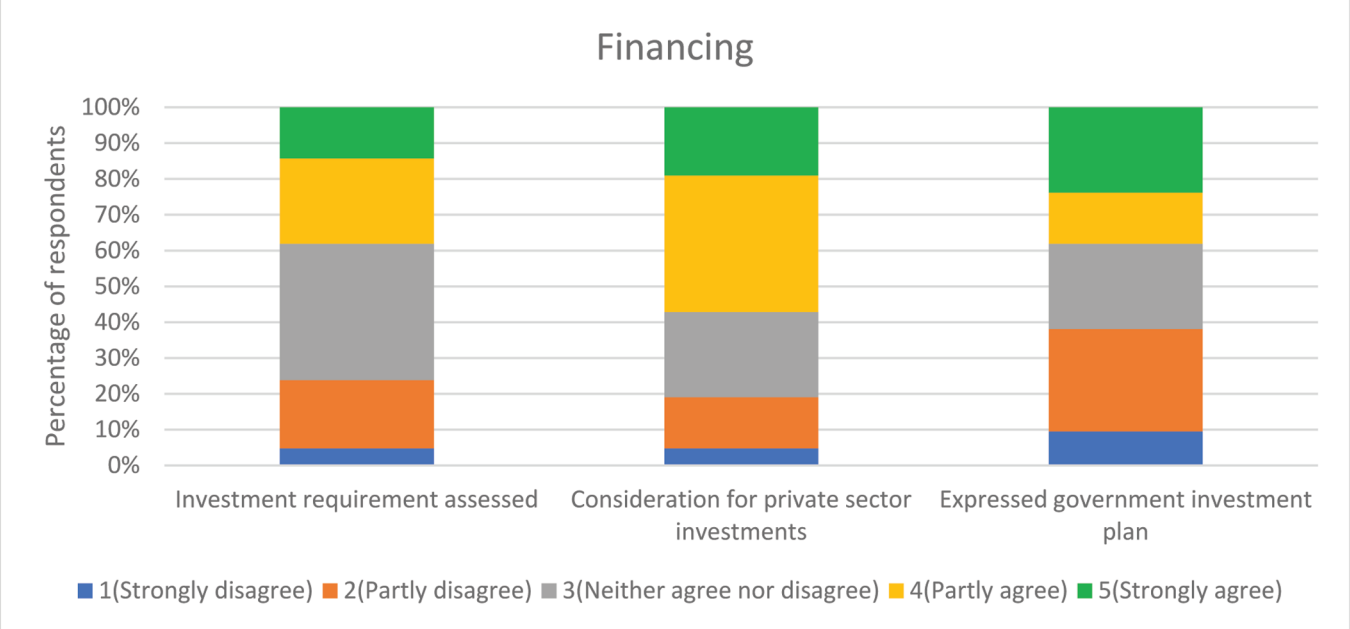
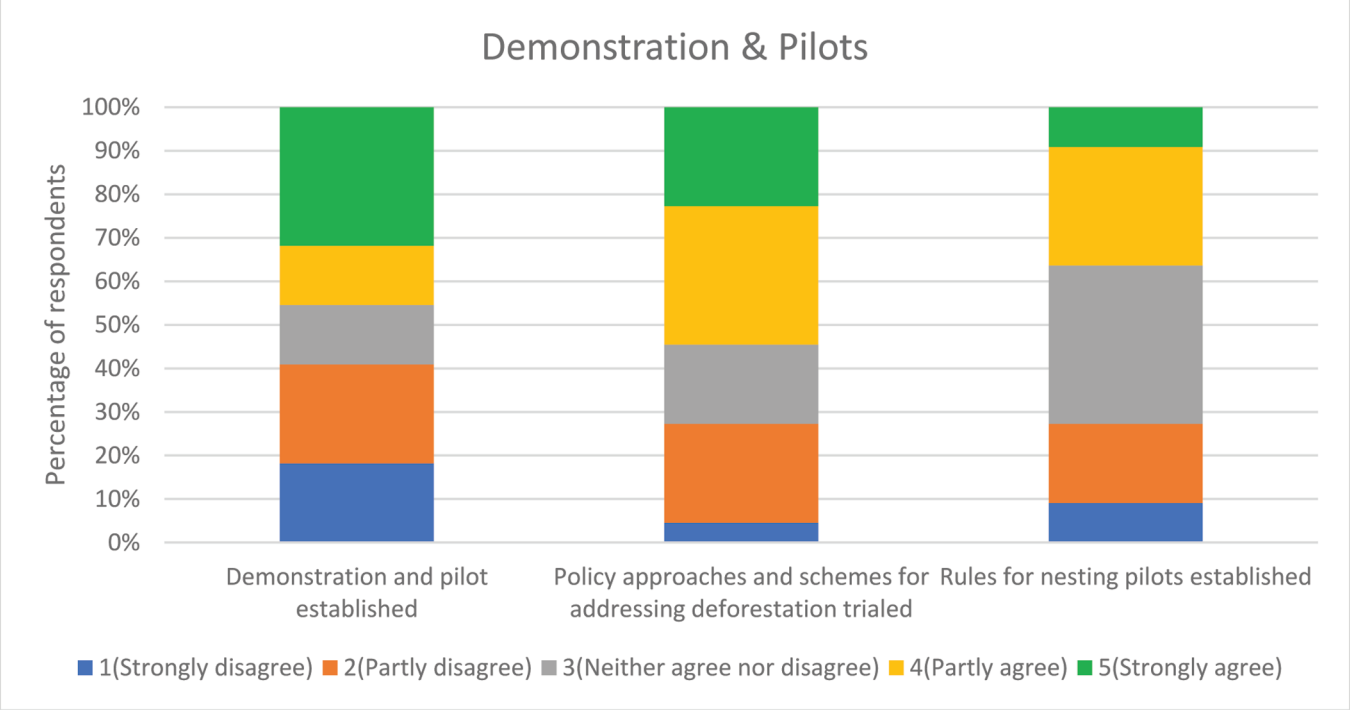


FIGURE 7 *Proportion of the different respondents (N=22) who agreed or disagreed with regards to demonstration and pilot projects for REDD+ readiness*



coordination, Asiyanbi *et al.* 2017 argue that "early REDD+ proposals sought actual piloting and demonstration activities among NGOs, communities and private forestry enterprises". Additionally, this might be because of the weak institutional and technical capacity for REDD+ readiness and implementation that currently prevails in the country (Romijn *et al.* 2009, Asiyambi *et al.* 2017).

In the arena of policies, laws and institutions for REDD+ readiness, two contentious issues still prevail in Ghana namely tenure rights and carbon rights. Indeed, carbon and tenure rights have not been clarified in the country and still remain very vague. The reason is because forest management in Ghana is very much centralized with the State administering most of forests in the country. In other countries in Central and West Africa and perhaps Ghana, this serves to usurp the rights of access of communities who depend on the forest and the resources therein (Nguiffo *et al*. 2009, Sama and Tawah 2009, Alemagi *et al.* 2014). As Asiyambi *et al.* (2017) posit, formal and customary land and forest claims overlap in Ghana and there are complexities over land rights in the country. Furthermore, the country's National REDD+ Strategy recognises the fact that tenure rights in the country are ambiguous, contested and constitute a fundamental challenge to Ghana's REDD+ implementation (Ministry of Land and Natural Resources 2012). The problem of unresolved tenure rights arrangement in the REDD+ implementation process has been pointed out in Vietnam with Do *et al.* (2012) positing that relative to the government, indigenous forest-dependent communities in the country have limited rights of access to the land and forest resources.

MRV provides a robust foundation for REDD+ readiness and implementation. Before an emissions reduction or carbon sequestration activity can deliver credible market credits and payments, the activities generating them must be accurately and transparently measured or monitored, reported, and then verified by third parties (Asare and Kwakye 2013). All REDD+ projects are required to establish or develop a robust MRV plan as part of their feasibility or PDD documents (Asare and Kwakye 2013). Good performances were recorded for the entire MRV and auditing indicators for REDD+ implementation. This could be a reflection of the fact that the country signed in 2019 a five-year emission reduction program with the World Bank and therefore all the MRV protocols are in place for REDD+ implementation.

That said, it was observed that there were initiatives in place for benefit sharing of proceeds emanating from REDD+ implementation. Indeed, national readiness for REDD+ implementation needs to establish equitable, transparent, and effective benefit-sharing schemes or mechanisms. These mechanisms should not only look at rules and modalities for sharing proceeds from REDD+ implementation, but also at how conflicts emanating in the process can be resolved so that incentives do not produce perverse reactions (Costenbader, 2011; Lindhjem *et al.* 2009; Torres and Skutsch, 2012; Minang *et al.* 2014). In the words of Minang *et al.* (2014), "examples of specific rules in the design of benefit-sharing mechanisms include the formulae for allocating benefits, eligibility for benefits, maintaining transparency in the process, timing of payment, and responsibilities of actors in the benefits sharing process at multiple levels". In fact, some authors like Dumenu *et al*. (2014) have suggested some guidelines for benefit sharing within the context of REDD+ implementation in Ghana. For example, they suggest the prevailing benefit sharing mechanism for timber harvesting in the country to be

adopted for REDD+. In this mechanism, 50% of the proceeds goes to the Forestry Commission, 25% to the District Assembly, 11% to the Stool, 9% to the Traditional Authority, and 5% to the Office Administrator of Stool Lands.

There was some evidence of investment in REDD+ implementation in the country by the government and the private sector. One of the reasons underpinning this result is that, it has been reported that Ghana launched in 2017 the development of a REDD+ Investment Plan in its efforts to operationalize its National REDD+ Strategy and further the implementation of other Warsaw framework elements (Attafuah 2017). Diversifying and coupling financial or funding sources – including facilitating private-sector contributions and enabling government investments – have been posited as key ways of enabling financial sustainability in REDD+ implementation (FONAFIFO *et al.* 2012; Knight *et al.* 2010; Minang *et al.* 2014).

Interestingly, it was observed that the country has an emission reduction program that is currently functional in the country. Apart from institutional issues, lack of cooperation from some stakeholders (chiefs, political leaders etc.), lack of sensitization and funding, the lack of reliable baseline data and logistical issues were cited as some of the challenges that affect the implementation of this emission reduction program. These results are not different from the one observed by Minang *et al.* 2008, p. 169) in Cameroon who reported that "geographic/remotely sensed data and information at Centre de Télédétection et de Cartographie Forestière (CETEL-CAF), MINFOF, Global Forest Watch (GFW), and Institut Nationale de Cartographie (INC) on land use, land cover, and forests have different mathematical, thematic and attribute accuracy levels".

RECOMMENDATIONS

It is clear from the preceding sections of this paper that there are still a series of challenges that hinder REDD+ readiness and implementation of REDD+ in Ghana. Therefore, we argue that the development of strong institutions for REDD+ implementation; clarification of carbon and tenure rights; capacity building for data collection; and institutional cooperation or collaboration are fundamental keys that can be used to promote REDD+ readiness and implementation in Ghana. Each is presented in turn.

Development of strong institutions for REDD+ implementation

There is a need for robust institutional arrangement at the national level to promote or advance REDD+ readiness and implementation in Ghana. One possible option would be to empower both the regulatory and enforcement units involved in forest management in Ghana through regular and relevant workshops as well as training courses. Additionally, the creation of an institutional body that is made up of highly qualified state and non-state actors for REDD+ readiness and implementation in the country is indeed fundamental.

Clarification of carbon and tenure rights

Formulating a clear regulatory and policy framework or guidelines that addresses carbon and tenure rights arrangement in Ghana is considered vital for REDD+ readiness and implementation in the country. Furthermore, the government of Ghana could re-enact their relevant legislations, policies, plans, guidelines, and programs with a focus on allocation provisions that underpin carbon and tenure rights for the successful REED+ readiness and implementation in the country.

Capacity building for data collection

There is a need for capacity building in the domain of data collection (the different types of data to be collected for which capacity building is required include satellite imagery on forest cover and other land use) for advancing REDD+ readiness and implementation in Ghana. One important way of achieving this is to create projects whose fundamental objective will be to develop capacity of relevant forest stakeholders (government officials, civil society, the private sector) in remote sensing and GIS as a means to promote REDD+ readiness and implementation.

Institutional cooperation or collaboration

It is our recommendation that government institutions work in a collaborative manner to advance the REDD+ readiness and implementation in the country. The importance of collaborative management is indeed fundamental and as Blumenthal and Jannink (2000, pp.1) opine, "collaboration among multiple stakeholders can be crucial to the success of natural resource management". The fundamental rational is that collaboration could result in better, effective and efficient management of natural resources. It is therefore proffered that all the major actors (government agencies, civil society, traditional leaders, private sector, forest-dependent communities, and research institutions) working to advance REDD+ readiness and implementation collaborate from all perspectives to identify pathways towards the promotion of REDD+ in Ghana.

CONCLUSION

The analyses provided in this paper assesses the extent to which the REDD+ mechanism has been implemented in Ghana. The results reveal that several aspects of planning and coordination were ranked high and some progress has been made in the arena of MRV and audit, benefit sharing, financing, as well as demonstrations and pilots. That said, some issues or challenges still prevail in the arena of policy, laws and institutions, as well as implementation of an emission reduction program. Therefore, very specific policy recommendations for advancing REDD+ readiness and implementation in Ghana have been proffered in this paper including development of strong institutions for REDD+ implementation, clarification of carbon and tenure rights, capacity building for

data collection, and institutional cooperation or collaboration. Implementing these recommendations are a fundamental prerequisite for an effective and efficient implementation of REDD+ in Ghana.

ACKNOWLEDGEMENTS

This work was supported through the Climate Research for Development (CR4D-19-04) Postdoctoral Fellowship [CR4D] implemented by the African Academy of Sciences (AAS) in partnership with the United Kingdom's Department for International Development (DfID) Weather and Climate Information Services for Africa (WISER) programme and the African Climate Policy Center (ACPC) of the United Nations Economic Commission for Africa (UNECA). Statements made and views expressed in this work are solely the responsibility of the author(s). We all wish to express our most profound gratitude to all the different REDD+ actors in Ghana who accepted to spare their valuable time to take part in the interviews. Finally, we wish to express our thanks to the referees whose contributions were valued and greatly appreciated.

REFERENCES

ABISSATH, M.K. 2019. Ghana REDD+ Strategy for sustainable development. Government of Ghana, Accra. 87 pp.

ALEMAGI, D., MINANG, P., FEUDJIO, M., and DUGUMA, L. 2014. REDD+ readiness process in Cameroon: An analysis of multi-stakeholder perspectives. *Climate Policy* **14**(6): 709–733.

ALEMAGI, D., HAJJAR, R., DAVID, S., and KOZAK, R.A., 2012. Benefits and barriers to certification of community-based forest operations in Cameroon: An exploratory assessment. *Small Scale Forestry* **11**: 417–433.

AMMENBERG, J. 2003. Do standardized environmental management systems lead to reduce environmental impacts? Doctoral thesis. Institute of Technology, Linkoping University, Sweden.

ASIYANBI, A.P., ARHIN, A.A., and ISYAKU, U. 2017. REDD+ in West Africa: Politics of Design and Implementation in Ghana and Nigeria. *Forest* **8**(3): 1–24.

ASARE, R.A., and KWAKYE, Y. A guide to implementing REDD+ in Ghana: Criteria and modalities for developing a REDD+ project. Ghana Forestry Commission, IITO, and Ghana Council for Scientific and Industrial Research.

ATTAFUAH, E.G. 2017. Ghana launches the development of a REDD+ investment plan. UN-REDD Program Collaborative Workspace. Available online at: https://www.unredd.net/announcements-and-news/2684-ghana-launches-the-development-of-a-redd-investment-plan.html

BLUMENTHAL, D., and Jannink, J.L. 2000. A classification of collaborative management methods. *Ecology and Society* **4**(2): 13.

CHRISTOPHERSEN, T., and STAHL, J. 2011. REDD+ and biodiversity. Secretariat of the Convention on Biological Diversity. CBD Technical Series No. 50. In Secretariat of the Convention on Biological Diversity. CBD Technical Series No. 50.

COSTENBADER, J. 2011. REDD+ benefit sharing: A comparative assessment of three national policy approaches. Washington, DC: FCPF and UN-REDD.

CREED, A., and NAKHOODA, S. 2011. REDD+ finance delivery: Lessons from early experience (Carbon Finance Policy Brief Series). London/Washington DC: Overseas Development Institute/Henrich Boll Stiftung.

DO, T.H., CATACUTAN, D., VU, T.H., and LAI, T.Q. 2012. Will current forest land tenure impede REDD+ efforts in Vietnam? *(*Policy Brief No. 27). Nairobi: ASB Partnership for the Tropical Forest Margins, World Agroforestry Centre. 4 pp.

DUMENU, W.K., SAMAR, S., MENSAH, J.K., DERKYI, M., ODURO, K.A., PENTSIL, S., NUTAKOR, E., FOLI, E.G., and OBENG, E.A. 2014. Benefit sharing mechanism for REDD+ implementation in Ghana. Consultancy Report. Forestry Commission, Accra, Ghana. 69 pp.

FAO. 2011. The state of the world's forests. Food and Agricultural Organization. Rome, Italy. 179 pp.

FCPF and UN-REDD. 2010. Guidelines on stakeholder engagement in REDD+ Readiness, with a focus on the participation of indigenous peoples and other forest-dependent communities (Version of November 17). Washington, DC: FCPF, UN-REDD.

FOLI, E.G., and DUMENU, W.K. 2013. Ghana's REDD+ Benefit Sharing Dialogue. Paper prepared for the REDD+ Benefit Sharing Dialogue: 2–5 December, 2013. Elmina, Ghana. 57 pp.

FONAFIFO, CONAFOR, and MINISTRY OF ENVIRONMENT. 2012. Lessons learned from REDD+ for PES and conservation incentive programs. Examples from Costa Rica, Mexico and Ecuador. Washington, DC: The World Bank.

FOX, L.P. 2017. Food security, forestry and REDD+ benefit distribution in Ghana. M.Sc Thesis, Faculty of Forestry, University of British Columbia, Canada.

GHANA FORESTRY COMMISSION. 2017. Ghana's national forest reference level. REDD+ Technical Secretariat and Ghana Forestry Commission. Accra, Ghana.

GoG. 2016. Ghana REDD+ Strategy. World Ban Forest Carbon Partnership Facility. Washington DC. 102 pp.

HAJJAR, R. 2014. Advancing small-scale forestry under FLEGT and REDD in Ghana. *Forest Policy and Economics* **58**: 12–20.

HAJJAR, R. 2015. Researching the possible and likely implications of Ghana's REDD+ and VPA plans on land and tree tenure reform. United Kingdom Department for International Development, London. 35 pp.

IUNC. 2016. Mainstreaming gender into Ghana REDD+ process: Successes and challenges of this journey. International Union for the Conservation of Nature, Gland Switzerland. 16 pp.

IEG (INDEPENDENT EVALUATION GROUP). 2011. The Forest Carbon Partnership Facility. *Global Program Review* **6**(3). Washington, DC: The World Bank Group.

KNIGHT, C., STEPHENSON, J., WEBB, C., GUNAWARDENA, L., COSTA, L., BRACONI, M., and OBERRATH, N. 2010. National REDD+ funding frameworks and achieving REDD+ Readiness – findings from consultation. London: Conservation Finance Alliance (CFA) and PriceWaterhouse Coopers (PwC).

KVALE, S. 1996. Interviews: an introduction to qualitative research interviewing. Sage Publications, Thousand Oaks, California, U.S.A. 326 pp.

LINDHJEM, H., ARONSEN, I., BRATEN, K.G., and GLEINSVIK, A. 2009. Experiences with benefit sharing: Issues and options for REDD-plus. Oslo: Poyry Management Consulting.

MINANG, P.A., VAN NOORDWIJK, M., DUGUMA, L., ALEMAGI, D., DO, T.H., AGUNG, P., BERNARD, F., ROBIGLIO, V., CATACUTAN, D., SUYANTO, ARMAS, A., SILVA, C., PIANA, B., FEUDJIO, M., GALUDRA, G., RETNO, M., WHITE, D., KAHURANI, E., WIDAYATI, A., NAMIREMBE, S., and LEIMONA B. 2014. REDD+ Readiness progress across countries: time for reconsideration. *Climate Policy* **14**(6): 685–708.

MINANG, P.A., MCCALL, M.K., STUTSCH, M.M., and VERPLANKE, J.J. 2008. A data support infrastructure for Clean Development Mechanism forestry implementation: an inventory perspective from Cameroon. *Mitigation and Adaptation Strategy for Global Change* **13**: 157–178.

MINISTRY OF LANDS AND NATURAL RESOURCES. 2012. Ghana Forest And Wildlife Policy. Ministry of Lands and Natural Resources: Accra, Ghana. 78 pp.

MURIUKI, T. 2016. To avert a chocolate shortage, Ghana bets on jurisdictional REDD+. Ecosystem market place.

NKETIAH, K., OSEI-TUTU, P., and ASARE, A. 2009. Context for implementing REDD + in Ghana. In *Background paper for REDD+ Readiness Field Dialogue in Ghana.*

NGUIFFO, S., KENFACK, E.T., and MBALLA, N. 2009. The influence of historical and contemporary land laws on indigenous peoples' land rights in Cameroon. Washington, DC: Rights and Resources Initiative. 58 pp.

ROMIJN, E., HEROLD, M., KOOISTRA, L., MURDIYARSO, D., and VERCHOT, L. 2012. Assessing capacities of non-annex I countries for national forest monitoring in the context of REDD+. *Environmental. Science and Policy* **19**: 33–48.

SAEED, A., MCDERMOTT, C., and BOYD, M. 2018. Examining equity in Ghana's national REDD+ process. *Forest Policy and Economics* **90**: 48–58.

SAMA, N.J., and TAWAH, E.B. 2009. Origin and background of REDD+ in Cameroon. In. Costenbader., J (Ed.), *Legal frameworks for REDD. Design and implementation at the national Level*. Gland: International Union for the Conservation of Nature. 41 Pp.

STRECK, C. 2012. Financing REDD+: Matching needs and ends. *Current Opinion in Environmental Sustainability* **4**: 628–637.

THE REDD+ DESK. 2002. Community forest resource management programme. Retrieved from https://theredddesk.org/countries/plans/community-forest-resource-management-programme-ghana

TORRES, A.B., and SKUTSCH, M. 2012. Splitting the difference: A proposal for benefit sharing in Reduced Emissions from Deforestation and Forest Degradation (REDD+). *Forests* **3**: 137–154.

UNFCCC. 2008. United Nations Framework Convention on Climate Change. Retrieved from http://unfccc.int/2860.php

WHITE, D., MINANG, P.A., AGUS, F., BORNER, J., HAIRIAH, K., GOCKOWSKI, J., and VAN NOORDWIJK, M. 2010. Estimating the opportunity costs of REDD+, a training manual. Washington, DC: World Bank.

QUESTIONNAIRE

An assessment of REDD+ Readiness and implementation in Ghana
Questionnaire

Target Group: All REDD+ actors in Ghana including: civil society (national and international NGOs), relevant government officials, donor agencies, research institutions, the private sector, the media, elected officials.

Dear Sir/ MS,

The lack of baseline data on REDD+ implementation in Ghana requires action from all of us. The purpose of this study is to assess REDD+ readiness and implementation in Ghana and suggest possible pathways for overcoming any hurdles emanating from REDD+ readiness and implementation.

The Institute for Environment and Sanitation Studies at the University of Ghana is conducting a survey using the attached questionnaire to solicit from your end specifics or fundamentals on REDD+ readiness and implementation in Ghana. The questionnaire has scale related questions as well as open ended questions and while this survey is **optional**, we sincerely appreciate your candor in providing answers to these questions.

It is extremely important to note that this survey is strictly for research purposes. Thus, your identity is strictly confidential and will not be revealed to a third party. Moreover, any response you give will not be traced to you.

In case you need more information and/clarification, please feel free to contact the following persons:

1. Dieudonne Alemagi, Ph.D
Institute for Environment and Sanitation Studies, Annie Jiagge Road,
Legon, Accra, Ghana
Email: dalemagi@yahoo.co.uk

2. Daniel Nukpezah, Ph.D
Institute for Environment and Sanitation Studies, Annie Jiagge Road,
Legon, Accra, Ghana
Email: dnukpezah@staff.ug.edu.gh

On a scale of 1-5 (1- strongly disagree, 2- Partly disagree, 3- Neither agree nor disagree, 4-Partly agree, 5-Strongly agree), rate your level of agreement or disagreement with each of the following questions.

Questions	Ranking
1. R-PIN (REDD+ Readiness Project Idea Note) been developed?	
2. R-PP (REDD+ Readiness Preparation Proposal) been developed?	
3. REDD+ National Strategy developed?	
4. REDD+ opportunity cost/Trade-off analysis done?	
5. Strategic scenario analysis for green growth conducted?	
6. Decision making channels agreed?	
7. Coordination responsibilities agreed?	
8. Institutional responsibility/roles clarified?	
9. Procedure for stakeholder's participation establish?	
10. Key relevant stakeholders involved?	
11. Political will and support exist?	
12. Carbon rights clarified?	
13. Tenure rights/institutional arrangement clarified?	
14. Conflict resolution framework established and institutionalized?	
15. MRV responsibilities agreed?	

Questions	Ranking
16. MRV protocols/procedures determined?	
17. Baseline/reference level established?	
18. National registry of activities established?	
19. Safeguard information systems established?	
20. Verification procedures established?	
21. Benefit sharing mechanism rules/framework established?	
22. Benefits sharing conflict resolution mechanism established?	
23. Investment requirements assessed?	
24. Consideration for private sector investment?	
25. There is expressed government investment plan?	
26. Demonstration and pilot established at sub-national level?	
27. Policies approaches and schemes for addressing deforestation been crafted	
28. Rules for nesting pilots at sub-national to national level been established	

29. Is there a REDD+ quantified emission reduction program in the country?

☐ YES ☐ NO

30. If you answer YES to question 29, what challenges do you faced as a result of implementing a REDD+ quantified emission reduction program?

31. If you answer NO to question 29, what are the different hurdles that prevent the country from implementing a REDD+ quantified emission reduction program?