

**AN ASSESSMENT OF STAKEHOLDER INVOLVEMENT IN THE  
IMPLEMENTATION OF RE-AFFORESTATION PROJECTS IN GHANA**

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## DECLARATION OF AUTHORSHIP

“I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma at Kwame Nkrumah University of Science and Tecnology,Kumasi or any other educational institution, except where due acknowledgement is made in the thesis

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## **ABSTRACT**

This study had investigated the nature of stakeholder involvement in the implementation with regards to re-afforestation projects of the Forestry Commission in the Ashanti Region of Ghana. The study utilized mixed method research approach. Two hundred (200) participants were selected for the study. Primary data was the main source of information for the study. The study used structured questionnaire to obtain the primary data. SPSS version 23 was used to analyze the data. The study found that institutional policy management, technical drivers and socio-economic drivers have strong influence on stakeholder's involvement that is 67.3% variability in stakeholder's involvement are explained by institutional policy management, technical drivers and socio-economic drivers. Secondly, the study found that stakeholder's involvement has very strong predictive influence on sustainability of re-afforestation projects. The study found that 70.6% variability in sustainability of re-afforestation projects are explained by stakeholder's involvement. Again, the study found that, participants were involved in the budgetary process of their organization including the control process. Respondents also indicated that they were always informed about the project wished to be undertaken in their organization during coordination process while others also showed that they were involved in the monitoring and evaluation procedure undertaken by the organization. This shows the participation of stakeholders in organizational activities. This research concludes that institutional policy management, technical drivers and socio-economic drivers have strong influence on stakeholder's involvement. Also, the study found that stakeholder's involvement has very strong predictive influence on sustainability of re-afforestation projects. The study recommends the need for strong stakeholder involvement in order to enhance re-afforestation project success and sustainability.

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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 BACKGROUND OF THE STUDY**

Forest resource depletion has become an issue of global concern. Statistic has shown that, the rate at which forest resources are depleted globally is over a hundred times (Chaytor et al, 2002; Chandra and Idrisova, 2011). Existing evidence has indicated that, out of the 6 billion hectares of forest reserve across the globe some time ago, as at 2010 only 4 billion have been left due to the impact of forest depletion (Meyfroidt, Vu & Hoang 2013; Potapov, Turubanova & Hansen 2011).

Simultaneously, about 13 million hectares of forest continuously have been degrading as a result of natural processes or conversion by human activities (FAO 2005, 2010). This situation has been even worse in Africa in that deforestation rate account for more than 4 billion hectare of forests that are annually depleted estimating to be as twice the global rate of extinction. This notwithstanding, evidence on Ghana's forest conditions revealed that out of the 715,500 hectares of forest cover in the region, 23% of those forest hectares have been depleted just within the two decades prior to the year 2000 (Aheto et al. 2016; Oduro et al. 2015).

Observably, the common practices that have been identified as the main causes of this forest depletion included agriculture, illegal logging (chainsaw operation) and unauthorized mining (galamsey) in the forest areas, illicit and uncontrolled exploitation of wildlife, heavy dependence on woodfuel, particularly in the savanna regions wildfires (de Araujo Barbosa, Atkinson & Dearing 2016; Carlsen, Hansen & Lund 2012; Hansen, Lund & Treue 2010; Oduro et al. 2015; Teye 2013). In addition, wildlife hunting in most parts of the region affects many forest reserves as a result degrading the quality of the forest cover. More precisely, activities of the timber industry

exerts much impact on the well-being of the forest reserve as loggers are poorly regulated and ending up cutting trees that might not be ready for cut (Carlsen, Hansen & Lund 2012). The increasing destruction of forest reserves globally has been one of the factors leading to global warming and other effects (Beymer-Farris & Bassett 2012; Butchart et al. 2010; Clark et al. 2011; Larson 2011; Ripple et al. 2017). As a result, most areas in these tropical zones are left undeveloped and as an impact of that, peoples' lives are affected.

As becoming an issue of global concern, several initiatives have been taken by the international communities with the aim of helping restore and maintain the natural quality of the global forest. Various countries in this regard have come into agreement to take efforts to help avoid the practices that causes depletion to the forest in order to restore the hectares of forest that have been already destroyed. Several conventions and treaties have been signed by these countries towards global forest protection. Examples of these treaties and conventional steps towards forest reserve protection practices include the Convention for Biological Diversity (CBD), as well as the United Nations Framework Convention for Climate Change (UNFCCC) at the 1992 Earth Summit in Rio de Janeiro (UNCED 1992; Wible 2012).

On similar effort, the Bonn challenge in September 2011 called for an initiation by the world's leaders in Bonn to introduce the restoration of degraded landscapes programmed to help restore degraded lands (UNEP 2011; Verdone & Seidl 2017). This challenge in Bonn compelled the leaders to initiate a programme to restore about 150 million hectares of degraded forests and lands by the year 2020. Other initiatives were the realization of joint effort by the global leaders on forest restoration which was part of the Millennium Development Goals (Specifically Goal 7) and the recent Sustainable Development Goals (specifically Goal 15, target 15.2) which also advocates for

improvement in sustainable management of all types of forest reserves across the globe, including the prevention of all activities that leads to forest degradation such as deforestation, illegal logging and among others while encouraging restoration practices such as afforestation and reforestation at the global level (McInnes 2018; Sachs 2012). As part of concern, various countries have adopted several strategies and practices to help promote the global forest restoration program to promote global sustainability in the forest protection programme of all types of forest.

Interestingly, the sub-Saharan region is possessed with a lot of natural forestry in the various communities, but most of these forests are owned and managed by the chiefdoms and clans (Public) with the central government as the main controller. With the effort of the Forestry Commission in helping restore damaged forests and protect the national parks, the Ministry introduced the Ghana Forest Plantation Strategy (GFPS) in 2016 to integrate food crops production with forest plantations to help restore depleted forest areas and increase the standard of living of people who depend on the depleted forest reserves. This system was known as the “Taungya System”. Presumably, it has been speculated that after 25 years, depleted forest cover of about 82.5 million cubic meters is expected to have been recovered with an annual average production rate of 3.25 million cubic meters (Oduro et al. 2015).

Another annual rate that is expected with the introduction of the strategy is about 1.41 million cubic meters production rate. As an increasingly concern for forest protection, the local government has also undertaken measures and practices towards forest protection in the various communities. To achieve this, local people are encouraged to partake in the forest restoration

programme by making sure that all practices that causes harm to the forest are avoided to help maintain quality and restore all degraded lands (Dooley et al, 2008; Gebara, 2013).

The numerous measures taken by the local government towards forest protection in the sub region however have given most rights to some individuals to mingle with local peoples whose lands are being used for the planting projects. This however many times affects the success and sustainability of many forest projects undertaken in these areas. Authorities in these projects therefore explore further practices and management techniques that can help encourage local participation to achieve project goals and objectives.

## **1.2 PROBLEM STATEMENT**

Evidence from extant literature suggests that, local peoples' participation in forest resource management has received less attention. Most often, local people are excluded from the decision making process on how to maintain and enhance forest reserves. They are also disregarded of payment after taking part in re-forestation projects (Buchy & Hoverman 2000; Khadka et al. 2013; Palacios-Agundez et al. 2014). Other studies have even shown posited that local people are totally exempted from any decisions concerning forest projects and other important initiations (Gebara, 2013). Suggestions have shown that, most of these decisions are taken by supposed experts in forest management whose main job is to provide consultancy advice to people regarding intended activities and the requirements for those activities but in the actual sense exempt the people from the decision process both at the conception stage of the project and its implementation stage (Pimbert and Pretty, 1994; Gebara, 2013).

Amusingly, there are only few instances that local people and other stakeholders are informed about forest projects and are considered in the decision making process to partake in the planning,

implementation and monitoring of the project in question (Pimbert and Pretty, 1994; Gebara, 2013). The increasingly concern for local people's involvement in the forest project has indicated that this approach for the forest project would be more effective in achieving project success and also creating sense of ownership among the people to promote the sustainability of the project.

The main problem here is the fact that local people who are stakeholders in the restoration of forest remain unengaged in the implementation of the re-afforestation projects and also there is lack of clear information whether or not these people have the potentials to contribute effectively towards achieving project sustainability. Due to this, this study deems to assess the effect of stakeholders' involvement in the implementation of re-afforestation projects. Therefore by pursuing this study, the Ashanti region was focused since re-afforestation project had been a prioritization since the year 2014 and the enquiry is to determine stakeholder's contribution to the project success and sustainability. This finding would help provide needed information on the implementation of such forest projects in the study area as well as serving global objectives on forest protection.

### **1.3 RESEARCH AIM**

The study seeks to an assessment of stakeholder involvement in the implementation of re-afforestation projects in Ghana

### **1.4 RESEARCH OBJECTIVES**

The broad objective of the study is to examine the nature of stakeholder involvement in the implementation of re-afforestation projects of the Forestry Commission in the Ashanti region and assess its contribution towards project sustainability.

Specifically, it seeks to:

1. To find out the nature of stakeholders' involvement in the implementation of re-afforestation projects in Ashanti region
2. To explore the determinants of stakeholder participation in the implementation of the re-afforestation projects in Ashanti region
3. To explore the effects of stakeholders' involvement on the success and sustainability of re-afforestation projects in Ashanti region

## **1.5 RESEARCH QUESTIONS**

This research seeks to address this question: What is the nature of stakeholder involvement in the implementation of re-afforestation projects of the Forestry Commission in the Ashanti region and how does that contribute towards project sustainability?

Specifically, it seeks to answer the following questions:

1. What is the nature of stakeholders' involvement in the implementation of re-afforestation projects in the Ashanti region?
2. What are the major determinants of stakeholder participation in the implementation of the re-afforestation projects in Ashanti region?
3. What are effects of the involvement of stakeholders on the success and sustainability of the re-afforestation projects in Ashanti region?
4. What possible framework can be adopted to ensure that there is sustainable stakeholder involvement in the re-afforestation projects?

## **1.6 SCOPE OF THE STUDY**

Contextually, the study explores into the nature of stakeholder engagement that is adopted by the Forest Services Division of the Forestry Commission of Ghana in the implementation of re-afforestation projects in Ashanti region. The study will further explore the various factors that determine the rate of involvement of these stakeholders, as well as the influence such involvement has on the success of re-afforestation projects in Ashanti region. It will also suggest a sustainable structure which should be adopted in order to ensure stakeholders participation in implementation of re-afforestation projects.

The study will be carried out in the Ashanti region, which has New Adubiase as its capital. It is one of the twenty-seven districts of the Ashanti region, and often described to be within the forest zone of Ghana. The selection of Adansi South for this research is motivated by their prioritization of re-afforestation for almost a decade now. In terms of time scope, this research will focus on studying stakeholders of the re-afforestation programmes, who have been in Ashanti region, specifically the project communities since the inception of the 2014 District Medium Term Development Plan.

## **1.7 SIGNIFICANCE OF THE STUDY**

The global benefit of this research cannot be over emphasized. Tracing the path of this study, the discovery of how the re-afforestation project can be improved would help benefit the Ministry of Forest Management to increase participation in the forest project taking into consideration the Sustainable Development Goal 15 which aims at protecting, restoring and promoting sustainable use of terrestrial ecosystems, sustainable manage forests, combating desertification, and halting

and reversing land degradation, as well as halting biodiversity loss. Looking at the importance of forest reserves and their role in averting risks associated with natural disasters like floods, occurrence of droughts, landslides and other related activities, study will help empower the Forest Commission in ensuring that forest reserves are protected and sustained to achieve benefits such as food security, global safety and among others.

Again, counting on the significance of the forest resources to the GDP of the country, study would help enlighten the Knowledge of the Forest Ministry on the need for promoting the sector by making sure that regulations are enforced to help develop the sector and also enhance forest management practices to achieve sustainable development. In addition, the ministry will get the knowledge on some of the strategies and practices that can help the ministry contribute towards economic growth and development, particularly in the GDP of the country.

More so, study will provide information that would fill the gap in the area of stakeholder's participation in the implementation process of the re-forestation project in Ghana. Studies in this area had been very little thereby leaving a gap between stakeholders' involvement in forest projects. Henceforth, study covers the determinants of forest project success, especially stakeholder factors. Besides, the study will empower and motivate policy makers to make effective policies to address the extreme depletion of forest reserves in the global forest zones, with more emphasis on the Ashanti region. This also would serve as evidence on forest project performance for future searchers, academicians and other scholars.



## **1.8 BRIEF METHODOLOGY**

Based on the objectives of this study, a cross sectional survey design, using mixed method (Creswell, 2013) will be adopted. This study will also be based on a quantitative and qualitative approach of data collection and analysis. This study will chose the communities of the re-afforestation sites in the entire district as the target population. However, the target population has not been pre-estimated due to data limitations and therefore is reserved for supplementary enquiry in the course of this work. Study will use both random sampling and purposive sampling techniques in obtaining the sampled respondents among all the resident of the project communities. The condition will be that, the person in question should be a stakeholder who has been eligible to the re-afforestation projects in Ashanti region within the period of 2014 until the time of this study.

The study will collect qualitative data on the participatory strategies used by local government in formulating re-afforestation project. Study will also examine the determinants of stakeholder's participation in forest project and its impact on project performance. The qualitative data will include the level of engagement by the stakeholders and this will be estimated using statistical terms. Both data's (qualitative and quantitative) will be retrieved from primary sources, thus from the various stakeholders of the re-afforestation project. Using the information from progress report and quarterly reports from Ashanti region Assembly and the Forest Services Division in the Ashanti region, a Triangulation of data will be collected.

Interviews, Focus Group Discussions and a semi-structured questionnaire will be used in taking the primary data. The NVivo 12 analytical tool will be used for analyzing the quantitative data. From this, a content analysis will then be done to draw appropriate responses in line with the

research objectives. SPSS version 23 database will be used to code and store the quantitative data. Data will be analyzed using the descriptive statistics and will estimate the various rates of stakeholder's engagement as well as the association between relevant observed variables respectively. The output of the quantitative analysis will be presented using tables, graphs and charts.

## **1.9 RESEARCH HYPOTHESIS**

This research aims at testing the following hypothesis in contributing towards the attainment of the main research objective:

### *Hypothesis One:*

H<sub>0</sub>: Stakeholders participation in the involvement of implementation of the re-afforestation is low in the Ashanti region.

H<sub>1</sub>: Stakeholders participation to the implementation of the re-afforestation in the Ashanti region is high.

### *Hypothesis Two:*

H<sub>0</sub>: There is no positive relationship between stakeholder involvement in the implementation of the re-afforestation project, and project success

H<sub>1</sub>: There is a positive relationship between stakeholder involvement in the implementation of the re-afforestation project, and project success

### *Hypothesis Three:*

H<sub>0</sub>: Stakeholder involvement in the re-afforestation project has no positive influence on the sustainability of the project

H<sub>1</sub>: Stakeholder involvement in the re-afforestation project has a positive influence on the sustainability of the project

## **1.10 ORGANIZATION OF THE STUDY**

The study will be structured under five (5) chapters. Chapter one will present the background of the study, research problem, the research questions and objectives and relevance the relevance of the study. Chapter two will contain the literature review on the subject being explored. This very chapter shall include the theoretical and conceptual basis of the study as well as the empirical literature on stakeholder engagement in the implementation of re-afforestation project.

Chapter three will give the methodological approach that will be used for the study. It will contain the logic behind the selected method for the study including description of units of analysis, methods and techniques of data analysis and presentation. Chapter four will provide the analyses of the data obtained from the field. Last, Chapter five will conclude with the summary of findings, conclusions and recommendations which will help improve forest project performance in the communities.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

This chapter presents the review of literature in relation to the established objectives of the study based mainly on clarity even as the review has been organised as follows: Conceptual definitions of variables, theoretical reviews and the empirical review not forgetting a suggested notional structure to ensure sustainable re-afforestation project in Ghana.

#### **2.2 DEFINITIONS OF CONSTRUCTS**

##### **2.2.1 Stakeholders**

Stakeholders are group of individuals or an association of groups who comes together to influence the activities of an organization (Boddy, 2003). Fewings, (2005) indicated that stakeholders refers to group of individuals whose main goal is to help forecast the efficiency of the organization so that organizational goals and objectives can be achieved. Studies have shown that, stakeholders play a vital role in institution activities , mainly with regards to the institution. By the activities of stakeholders, firms can either achieve growth or business declination.

According to the Management Institute (2008), stakeholders refer to individual or group whose role in an organization forms a key part the organizations achievement. In taking decision in an organization, stakeholders play a significant role in ensuring that managers are monitored to ensure that they serve the interest of the shareholders. Per the stakeholder theory, managers'

main mission is satisfying the shareholders or business owners in business operation (Newcombe 2003).

Again, the Management Institute (2004) ascertained that stakeholders are group or individual whose interest is managed and determined by business managers. Although, stakeholders are the real business owners but managers takes that position on behalf of the stakeholders. In this case, stakeholders are responsible for ensuring that capital is made available to the organization to help increase performance. Li et al. (2013) showed that stakeholders are individuals whose activities influence the efficiency of work with regards to the profitability yields of the organization.

### **2.2.2 Re-afforestation**

Re-afforestation can be increased amidst efficient work management practices. For people's participation in the reforestation work to rise, certified regulatory agencies should enforce environmental laws to ensure people's participation in afforestation practices to help improve the well-being of environment (Flanagan and Norman 2003). Achieving project success helps to increase the organizational input, enhance profitability and also enable firms achieve goals and objectives. Deforestation result to environmental deficiency such as global warming and other related effects (Kululanga and Kuotcha, 2010).

Reforestation is defined as the process of replanting logged trees with the aim of recovering loss trees. Reforestation can be undertaken in several ways such as planting trees that are of fast-growing exotic species promotes real forest type. Replanting trees after they have been cut down is termed as afforestation. This is expedient even as the environment is protected against depletion to help maintain the natural forest (Mansourian et al., 2014). Reforestation can only be

successful after it has been critically examined at the initial stage (Larson and Petkova, 2011). Moreover, reforestation is an initiation that is undertaken to make sure that trees that are cut down are replaced with new ones. Environmental protection is very significant for improving the standard of living among people thus promoting the country's socioeconomic programs (Phelps, 2007). The forest significantly sum up the revenue which the government achieves. Hence, to maintain a present forest reserve the forestry commission should be effectual with their duties to avoid illegal logging of trees.

Prior to the significance of the forest to economic growth and development, policy makers should formulate policies to govern the forest reserve against all illegal activities with relates to tree logging (Mansourian *et al.*, 2014). Reforestation is a strategic approach that can be used to achieve food security, wood, control of erosion and water flow management (Mansourian *et al.*, 2014). The main objective for reforestation is towards socio-economic benefits, environmental safety and wildlife conservation (Mansourian *et al.*, 2014).

As asserted by CIFOR Rehab Team (2003), reforestation is an activity undertaken to preserve the natural forest is sustained to achieve food security, enhance productivity, increase standard of living and ensure environmental well-being. By practicing afforestation, the forest reserve can be preserved, increase timbers in forest reserve, protecting wildlife as well as conserving biodiversity. More so, afforestation increases community income, enhances standard of living and also creates job avenues for the unemployed (Pollitt, 2007).

The inputs of work efficiency may be influenced by cost, time, quality and other regulating elements (Mohammed, 2002). To achieve effectiveness as well as efficiency, managers must deploy effective measures and processes to certain that project plans are followed to achieve desirable outcome thus achieve sustainability and quality. In Kenya for instance, project efficiency was achieved using cost, quality and customer satisfaction (Nyikal, 2011).

### **2.3 RE-AFFORESTATION IN GHANA**

Approximately, Africa is having twice the world's average rate of deforestation (of more than 4 million hectares of forest every year). Study reported that Ghana for instance had lost about 23% of 715500 ha of its original forest reserves as an impact of human activities like illegal mining, logging operations, shifting cultivation and among others (Appiah et al, 2009; FRA, 2010; Pereira et al, 2010; Cardinale et al, 2012; Avtar et al, 2013). This also is similar in the other parts of the world (Appiah et al, 2010; FRA, 2010; Cardinale et al, 2012). This contributes about 6-17% of the overall anthropogenic CO<sub>2</sub> emissions to the global atmosphere (IPCC 2007; Gibbs et al. 2007; Avtar et al, 2011; Baccini et al, 2012). Without any controversies, deforestation had been one of the major causes of climate change and biodiversity loss overlap (Siikamäki and Newbold 2012) and besides a factor contributing to global disturbances today (Siikamäki and Newbold, 2012; Gebara, 2013).

By the effort of the international community's determination, several strategies have been taken to help make sure that these challenges are averted to help increase global safety and ecological protection. The two main bodies recruited with these responsibilities included the Convention for Biological Diversity (CBD) and the United Nations Framework Convention for Climate Change (UNFCCC) at the 1992 Earth Summit in Rio de Janeiro (Siikamäki and Newbold, 2012).

Based on this agreement, several ecological effects are gradually reducing for instance Reducing Emissions from Deforestation and Degradation plus” (REDD+) projects involving afforestation/reforestation (AR) and agroforestry (AF) activities (Brown et al, 2008; Cerbu et al, 2009; Venter and Koh, 2012; Patel et al, 2013). Specifically, afforestation initiations have been taken such the establishment of cover vegetation and other related plantations. Also, there has been a blend of agricultural practices and forestry practices low level cover forests to generate new atmosphere (Murdiyarso and Adiningsih, 2007; Murdiyarso et al, 2010). These strategies nonetheless help to improve forest quality, avert climate changes (Dutschke and Wolf, 2007; Mbow et al, 2012; Angelsen et al, 2012) and also improving forest governance, poverty aversion and equity for local communities (Brown et al, 2008; Patel et al, 2013).

Despite the various actions taken by several agencies on afforestation, Ghana still experiences deforestation which is degrading the level of its quality forest reserves. As an of national concern, the World Bank, the Africa Development bank and other bilateral aid agencies have undertaken further assessment on how the country can mitigate forest destruction to achieve forest safety thus averting the challenges in many countries (Olbrei and Howes, 2012).

Several AR programmes has been taken to help increase the awareness of the significance of afforestation in the development of both socioeconomic and community development, particularly in the forest zones (Butchart et al, 2010; Angelsen et al, 2014). More so, Ozinga (2012) and Mbow et al (2012) indicated that sometimes the REDD+ related AR initiatives have caused conflicts among local people. Some AR and AF activities like the REDD+ have generated



many conflicts such as land grabs, evictions and forest access restrictions (Larson and Petkova, 2011; Phelp et al, 2010; Lawlor et al, 2013).

Therefore, several factors account in absence by AR and AF activities. Several studies have shown that in terms of forest management, most community peoples are neglected to partake in the decision making process with relating to forest governance (Mansourian et al, 2014). Poor participatory had been a major challenge affecting forest protection (Dooley et al, 2008; Gebara, 2013). Several studies have not considered local peoples' participation in forest governance (Angelsen et al, 2009; Knox et al, 2011; Yasmi et al, 2012).

Local people play a significant role in forest protection yet they are being ignored in the course of making decisions towards forest governance (e.g. Gebara, 2013). It is appropriate in relation to the concentration on local peoples' participation in forest management (Gebara, 2013). This nonetheless must be considered among the important factors in forestry projects and other international development projects. By achieving this, countries would be able to effectively manage their forest reserves in the localities which would help facilitate decision making process and also enhance forest protection projects (FAO, 2011; Larson and Petkova, 2011).

Local peoples' participation in forest governance would help contribute significantly to development and sustainable resource management (Collier, 2007; Dhiaulhaq et al, 2014). This has become very essential in the study field because it is expected that, local peoples' participation in forest management would help enhance forest preservation by traditional rights and beliefs related to forest nature (Arevalo et al. 2014). Again, studies have established that local peoples' participation in the forest governance would help facilitate decision makings associated

with forest preservation since local people are always entitled with traditional beliefs and values for nature ,the implementation of forest governance using AR, AF and other REDD+ activities would help facilitate afforestation activities and also help increase forest governance and sustainability (FAO, 2011; Larson and Petkova, 2011)..

Forestry authorities should identify measures that can be used to engage local people in the protection of the natural forest so that the natural quality of the forest can be maintain to avoid depletion of the ecology. By allowing the local people to take active part in the forest management practices, the forest commission should take active supervision on forest reserve and also make sure that depleted forests are recovered by replacing lost seedlings with fast-growing exotic ones (FAO, 2011; Larson and Petkova, 2011)..

However, studies have shown that there are no standardized systems concerning good forest management and mechanisms to examine the effectiveness of forest management practices (Counsell, 2009; Larson and Petkova, 2011). Other studies showed that, forest management effectiveness is determined by the level of local authorities' participation in forest management projects (FAO, 2011; Larson and Petkova, 2011). This purposely includes local peoples' involvement in the decision making by forest management projects as well as how project activities are scheduled and managed.

## **2.4 LOCAL PARTICIPATION AND SUSTAINABLE PROJECT IMPLEMENTING**

Acceptable achievement can be maintain through pre-project implementation and consultancy are very essential enabling the project initiator comprehend the technicality aspect of the project. Also, engaging in participatory assessment helps the participants to know the exact practices needed to undertake to achieve project goals and objectives thus informing participants on the

suitable forestry management interventions. However, the most challenge affecting local peoples' participation in forest projects as by Watson et al (2013) is the lack of technical knowledge and poor equipments and tools. Prior to forest management practices, local communities play a significant role ensuring the safety and well-being of the forest reserve. Traditionally, community leaders played a major role in protecting the community's forest reserved.

For the past decades until recent depletion of the forest reserves in the country, traditional rulers cautioned the community towards the forest reserves and in that case the local people were bound by cultural values and beliefs with regard to the natural forest. Local people were made to believe that the forest was a home to the gods and some supernatural beings and therefore people were more careful with how they dealt with the forest reserve. Participation by the people in protecting the natural environment was very high and due to that many forest reserves were protected until recent deforestation activities in the natural forest (Kiptot and Franzel, 2011).

Local people toady must be educated and engaged into forest project to make sure that the depletion of forest reserves today is reduced to achieve ecological safety and growth (Kiptot and Franzel, 2011). Mobilizing local communities towards forest project would help forest recovering by means of training of handicrafts and potentials thus increasing community wealth. Agriculture, being one of the labour force capabilities causes forest depletion. Many agricultural farmers are owned by small holder farmers. Small holder farmers' priority is to provide food for an entire household to survive their families. Due to the low technical knowledge by these farmers, AR or AF activities are needed to help improve farmers'

knowledge on agricultural practices so that forest reserves that are located at the farming area can be well preserved to avoid forest depletion (Linguist et al, 2012). Forest depletion nonetheless had been one of the major factors that lead to global climate changes. Integration of better systems on forest management would help avert some of these challenges and also would create diversification among the local people (Ramabodu and Verster, 2010). Significantly, Ghana needs to deploy effective systems to help increase forest management to enhance agricultural activities and improve food productivity.

Also, there should be allocation of responsibilities and benefits of different stakeholders. To achieve effective forest management, authorities should divide responsibilities and duties to make sure that participant in the forest management practice comprehend their roles and obligations to improve skills and abilities (e.g. Behr et al, 2012). Here, managements' plan must be detailed so that each stakeholder can utilize timber products upon generating revenue. to aid the community in terms of development and growth. The Convention on Biological Diversity (CBD) (1992) explained that management should share benefits with the stakeholders, particularly the benefits generated from biodiversity resources. Further, an introduction of land use agreements (land tenure security). Land tenure security here defines the processes used by people in dealing with the land and its natural elements like trees, soil, waters and among others (Bassey 2003).

The absence of land tenure security had been identified as one of the factors leading to less participation by local people in the conserving of the local forest resources (Agrawal, 2007; Agrawal et al, 2008; Adhikari, 2009; Jagger et al, 2014). Whereas secured land tenure leads to long term profitability, unsecured tenure does (Sandbrook et al, 2010; Barbier and Tesfaw,

2012; Arevalo et al, 2014). Basing on this, it is important that forest authorities pay attention to the security in land tenure to help maintain good governance in the forest management. Disregard to security land tenure however would result to many conflicts which might result to high levels of deforestation and as a result affecting the well-being of the community as well as over-exploiting the forest resources (Bassey, 2003; Agbosu et al, 2007). However, the several initiation taken seem to not been effective as a resulting causing local people withdraw from partaking in forest (Ozinga, 2012). To achieve effectiveness within the land tenure system there is the need for management of conflict and disincentives within the system to make sure that local people are encouraged to partake actively in the forest project (Mansourian et al., 2014).

There should be high level of participation by the local people while impacting adequate ideas and handiworks on them upon improving their participation in the forest project. In achieving sustainability in the system, management needs to make sure that participants are equipped with knowledge and skills do that activities can be improved to achieve desirable outcomes (Kiptot and Franzel, 2011). Providing incentives is one of the significant approaches for achieving project performance. It can be observed that, projects that have the needed incentives are able to generate higher income which helps to decrease poverty in the community thus raising the standard of living among the people (Colfer 2005).

In undertaken forest project, authorities should supply required incentives to help in the activities, such tools for cutting and replanting materials to ensure adequate flow of goods and services. Maintaining biodiversity within land use also forms part of the essential element for achieving stability of biophysical systems and protection of biological diversity (Butchart et al.

2010). In this case, AR/AF activities including ensuring higher participation by the people to enhance the standard of living among the people while promoting flow of products from the forest ecosystem hence were supporting livelihoods of local people.

## **2.5 THEORETICAL FRAMEWORK**

The study deployed stakeholder and theories to support the concept. The Participatory Development concept was adopted in the 1950s after the days of independency of most countries. More than 60 countries in Africa accepted the results , Asia and Latin America (Morrissey, 2007). Because of this study, the Participatory Development concept was emphasized. Theories were deployed to help examine the concept as it led to emergence of community-based forms of development.

### **2.5.1 Stakeholders Theory**

The stakeholder theory is a theory that explains the relationship between firms and their existing environment (Oakley, 2011). The theory emphasizes on managements' main objectives in the business operation as well as the responsibilities they are tasked with. As stated by the theory, managers are responsible and accountable to the stakeholders and their main objective is to maximize shareholders' profits (Miller and Hobbs, 2005). Stakeholders are also input factors since they are the real owners of the business and therefore ensure that resources are utilized to serve organizational needs either than serving individual's personal interests (Kululanga and Kuotcha, 2010).

The main objective of the stakeholder theory is to help broaden managers' perspective and understanding of stakeholders upon acquiring the required knowledge and skills to manage the

stakeholders (Patton, 2008). Stakeholder's involvement in business activities is very crucial to business efficiency as well as success (McManus, 2004). The stakeholder theory specifically examines the relationship between managers and their business owners (Oakley, 2011). Managers must observe that the success of business depends on the level of participation by the various stakeholders. In this case the capital plan firm is very important and it is expedient for managers upon deploying measures and strategies help encourage the flow of capital in the institution upon enhancing project efficiency.

### **2.5.2 Theory of Reasoned Action**

The theory of reasoned action (TRA) originally was developed in the 1967 and it was formed based on the behavioral pattern of individual. The theory was broaden by Ajzen and Fishbein in the early 1970`s which became a popular theory to study human behavior and also formulating appropriate interventions with relate to human actions. The theory points that, human act based on their intentions and they also make decisions based on the acquired information which compels them to act in a certain way (Yulia, 2005). The theory posits that, the more a person is willing to partake in a particular activity, the more successful the individual becomes. Individual intentions are the beliefs or information that is contained in a person to make the individual act towards the particular project or activity. Attitude is one of the significant antecedents of individuals' behavioral intentions (Young, 2006). Positive attitude towards certain activities drives the individual to partake in that particular activity and vice versa. In terms of application, the theory can help in the comprehension of community involvement in that it will help explain the intent of peoples' behaviour towards certain activities. For example if a person views community participation as a positive thing, then the individual would be willing to engage community projects.

## **2.6 EMPIRICAL REVIEW**

Bouthavong, Hyakumura and Ehara (2017) explored the forms of stakeholder participation in the implementation of three pilot projects in Laos, with a focus on who actually makes decisions on project activities. The study found that stakeholder roles in making decisions were imbalanced. The central government and development partner organizations were the ones who actually fulfill the roles of decision-makers in most project activities. Although local communities were not the key stakeholders in decision making in most activities, their roles seem to have increased in the activities where participatory approaches were applied. Participation of the private sector, non-governmental organizations, academic and research institutes and mass organizations was limited. Opportunities to reach decision-makers regarding project activities came through service contract agreements. Our findings suggest that an understanding of who fulfills the key roles will support a decentralization of decision making by balancing power and redistributing the roles from dominant to weaker stakeholders. In addition, the private sector's participation may enhance opportunities to harmonize their investments for supporting REDD+ development and reduce the negative impacts on the forests and the environment.

Atiibo (2012) on the other hand examined stakeholder management challenges and their impact on project management in the case of advocacy and empowerment in the upper east region of Ghana. The study found that the interests and roles of the key stakeholders were very critical to the operations, however stakeholder management was found to be characterized by casual and ad-hoc actions and predominantly not institutionalized. Challenges like unhealthy competition, conflicting interests, poor commitment, limited interest, understanding and appreciation, anti-



stakeholder leadership problems, entrenched positions, beliefs and practices were found to impact severely on the work of the organizations. Menoka, (2014) carried out a study on stakeholder Involvement and sustainability-related project efficiency. The study focused on stakeholder Involvement with the aim to improve the construction project competence through achieving construction sustainability.

O'Halloran, (2014) investigated the awareness of stakeholder management amongst project managers in the construction industry in Ireland. The outcome of the primary research showed project managers in the Irish construction industry considered the vast majority of stakeholder analysis and Involvement methods as effective. The particular method adopted is often dependent on the characteristics of the project and stakeholders. The results suggest construction project managers in Ireland are rated highly upon undertake stakeholder management processes in accordance with a standardized methodology. In addition, the respondents strongly advocate the use of a project stakeholder register and the central role of stakeholder management in delivering successful projects.

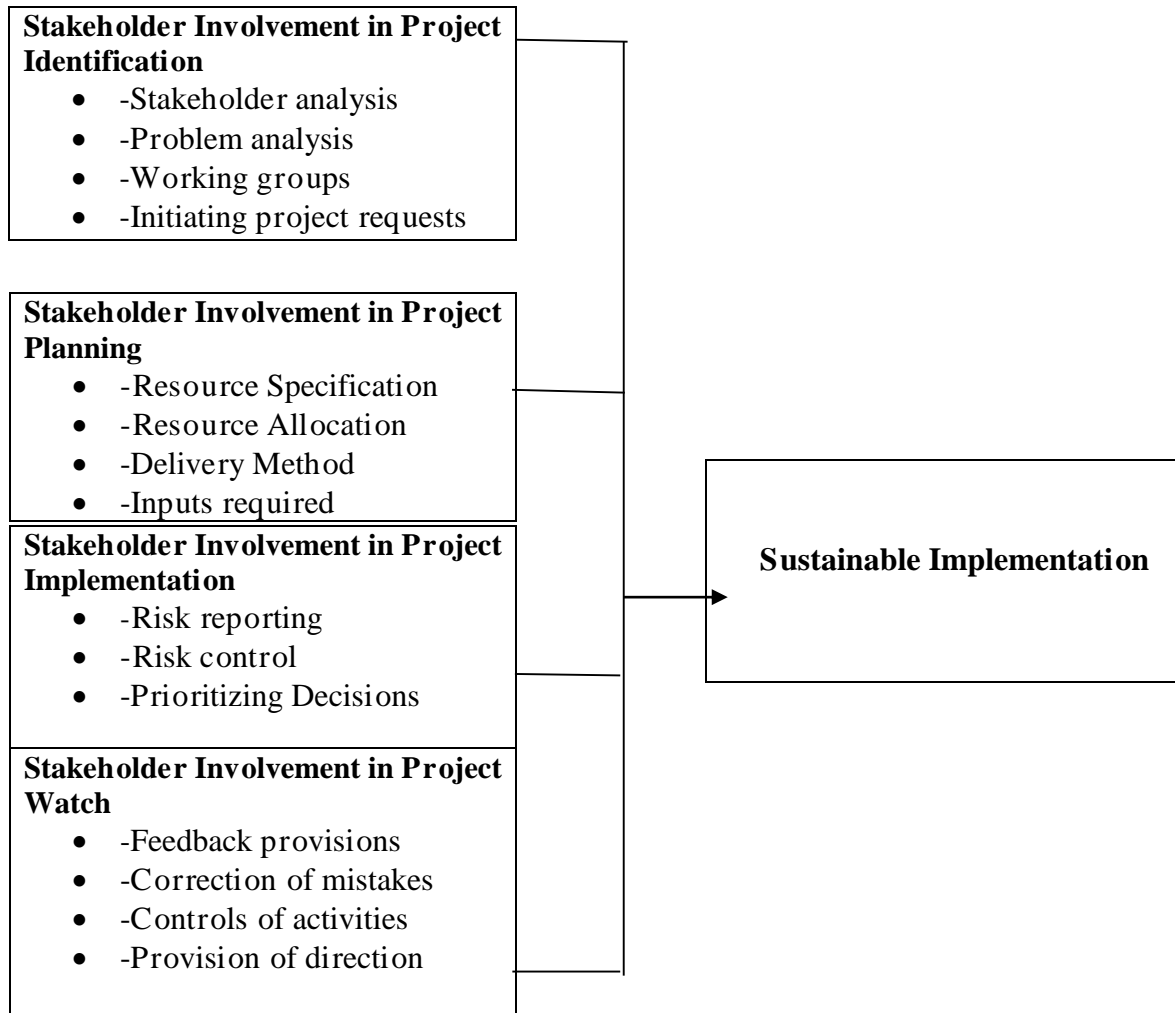
Stakeholders are personnels or organizations that are directly involve into a particular project whose interest is normally determined by the project managers. Stakeholders indirectly control the activities that are involved in a particular contract or project since they are the main owners of that exact project. Through communication systems, stakeholders communicate with managers to make sure that their interest is protected. Per the stakeholder theory, managers are responsible and accountable to the stakeholders in terms of interest fulfilment (Carol, Cohen, and Palmer, 2004).

In undertaking the project both participants and management need to make sure that appropriate mechanisms are laid down to ensure consistency and effectiveness hence comprehending the nature and scope of the project to put appropriate measures in place to maintain sanity in the environment (Nijkamp *et al.*, 2002). Albert (2004) asserted that, these processes must be taken in in respect to dealing with conflicts or problem, Analyzing the needs/requirements in measurable goals, Reviewing of the current operations, Financial analysis of the costs and benefits including a budget , Stakeholder analysis, including users, and support personnel project, Project charter including costs, tasks, deliverables, and schedule.

Avtar, Sawada and Kumar (2013) examined the effectiveness individuals' participation in organizations' project. The study indicated that, stakeholder's participation is a core part upon achieving project rendition. The study indicated that communication was very essential in achieving flexibility in terms of data sharing and project success (Fudge, and Wolfe, 2008). Stakeholders must be well equipped with knowledge and skills so that they can actively undertake their assignment to raise project efficiency (Atiibo, 2012). Strategic measures must also be formulated to help maximize effort of the stakeholders to positively influence their actions hence deploying risk management practices to avert any risk that might affect the success of the project (Malunga and Banda, 2004).

## 2.7 CONCEPTUAL FRAMEWORK

**Figure 2.1 conceptualizing a sustainable stakeholder's involvement in re-afforestation projects**



An ideal structure synthesizes the researcher's literature on how to explain a phenomenon. In view of the present study the focus is on sustainable stakeholder's involvement in re-afforestation projects implementation. It maps out the actions required in the course of the study given his previous knowledge of other researchers' point of view and his observations on the subject of research. The ideal structure links the self sufficient variation to self insufficient variable to

revealed the link between stakeholder involvement and Project implementation success. The independent variables in the study ideal structure are scheme identification, design planning, project planning, project implementation and scheme cover while project implementation success is the dependent variable.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

This section of the study presents the methods and strategies used to examine the state by stakeholders involvement with regards to their participation in re-afforestation programs by the Forestry Commission in the Ashanti region and assess its contribution towards project sustainability. The following methods and techniques were specifically used: Notably; research design research approach, study population, sample size and sampling technique, data collection, data analysis, validity and reliability, ethical considerations as well as profile of the Ashanti region.

#### **3.2 RESEARCH DESIGN**

As asserted by Creswell (2003) research design defines the overall approach and plans employ to achieve research objectives. On the basis of research purposive there are three type; namely; exploratory design, descriptive design and explanatory design. The present study employed all the three design based on the purpose. The exploratory design explores and clarifies the variables in the study but cannot draw any conclusions. The descriptive design is used to describe and elaborate on the variables used in the study whiles the explanatory is used to determine the causes and effects relationships among the variables. All the three notably designs were used to examine the nature of stakeholder involvement in the implementation of re-afforestation projects of the Forestry Commission in the Ashanti region and assess its contribution towards project sustainability because they complement each other by off-setting the weaknesses of another.

### **3.3 RESEARCH APPROACH**

Creswell (2005) asserted that research was grouped into three main categories. These include: quantitative, qualitative and mixed method designs. In the present study mixed research approach was used – complying of quantitative and qualitative. The quantitative aspect deal with the use of statistical analysis and programmed questionnaires while qualitative deals with non statistical analysis and the use of interviews. The mixed method approach was used to examine the nature of stakeholder involvement in the implementation of re-afforestation projects of the Forestry Commission in the Ashanti region and assess its concern towards project sustainability since they complement each other.

### **3.4 POPULATION OF THE STUDY**

Population refers to the areas that were utilized to extract a sample for a study. The study's population comprised a large inhabitants with common features that have been selected based on the requirement of the study's objectives and was willing to participate in giving responses on questions provided by the researcher (Saunders et al., 2009). The study focuses on examining the nature by stakeholders involvement with regards to the implementation of re-afforestation projects of the Forestry Commission in the Ashanti region and assess its efforts towards project sustainability. However, the focused people have been left priceless due to data limitations, however, has been reserved upon supplementary enquiry in the course of this work.

#### **3.4.1 Sample size and sampling technique**

The process by which part of a given number of inhabitants represents an entire inhabitants by making inferences based on the sample is termed sample size. Two hundred (200) participants were selected for the study. The present study uses probability and non probability sampling

approaches. Specifically, both random sampling and purposive sampling techniques in obtaining the sampled respondents among all the resident of the project communities. The simple random is used to select participants based on quantitative aspect of the study while the purposive sampling technique is used to select experts and technical know-how individuals for the key informant interviews. The condition will be that, the person in question should be a stakeholder who has been eligible to the re-afforestation projects in Ashanti region within the period of 2014 till the time of this study.

### **3.5 DATA COLLECTION METHOD**

The accumulation of data was made possible by primary and secondary fields. A well planned questionnaires and interview were evolved and sent on the field to be administered to by respondents and hence primary data was sourced from the questionnaires whilst secondary data were derived from published papers, Ghana Statistical Services and the local assembly who examined the nature of stakeholder involvement in the implementation of re-afforestation projects of the Forestry Commission in the Ashanti region and assess its efforts towards project sustainability.

#### **3.5.1 Data collection instrument (Questionnaires and Interviews)**

The main tools chosen were programmed questionnaires and interviews since they complement each other. A total number of two hundred (200) questionnaires were sent out of which one hundred and fifty (150) were answered correctly and fifty (50) were wrongly answered. Questionnaires have the tendency to reach a larger scope in a short period (Yin, 2005). On interviews has the tendency to obtain real data upon the key informants. However, interviews consumed more time unlike the questionnaires that is less time consumable. Both instruments

were chosen to address the objectives below: To find out the nature of stakeholders' involvement in the implementation of re-afforestation projects in the Ashanti region; to explore the determinants of stakeholder participation in the implementation of the re-afforestation projects in Ashanti region; to explore the effects of stakeholders' involvement on the success and sustainability of re-afforestation projects in Ashanti region; to suggest a possible framework towards ensuring that there is sustainable stakeholder involvement in the re-afforestation projects.

### **3.6 DATA ANALYSES**

The core integral part of the research was when data was collected. The research could only function as a valid research based on the field data collected. The information gathered from the field was first edited, grouped as well as arranged into correct templates, however, a deduction of qualitative analysis. The Statistical Package for Social Sciences (SPSS) version 23 and Ms. Excel were employed the various data processes and hence data entered into the software was transformed into diagrams and charts. A deducible and descriptive statistics analysis were performed in this study. The NVivo 12 analytical tool shall be employed in analyzing the quantitative data. From this, a content analysis will then be done to draw appropriate responses in line with the research objectives.

### **3.7 VALIDITY AND RELIABILITY OF THE DATA COLLECTION INSTRUMENT**

The validity as well as the reliability in the data was achieved using a data collection too. The instrument chosen to gather data corrected margin mistakes and various repetitions followed by questionnaires distribution among respondents. Content and face validity was achieved in this stage of the study. Reliability in data collection simply means ensuring consistency in the data



collected. Ideas and perception in relation to reaction towards the questions before the main data amass instrument was tested by pretesting to arrive upon validity. The researcher developed questions from published journals for questionnaires and therefore ensured validity amongst the questions with regards to solve mistakes. The questions which need to be edited and deleted were worked on through pretesting respondent's responses.

### **3.8 ETHICAL CONSIDERATIONS OF THE STUDY**

The ethical standards of every research study considered respondents consent, anonymity confidentiality, adequately as well as making references to the authors cited in the study. The researcher first got to know from respondents if they wanted to partake in the study or not before giving them the questionnaires to prevent intimidations and harassment. The researcher ensured confidentiality among respondents and hence was able to give more data with respect to the respondents since they were willing to give much details on the set questions to be valid. Participants were protected from being traced after the questionnaires had been taken from them as results anonymity was ensured.

## CHAPTER FOUR

### DATA ANALYSES AND DISCUSSIONS

#### 4.0 INTRODUCTION

The outcome of results as well as discussions of the work, which is to examine the nature of stakeholder involvement in the implementation of re-afforestation projects of the Forestry Commission in the Ashanti region. The following analyses have been conducted: Regression, Relationship, mean, standard deviation and cross – tabulations.

#### 4.1 THE DEMOGRAPHIC CHARACTERISTICS

**Table 4.1: Age Distribution of Respondents**

Gender	Age			Total
	Below 30 years	30-45 years	45-60 years	
Male	64	87	0	151
Female	0	17	32	49
Total	64	104	32	200

**Source: field Survey, 2019**

Table 4.1 above shows that, majority (64) of the respondents were males aged below 30 years while there were no females (0) aged below 30 years. Also, under the ages of 30-45 years, majority (87) of the respondents was males and the least (17) were females. Nonetheless, the females (32) aged between 45-60 years while there were no males (0) who were in that age group. This implies that females were older than males.

**Table 4.2: Educational level**

Gender	Educational level			Total
	Diploma	Bachelor degree	Mater degree	
Male	18	81	52	151
Female	0	32	17	49
Total	18	113	69	200

**Source: field data, 2019**

As showed in the Table 4.2 in terms of educational level, majority (18) of the males held a diploma degree while the females did not have a diploma degree. Also, majority (81) of the males has had their bachelor's degree and the least (32) of the females has also had their bachelors' degree. In relation to master degree, majority (52) of males had acquired their master's certificate while the least (17) were also females who have achieved their masters' degree. This simply implies that males were more educated than the females.

**Table 4.3: Household head**

Gender	Household head		Total
	Yes	No	
Male	52	99	151
Female	34	15	49
Total	86	114	200

**Source: Field Data, 2019**

Table 4.3 displays household head table, majority (52) of the males indicated that they were the head of their households and the least (34) of the females also said they were in charge of their homes. Also, majority (99) of the males said they were not in charge of their household and the

least (15) of the females also said they were not the head of their households. This implies that, males were more responsible than females.

**Table 4.4: Years of living in the Community**

Gender	Years of living in the community				Total
	0-10 years	11-20 years	21-30 years	Above 30 years	
Male	17	17	35	82	151
Female	0	15	0	34	49
Total	17	32	35	116	200

**Source: Field Data**

The table 4.4 above shows that, most (17) males had lived in their communities for 0-10 years while no females (0) have ever lived for even 0-10 years. Also, majority (17) of males had lived for 11-20 years and the least (15) of the females had also lived for same period. Further, study revealed that majority (35) of the males had lived in their communities for 21-30 years and there was no female (0) that had lived for that period. Again, majority (82) of males indicated that they have lived in their communities for more than 30 years and the least (34) of the females had also lived in their community for more than 30 years. This implies that males had stayed in their communities longer than the females.

**Table 4.5: Dependency Ratio**

Gender	Dependency Ratio			Total
	7-10	4-6	Above 10	
Male	32	86	33	151
Female	0	0	49	49
Total	32	86	82	200

**Source: Field Data, 2019**

The illustration on table 4.5 regards to household dependency, majority (32) of the males showed that 7-10 people depended on them in their households while the females had no persons (0) depending on them. Also, majority (86) of the males indicated that 4-6 people depended on them while the females had no individuals depending on them. Again, majority (49) of the females indicated that they had more than 10 people depending on them in their households and the least (33) of the males also said they had more than 10 people depending on them in their households. This implies that males perform more responsibilities in their households more than females.

**Table 4.6: Primary Occupation**

Gender	Primary Occupation					Total
	Crop farming	Tree planting	Poultry farming	Day laborer	Lake fishing	
Male	49	18	18	0	66	151
Female	17	0	0	32	0	49
Total	66	18	18	32	66	200

**Source: Field Data, 2019**

Table 4.6 presents respondents main occupation, majority (49) of the males indicated that they were crop farmers and the least (17) of the females also said they were engaged into crop farming. Also, under tree planting, majority (18) of the males were engaged into the tree planting while there were no females that were engaged into the tree planting activity. Again, majority (18) of the males indicated that they were engaged into poultry farming and none of the females (0) were involved in the poultry farming. Further, none of the males (0) were day laborers but with females, most (32) of them were day laborers. Finally, majority (66) of the males were into lake fishing while none of the females were into lake fishing. This implies that males were physically stronger than females since most of the males were involved in physically active occupational jobs.

**Table 4.7: Employment Status**

Gender	Employment Status			Total
	Paid employee	Self-employed	Unpaid family worker	
Male	15	70	66	151
Female	32	17	0	49
Total	47	87	66	200

**Source: Field Data, 2019**

In relation to employment status in table 4.7 above the mass (32) occupied by females are paid employee and the least (15) of the males also indicated that they were paid employees. Also, majority (70) of the males were self-employed and the least (17) of the females also indicated they were self-employed. Again, majority (66) of the males indicated that they were unpaid family workers while there were none females that worked as unpaid worker.

**Table 4.8: Other source(s) of income**

Gender	Other source(s) of income		Total
	Yes	No	
Male	34	117	151
Female	49	0	49
Total	83	117	200

**Source: Field Data, 2019**

Table 4.8 with regards to other source of income, majority (34) of the males said they did have alternative fields of income and the females (49) said they did have an alternative source. Also, majority (117) of males said they did not have alternative sources of income while none of the

female had alternative source of income. This implies that the males had higher economic status than the females.

**Table 4.9: Times family are fed**

Gender	Times family are fed			Total
	Ones	Twice	Thrice	
Male	52	64	35	151
Female	17	0	32	49
Total	69	64	67	200

**Source: Field Data, 2019**

Table 4.8 above is in relation to daily food, majority (52) of the males indicated that their family fed on food ones and the least (17) of the females also said ones. Also, majority (64) of the males indicated that their family fed on food twice while none of the females had their family fed on food. Last, most (35) of the males indicated that their family fed on food thrice and the rest (32) of the females also said their family fed on food thrice in a day. This implies that males fed their families more than the females.

**Table 4.10: Average Monthly Income**

Gender	Average monthly Income		Total
	Gh¢301 – Gh¢ 500	Gh¢500 and above	
Male	30	121	151
Female	15	34	49
Total	45	155	200

**Source: Field Data, 2019**

With regards to income from primary occupation, majority (30) of the males indicated that they received between Gh¢ 301 – Gh¢ 500 and the least (15) of the females also said they received

similar income. Also, majority (121) of the males indicated that they received more than Gh¢ 500 from their primary occupation and the least (34) of the females also said they receive same amount from their primary occupation. This implies that the males received regular income than the females.

**Table 4.11: Secondary Occupation**

Gender	Secondary Occupation		Total
	Yes	No	
Male	52	99	151
Female	49	0	49
Total	101	99	200

*Source: Field Data, 2019*

As showed in the Table 4.11 in relation to secondary occupation, majority (52) of the males said they had a secondary job and the least (49) of the females also said they did have a secondary job. Again, majority (99) of the males said they did not have secondary occupation while there were females that did not have secondary job. This implies that males were more job secured than the females.

**Table 4.12: Years of engaging in Primary Occupation**

Gender	Years of engaging in Primary Occupation			Total
	Below 10 years	10-15 years	16-20 years	
Male	119	15	17	151
Female	32	17	0	49
Total	151	32	17	200

*Source: Field Data, 2019*

In relation to engagement in main occupation, majority (119) of the males indicated that they have been engaged in their main occupation below 10 years and the least (32) of the females also said below 10 years. Also, majority (17) of the females indicated that they have engaged in their



primary occupation for 10-15 years and the males (15) also said 10-15 years. More so, majority (17) of the males indicated that they have been in their primary occupation for 16-20 years and none of the females (0) have ever been in their main occupation.

#### **4.3 STAKEHOLDERS INVOLVEMENT**

The part of this area of the study describes the analyses of stakeholders involvement by making use of mean and standard deviation. Where a mean of 5 – implies that the respondent strongly agree to the item, a mean of 4 means the respondents agree to the items, a mean of 3 means the respondents somewhat agree with the item, a mean of 2 implies that respondents disagree with the item and a mean of 1 implies that the respondent strongly agree to the item.

**Table 4.13: Stakeholders Involvement**

<b>Statement</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Std. D</b>
<b>Stakeholders Involvement in Design/Planning</b>				
Stakeholder was involved in the preliminary assessment of the re-afforestation projects of the Forestry Commission	1.00	5.00	3.26	1.28
There was documentation of the re-afforestation projects of the Forestry Commission which called for the involvement of all stakeholders	2.00	4.00	3.67	0.74
I was directly or indirectly involved in the budgetary process	2.00	5.00	3.99	1.08
The indicators set were approved by all stakeholders since they were of interest to the stakeholders.	1.00	5.00	3.18	1.26
Before ground work began there was approval of the entire project design and planning process	1.00	5.00	3.56	1.53
<b>Stakeholders Involvement in Implementation</b>				
I am part of the supervision process either directly or indirectly.	1.00	5.00	3.37	1.44
I am part of the control process either directly or indirectly.	2.00	5.00	4.15	1.09
I am informed of the project coordination process	1.00	5.00	3.73	1.10
The project organization process was an effort of all the key stakeholders	1.00	5.00	3.65	1.05
<b>Stakeholders in Monitoring and Evaluation</b>				
I was oriented on the procurement evaluation indicators	4.00	5.00	4.33	0.47
I was regularly given feedback on the re-afforestation projects of the Forestry Commission	2.00	4.00	3.32	0.62
Assessment of Efficiency is a teamwork exercise involving all key stakeholders either directly or indirectly	3.00	5.00	3.75	0.73
Assessment of the procurement scheme is a teamwork exercise involving all key stakeholders either directly or indirectly	3.00	5.00	3.59	0.64
I was involved in the formulation of procurement evaluation indicators	3.00	5.00	3.83	0.56

**Source: Field Data, 2019**

Table 4.13 sums up the mean scores of all items which starts from 3.1 to 4.3. Focusing on the standard deviation measurement, all the items were less than 1 indicating that there is no much difference in the outcomes achieved from the respondents dealings with stakeholders involvement. The mass of the feedback from the respondents concurred that the planning process of their institution is greatly influenced by stakeholders. For demonstration purpose, those with score of 3.9 concurred to the item “I was directly or indirectly involved in the budgetary process”. The outcome of a mean score of 3.6 revealed that, respondents concurred to the item. “There was documentation of the re-forestation projects of the Forestry Commission which called for the involvement of all stakeholders”. A display of 3.5 mean score revealed that participants were satisfied with the item. “Before ground work began there was approval of the entire project design and arrangement procedure” and a 3.2 mean score and 3.1 proved that participants agreed to the items respectively. “Stakeholder was involved in the preliminary assessment of the re-forestation projects of the Forestry Commission” and “The indicators set were approved by all stakeholders since they were of interest to the stakeholders”.

Moreover, a 4.1 mean score displayed reveals that participant agreed that they were involved in the implementation process in their organization, the item include; “I am part of the control process either directly or indirectly” while the respective mean score; 3.7, 3.6 and 3.3 revealed that participants concurred to the items “I am informed of the project coordination process”, “The project organization process was an effort of all the key stakeholders” and “I am part of the supervision process either directly or indirectly” respectively.

Furtherance, majority of the respondents agreed that they were involved in the monitoring and evaluation process of their organization. Items included; the respective mean score  $m=3.8$ ,  $SD=0.5$ ,  $m=3.7$ ,  $SD=0.7$ ,  $m=3.5$ ,  $SD=0.6$  and  $3.3$ ,  $SD=0.6$  shows that the participants agreed to

the following items respectively; “I was involved in the formulation of procurement evaluation indicators”, “Assessment of performance is a teamwork exercise involving all key stakeholders either directly or indirectly”, “Assessment of the procurement scheme is a teamwork exercise involving all key stakeholders either directly or indirectly” and “I was regularly given feedback on the re-afforestation projects of the Forestry Commission”. These results are supported empirically. For instance According to the Management Institute (2008), stakeholders refer to individual or group whose role in an organization is a key part in the success by the organization. In taking decision in an organization, stakeholders play a significant role in ensuring that managers are monitored to ensure that they serve the interest of the shareholders. Per the stakeholder theory, managers’ main mission is satisfying the shareholders or business owners in business operation (Newcombe 2003).

Again, the Management Institute (2004) ascertained that stakeholders are group or individual whose interest is managed and determined by business managers. Although, stakeholders are the real business owners but managers takes that position on behalf of the stakeholders. In this case, stakeholders are responsible for ensuring that capital is made available to the organization to help increase performance. Li et al. (2013) showed that stakeholders are individuals whose activities influence operational activity, focusing on the yields of the organization.

#### **4.4 DRIVERS OF STAKEHOLDERS PARTICIPATION IN THE IMPLEMENTATION OF THE RE-AFFORESTATION**

This section of the results analysed the drivers of Stakeholders Participation in the implementation of the re-afforestation using means and standard deviations. Where a mean of 5 – implies that the respondent strongly agree to the item, a mean of 4 means the respondents agree to the items, a mean of 3 means the respondents somewhat agree with the item, a mean of 2

implies that respondents disagree with the item and a mean of 1 implies that the respondent strongly agree to the item.

**Table 4.14: Technical/Biophysical Drivers**

<b>Statements</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Std. D</b>
Site-species matching	3.00	5.00	3.75	0.60
Tree species selection	2.00	4.00	3.15	0.69
Site preparation	2.00	4.00	3.07	0.65
Seedling production	2.00	4.00	3.16	0.70
Quality of seeds or seedlings	2.00	4.00	3.09	0.66
Appropriate time of planting	2.00	4.00	3.15	0.69
Technical capacity of implementers	2.00	5.00	3.43	0.96
Post-establishment Silviculture	2.00	5.00	3.34	0.86
Site quality	2.00	5.00	3.50	0.88

**Source: Field Data, 2019**

Table 4.14 showcase that, participants had somewhat agreed that the following technical\biophysical items; “Site-species matching” (m=3.7, SD=0.6), “Technical capacity of implementers” (m=3.4, SD=0.6), “Site quality”(m=3.4, SD=0.8), “Post-establishment Silviculture” (m=3.3, SD=0.8) and m=3.1, SD=0.6, m=3.1, SD=0.6, m=3.1, SD=0.6, m=3.0, SD=0.6 as well as m=3.0, SD=0.6 with items; “Appropriate time of planting”, “Seedling production”, “Tree species selection”, “Quality of seeds or seedlings” and “Site preparation” respectively were all drivers of stakeholders’ involvement in the implementation of the re-forestation.

**Table 4.15: Socio-economic Drivers**

<b>Statements</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Std. D</b>
Livelihood planning	2.00	5.00	3.68	0.96
Local participation and involvement	2.00	5.00	3.92	0.96
Socio-economic incentives	1.00	5.00	3.99	1.42
Financial and economic viability	2.00	4.00	3.32	0.62
Payments for environmental services (PES) scheme	3.00	5.00	3.75	0.73
Social equity	3.00	5.00	3.59	0.64
Corruption	3.00	5.00	3.83	0.56
Degree of dependency on traditional forest products	3.00	5.00	3.75	0.60
Marketing prospects	2.00	4.00	3.15	0.69
Knowledge of markets for timber and other forest products and services	2.00	4.00	3.07	0.65
Addressing underlying causes of forest loss and degradation	2.00	4.00	3.16	0.70

**Source: field Data, 2019**

An illustration by table 4.15 sums up the mean scores of the whole items starting from 3.0-3.9. Focusing on the standard deviation scale, an overall score for all items were less than which announces that there is no difference the feedbacks in relation with socio-economic drivers of stakeholders involvement. Respondents in somewhat agreed to the information on the table. For instance, a mean score of 3.9 indicated that participants had somewhat agreed to the item “Socio-economic incentives”. The mean score of 3.8 by respondents agreed also somewhat agreed to the item “Corruption” was a driver of stakeholders’ involvement. Respective mean scores; m=3.9, SD=1.4, m=3.7, SD=0.7, m=3.7, SD=0.6, m=3.6, SD=0.9, m=3.5, SD=0.9, m=3.3, SD=0.6, m=3.1, SD=0.6 and m=3.0, SD=0.6 revealed that participants somehow agreed to the items;

“Local participation and involvement”, “Payments for environmental services (PES) scheme”, “Degree of dependency on traditional forest products”, “Livelihood planning”, “Social equity”, Financial and economic viability”, “Addressing underlying causes of forest loss and degradation” and “Knowledge of markets for timber and other forest products and services” as drivers of stakeholder’s involvement respectively.

**Table 4.16: Institutional, Policy and Management Drivers**

<b>Statements</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Std. D</b>
Institutional arrangements	2.00	4.00	3.09	0.66
Effective governance	2.00	4.00	3.15	0.69
Forest harvesting policies and other forest policies	2.00	5.00	3.43	0.96
Tenure security	2.00	5.00	3.34	0.86
Conflict resolution mechanism	2.00	5.00	3.50	0.88
Allocation of rights and Responsibilities amongst stakeholders	2.00	5.00	3.41	0.97
A Lengthy maintenance and conservation of reforested sites	2.00	5.00	3.74	0.93
Forestry support programs	2.00	5.00	3.65	0.94
Community leadership	2.00	5.00	3.66	0.94
Risk involved	1.00	5.00	4.43	0.74

**Source: Field Data, 2019**

As observed in the Table 4.16, majority of the respondents had somewhat agreed that institutional, policy and management were drivers of stakeholders’ involvement. For instance, mean scores of; m=3.7, SD=0.9, m=3.6, SD=0.9, m=3.6, SD=0.9, m=3.4, SD=0.8, m=3.4, SD=0.9, m=3.4, SD=0.9, m=3.3, SD=0.8, m=3.1, SD=0.6 and m=3.0, SD=0.6 indicated that respondents had somewhat agreed to the following items respectively; “Long-term maintenance and protection of reforested sites”, “Forestry support programs”, “Community leadership”, “Conflict resolution mechanism”, “Distribution of rights and responsibilities amongst stakeholders”, “Forest harvesting policies and other forest policies”, “Tenure security”,

“Effective governance” and “Institutional arrangements” while the least of the respondent agreed to the items “Risk involved” ( $m=4.4$ ,  $SD=0.7$ ).

#### **4.5 SUCCESS AND SUSTAINABILITY OF RE-AFFORESTATION PROJECTS IN THE DISTRICT**

This section of the results analysed the Success and Sustainability of Re-afforestation Projects in the District using means and standard deviations. Where a mean of 5 – implies that the respondent strongly agree to the item, a mean of 4 means the respondents agree to the items, a mean of 3 means the respondents somewhat agree with the item, a mean of 2 implies that respondents disagree with the item and a mean of 1 implies that the respondent strongly agree to the item.



**Table 4.16: Success and Sustainability of Re-afforestation Projects in the Districts**

<b>Statements</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Std. D</b>
<b>Forest growth success indicators</b>				
Tree growth performance (measures by tree basal area, height, stem form)	4.00	5.00	4.42	0.49
Stand density (for age)	3.00	5.00	4.26	0.59
Area remaining intact or area maintained long-term	1.00	5.00	4.56	1.09
Actual production from timber, fuel-wood, resin, fruits, etc.	1.00	5.00	2.96	1.84
<b>Socio-economic success</b>				
Increased income	1.00	5.00	4.71	0.79
Local employment opportunities	1.00	5.00	2.99	1.78
Other livelihood opportunities	1.00	5.00	4.53	0.93
Availability of food and fibre supplies	1.00	5.00	4.33	1.27
Stability of market prices of locally produced commodities	1.00	5.00	2.85	1.83
Local empowerment and capacity building	1.00	5.00	4.71	0.78
<b>Vegetation structure</b>				
Canopy cover	1.00	5.00	3.38	1.64
Canopy height	1.00	5.00	4.68	0.74
Ground cover	1.00	5.00	4.86	0.49
Litter cover	1.00	5.00	2.53	1.74
Shrub cover	1.00	5.00	4.64	1.04
Stags (dead trees)	1.00	5.00	4.83	0.71
<b>Species diversity</b>				
Tree species richness	1.00	5.00	2.84	1.95
Presence of desired tree species	1.00	5.00	2.12	1.73
Appropriate wildlife species present	1.00	5.00	2.41	1.86
Special life forms	1.00	5.00	4.76	0.83
Weed abundance	1.00	5.00	2.43	1.75
<b>Ecosystem functions</b>				
Stable soil surface	1.00	5.00	4.38	1.34

Soil erosion	1.00	5.00	4.56	0.95
Soil fertility	1.00	5.00	4.72	0.88
Landslide frequency	1.00	5.00	2.89	1.89
Adequate quantity of surface and ground water	1.00	5.00	4.72	0.79
Water quality	1.00	5.00	2.77	1.81
Soil organic matter	1.00	5.00	4.54	0.94
Biomass productivity	1.00	5.00	4.33	1.27
Carbon sequestration	1.00	5.00	3.12	1.92

***Source: Field Data, 2019***

As illustrated in the Table 4.16, majority of the participants agreed on the indicators of forest growth success. Indicators agreed on were “Tree growth performance (measures by tree basal area, height, stem form)” (m=4.4, SD=0.4), “Stand density (for age)” (m=4.2, SD=0.5), “Area remaining intact or area maintained long-term” (m=4.5, SD=1.0) while some participants disagreed with “Actual handiwork of timber, fuel-wood, resin, fruits etc.” as indicator of forest growth success (m=2.9, SD=1.83). Furtherance, majority of the participants (m=4.7, SD=0.7) indicated “increased income” as a socio-economic success of re-afforestation, followed by “local empowerment and capacity building” (m=4.7, SD=0.7), “other livelihood opportunities” (m=4.5, SD=0.9), “availability of food and fibre supplier” (m=4.3, SD=1.2). “Local employment opportunities” and “stability of market prices of locally produced commodities” were disagreed by participant when it comes to socio-economic success of re-afforestation (m=2.9, SD=1.7), (m=2.8, SD=1.8) each.

Moreover, majority of the participants were satisfied with the success and sustainability of re-afforestation projects in the district in relation to vegetation structure. Items agreed upon included; “Stags (dead trees)” (m=4.8, SD=0.7), “Ground cover” (m=4.8, SD=0.4), “Shrub cover” (m=4.6, SD=1.0) and “Canopy height” (m=4.6, SD=0.7). On the other hand, a mean score

of 3.3 (SD=1.6) indicated that participants had somewhat agreed to the item “Canopy cover” and few of the participants disagreed to the item “Litter cover” (m=2.5, SD=1.7).

As shown in the Table 4.15 majority of the participants had disagreed that the following items; “Tree species richness” (m=2.8, SD=1.9), “Appropriate wildlife species present” (m=2.4, SD=1.8), “Weed abundance” (m=2.4, SD=1.7) and “Presence of desired tree species” (m=2.1, SD=1.7) were not forest growth success indicators while the least of the respondents agreed that the item “Special life forms” (m=4.7, SD=0.8) was an indicator of forest growth success.

The table 4.16 shows that, majority of the participants had agreed that the following items; “Soil fertility” (m=4.7, SSD=0.8), “Adequate quantity of surface and ground water” (m=4.7, SD=0.7), “Soil organic matter” (m=4.5, SD=0.9), “Soil erosion” (m=4.5, SD=0.9), “Biomass productivity” (m=4.3, SD=1.2) and “Stable soil surface” (m=4.3, SD=1.3) were indicators of ecosystem functions. Also, a mean score of 3.1 (SD=1.9) indicated that respondents had somewhat agreed to the item “Carbon sequestration” while respondents with a mean score (m=2.8, SD=1.8) and (m=2.7, SD=1.8) disagreed to the items “Landslide frequency” and “Water quality” respectively.

## 4.6 REFORESTATION PROJECT CHARACTERISTICS

**Table 4.17: Reforestation Project Characteristics**

<b>Statements</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Std. D</b>
Project goals/objectives	1.00	5.00	4.71	0.78
Project implementers	1.00	5.00	3.29	1.86
Project location or accessibility of sites	1.00	5.00	4.68	0.74
Project size	1.00	5.00	4.82	0.67
Project funding	1.00	5.00	2.12	1.74
Project life cycle	1.00	5.00	4.64	1.04

Private vs public land	1.00	5.00	4.79	0.84
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**Source: Field Data, 2019**

From the Table 4.17, the overall mean score for all items ranged from 2.1 to 4.8. From the standard deviation scale, the study found that standard deviation for all items did not exceed 1 and therefore there was no considerable variation in the responses in relation to reforestation project characteristics. Majority of the participants had agreed that the following items “Project size” (m=4.8, SD=0.6), “Private vs public land” (m=4.7, SD=0.8), “Project goals/objectives” (m=4.7, SD=0.7), “Project location or accessibility of sites” (m=4.6, SD=0.7) and “Project life cycle” (m=4.6, SD=1.0) were reforestation project characteristics while a mean score of 2.1 (SD=1.7) indicated that participants had disagreed to the item “Project funding” and respondents with a mean score (m=3.2, SD=1.8) also somewhat agreed to the item “Project implementers”.

#### 4.7 CORRELATION MATRIX

**Table 4.18: Correlation Matrix**

	Stakeholders Involvement	Technical biophysical drivers	Socio economic drivers	Institutional Policy management drivers	Success Sustainability re-afforestation
Stakeholders Involvement	1				
Technical biophysical drivers	.660** (.000)	1			
Socio economic drivers	.775** (.000)	.647** (.000)	1		
Institutional Policy management drivers	.710** (.000)	.692** (.000)	.869** (.000)	1	
Success and Sustainability re- afforestation	.841** (.000)	.759** (.000)	.867** (.000)	.942** (.000)	1

As illustrated in the Table 4.18 stakeholders involvement had a significant relationship with success and sustainability of re-afforestation ( $r=.841$ ,  $p\text{-value} < 0.05$ ). Moreover a significant ( $r=0.759$ ,  $p\text{-value} < 0.05$ ) between technical/biophysical drivers and success and sustainability of re-afforestation projects. However, a suggestive link ( $r=0.867$ ,  $p\text{-value} < 0.05$ ) was noticed between socio-economic drivers and success and sustainability of re-afforestation projects. Lastly, a relationship linking institutional, policy and management drivers and success and sustainability of re-afforestation projects ( $r=.942$ ,  $p\text{-value} < 0.05$ ).

#### 4.8 REGRESSION ANALYSIS

**Table 4.19: Goodness Fit**

Model	R	R-Square	Adjusted R Square	Error from Estimate	Durbin-Watson
<b>Model 1</b>	.802 <sup>a</sup>	.643	.637	2.63155	2.041
<b>Model 2</b>	.841 <sup>a</sup>	.707	.706	3.05483	1.040

- a. Predictors: (Constant), Institutional Policy management drivers, Technical/biophysical drivers, Socio-economic drivers
- b. Dependent Variable: Stakeholders Involvement (model 1)
- c. Predictors: (Constant), Stakeholders Involvement
- d. Dependent Variable: Success Sustainability re-afforestation (model 2)

As showed in the Table 4.19 the study outcome in model 1 states that institutional regulatory management, technical drivers and socio-economic drivers are have strong influence on stakeholder's involvement. Secondly, from the model 2 the study found that stakeholder's involvement has very strong predictive influence on sustainability of re-afforestation projects.

The study found that 70.6% variability in sustainability of re-afforestation projects are explained by stakeholder's involvement.

**Table 4.20: Analysis of Variance**

Model		Sum of Squares	df	Mean Square	F	Sig.
<b>Model 1</b>	Regression	2291.890	3	763.963	110.319	.000 <sup>b</sup>
	Residual	1274.211	184	6.925		
	Total	3566.101	187			
<b>Model 2</b>	Regression	4193.565	1	4193.565	449.374	.000 <sup>b</sup>
	Residual	1735.754	186	9.332		
	Total	5929.319	187			

a. Dependent Variable: Stakeholders Involvement

b. Predictors: (Constant), Institutional Policy management drivers, Technical biophysical drivers, Socio economic drivers

c. Dependent Variable: Success Sustainability re-afforestation

d. Predictors: (Constant), Stakeholders Involvement

As illustrated in the Table 4.20 the probability of the F – statistics are significant in both models indicating that the models are fit and can be used to gather the forecasted results.

**Table 4.21: Co-efficient of Determinants**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF

<b>1</b>	(Constant)	25.301	1.594		15.876	.000		
	Technical/biophysical drivers	.207	.048	.267	4.320	.000	.509	1.963
	Socio-economic drivers	.506	.077	.594	6.577	.000	.238	4.201
	Institutional Policy management drivers	.005	.062	.008	.088	.930	.215	4.642
<b>2</b>	(Constant)	-26.070	2.640		-9.874	.000		
	Stakeholders Involvement	1.084	.051	.841	21.198	.000	1.000	

a. Dependent Variable: Stakeholders Involvement

b. Dependent Variable: Success Sustainability re-afforestation

As indicated in the Table 4.21 In the regression model 1 the study found that, technical/biophysical drivers and socio-economic drivers were significant determinants of stakeholders involvement in re-afforestation projects (Beta = 0.207, T-value = 4.320, *p-value* < 0.05), (Beta = 0.506, T-value = 6.577, *p-value* < 0.05) respectively. However, institutional policy management drivers was not a significant determinants of stakeholders involvement in re-afforestation projects (Beta = 0.005, T-value = 0.088, *p-value* > 0.05). In model 2 the study found that, stakeholders involvement was a significant determinant of success and sustainability of re-afforestation projects (Beta = 1.084, T-value = 21.198, *p-value* < 0.05). Also, engaging in participatory assessment helps the participants to know the exact practices needed to undertake to achieve project goals and objectives thus informing participants on the suitable forestry management interventions. However, the most challenge affecting local peoples' participation in forest projects as by Watson et al (2013) is the lack of technical knowledge and poor equipments and tools. Prior to forest management practices, local communities play a significant role ensuring the safety and well-being of the forest reserve. Traditionally, community leaders played a major role in protecting the community's forest reserved.

For the past decades until recent depletion of the forest reserves in the country, traditional rulers cautioned the community towards the forest reserves and in that case the local people were bound by cultural values and beliefs with regard to the natural forest. Local people were made to believe that the forest was a home to the gods and some supernatural beings and therefore people were more careful with how they dealt with the forest reserve. Participation by the people in protecting the natural environment was very high and due to that many forest reserves were protected until recent deforestation activities in the natural forest (Kiptot and Franzel, 2011).

Local people today must be educated and engaged into forest project to make sure that the depletion of forest reserves today is reduced to achieve ecological safety and growth (Kiptot and Franzel, 2011). Mobilizing local communities towards forest project would help pay attention to recover craftiness and potentials thus increasing community wealth. Agriculture remains one of the main agents of forest depletion. Many agricultural farmers are owned by small holder farmers. The main function of these peasant farmers is to supply agricultural produce for household to survive their families. Due to the low technical knowledge by these farmers, AR or AF activities are needed to help improve farmers' knowledge on agricultural practices so that forest reserves that are located at the farming area can be well preserved to avoid forest depletion (Linguist et al, 2012). Forest depletion nonetheless had been one of the major factors that lead to global climate changes. Integration of better systems on forest management would help avert some of these challenges and also would create diversification among the local people (Ramabodu and Verster, 2010). Significantly, Ghana needs to deploy effective systems to help increase forest management to enhance agricultural activities and improve food productivity.



In addition, it is of the best interest to assign responsibilities and benefits to different stakeholders. To achieve effective forest management, certified authorities should identify responsibilities and duties to make sure that participant in the forest management practice comprehend their roles and obligations to improve skills and abilities (e.g. Behr et al, 2012). Here, managements' plan must be detailed so that each stakeholder can generate revenue through products made of timber to aid the community in terms of development and growth. The Convention on Biological Diversity (CBD) (1992) explained that management must come to terms to share benefits with the stakeholders, particularly the benefits generated from biodiversity resources. Further, an introduction of land use agreements (land tenure security). Land tenure security here defines the processes used by people in dealing with the land and its natural elements like trees, soil, waters and among others (Bassey 2003).

The absence of land tenure security had been identified as one of the factors leading to less participation by local people in the conserving of the local forest resources (Agrawal, 2007; Agrawal et al, 2008; Adhikari, 2009; Jagger et al, 2014). Whereas secured land tenure leads to long term profitability, unsecured tenure does (Sandbrook et al, 2010; Barbier and Tesfaw, 2012; Arevalo et al, 2014). Basing on this, it is important that forest authorities pay attention to the security in land tenure to help maintain good governance in the forest management. Disregard to security land tenure however would result to many conflicts which might result to high levels of deforestation and as a result affecting the well-being of the community as well as over-exploiting the forest resources (Bassey, 2003; Agbosu et al, 2007). However, the several initiation taken seem to not been effective as a resulting causing local people withdraw from partaking in forest (Ozinga, 2012). To achieve effectiveness within the land tenure system there

is the need for management of conflict and disincentives within the system to make sure that local people are encouraged to partake actively in the forest project (Mansourian et al., 2014).

In order to impact efficient ideas and craftiness, the local people should exhibit high level of concerns to increase their participation in the forest project. In achieving sustainability in the system, management needs to make sure that participants are equipped with knowledge and skills so that activities can be improved to achieve desirable outcomes (Kiptot and Franzel, 2011). Providing incentives is one of the significant approaches for achieving project execution. Projects that have adequate funds yield a higher income which helps to decrease poverty in the community thus raising the standard of living among the people (Colfer 2005). In undertaken forest project, certified authorities must make available the required incentives to help in the activities, such as equipments for cutting and replanting materials to ensure adequate flow of goods and services. Maintaining biodiversity within land use also forms part of the essential element for achieving stability of biophysical systems and protection of biological diversity (Butchart et al. 2010).

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **5.0 INTRODUCTION**

The findings, conclusion and recommendations are discussed in this section of the study in accordance to examine stakeholders involvement in the implementation of re-afforestation projects of the Forestry Commission in the Ashanti region.

#### **5.1 SUMMARY OF FINDINGS**

##### **5.1.1 The nature of stakeholders' involvement in the implementation of re-afforestation projects**

The study found that, participants were involved in the budgetary process of their organization including the control process. Respondents also indicated that they were always informed about the project wished to be undertaken in their organization during coordination process while others also showed that they were involved in the monitoring and evaluation process of the organization. This implies that stakeholders were involved in organizational activities.

### **5.1.2 The determinants of stakeholder participation in the implementation of the re-afforestation**

The study found that, technical/biophysical drivers and socio-economic drivers were significant determinants of stakeholder's involvement in re-afforestation projects. However, institutional policy management drivers were not significant determinants of stakeholder's involvement in re-afforestation projects.

*Technical/biophysical drivers:* The study found that, site-species matching, technical capacity of implementers, post establishment, seedling production and tree species selection were all drivers of stakeholders involvement in the implementation of the reforestation program.

*Socio-economic drivers:* The study found that, payment for environmental, local participation and involvement, livelihood planning, social equity, financial and economic viability, addressing underlying causes of forest loss and degradation and knowledge of markets for timber and other forest products and services were all factors that influenced stakeholders' in their participation in the implementation of reforestation.

*Institutional, policy and management drivers:* The study found, conflict resolution, longer season maintenance and conservation of forest sites, forest support programs, community leadership, distribution of rights and responsibilities amongst stakeholders and other forest policies were significant drivers of stakeholder's participation in the re-forestation agenda.

### **5.1.3 Effects of stakeholders' involvement on the success and sustainability of re-afforestation projects**

The study found that, stakeholder's involvement was a significant determinant of success and sustainability of re-afforestation projects. The study found that tree maturity function, stand density with the area remaining intact or area maintained long-term were the specific indicators

of forest growth success. Nevertheless, when it comes to socio-economic success of re-afforestation, increased income, local empowerment and capacity building and availability of food and fibre supplies were agreed by participants. The study also, found that appropriate wildlife species, weed abundance, tree species richness and presence of desired tree species have never been the agents of forest growth while the least of the respondents indicated that special life form was a determinant of forest growth hence a major determinant of the success and sustainability of the re-forestation project. Again, the study found that, biomass productivity, stable soil surface, adequate quantity of surface and ground water were significant indicators of ecosystem functions which was a determinant of the success and sustainability of the re-forestation project.

## **5.2 CONCLUSIONS**

This study had investigated the nature of stakeholder involvement in the implementation of re-afforestation projects of the Forestry Commission in the Ashanti region. The study found that institutional policy management, technical drivers and socio-economic drivers have strong influence on stakeholder's involvement that is 67.3% variability in stakeholder's involvement are explained by institutional policy management, technical drivers and socio-economic drivers. Secondly, the study found that stakeholder's involvement has very strong predictive influence on sustainability of re-afforestation projects. The study found that 70.6% variability in sustainability of re-afforestation projects are explained by stakeholder's involvement. Again, the study found that, participants were involved in the budgetary process of their organization including the control process. Respondents also indicated that they were always informed about the project wished to be undertaken in their organization during coordination process while

others also showed that they were involved in the monitoring and evaluation process of the organization. This implies that stakeholders were involved in organizational activities

### **5.3 RECOMMENDATIONS**

Many projects that are initiated in most developing countries lacks sustainability features. With regards to re-afforestation, there have been several initiatives that have been undertaken to help make sure that the forest reserves within the country are well preserved and protected against destruction. Several frameworks have been developed with the main aim of improving re-afforestation activities. By applying these frameworks, goals attached to sustainability can be achieved specifically the conservation of forest resources and process thus improving the standard of living among the individuals. Below are the frameworks;

First, primary initiators like re-afforestation groups must pay attention to the creation of awareness on the significance in preserving the caliber of lives to identifying the needs and demands of the local communities. An encouragement by local participants may help boost responsibility and accountability of individuals living in the local communities towards forest reserve protection and management. This can be done through communication and interruption with local people concerning the benefits for keeping the forest protected as well as distributing the responsibilities with adequate tools and equipments to help facilitate forest projects and also enhancing dialogue and discussion between local people and other related stakeholders to build capacity in promoting reforestation.

Furtherance, the study suggests that since forest management is a wider activity, it gives enough reason for significant assessment to be conducted to assess facts which concern the community's socioeconomic settings and resource use status to allocate as well as identify challenges

confronting the community and also exploring the ways that can be used to prevent all the challenges influencing the implementation of re-forestation project in the various communities. Again, the re-afforestation can be improved by correct democratic and interactive ways in enhancing participation. However, the research recommends that development of alternatives would help local people to increase forest management by ensuring that income level of local people is stable while waiting for trees to mature.

The re-afforestation activities must also be geared towards increasing profitability in both short term and medium terms so that local peoples' economic status can be enhanced to improve standard of living thus enhancing participation in the re-forestation activities. However, re-afforestation must put practices in place to help encourage crop produce and tree productivity as well. Also, there must be development of infrastructures to help improve market activities like transactions in forest and agricultural products to create good market environment for the local communities in Ghana. Although, project might come with high capital but its achievement would help improve rural development and growth thus sustaining the forest reserves in many communities in Ghana.

In addition, the study recommends that, in order to address issues associated with tenure security, re-afforestation can help by ensuring that households and tenants are given long period either than short term usage of lands. By achieving this, local people receives motivation to keep forest reserves for a long time and this would help promote sustainability and growth thus enhancing economic value to achieve higher profitability. Furthermore, this would help local people to increase forest stewardship thus promote quality and sustainable development.

Last, this method would help in reducing issues related with land tenure between the government and the local people. Nevertheless, local people must be trained towards re-forestation projects

to broaden their understanding and knowledge towards forest protection and management. Also, reforestation initiations should be well packaged to help attract local people in participating in the project to help achieve the success and sustainability of the reforestation program. Hence, all degraded forest lands must be rehabilitated so that those degraded areas can be regained to help achieve acceptable forest cover cultivate forests products to serve the needs and wants of the local community particularly engaging different social groups in the reforestation activity.

### **5.3.1 Areas for Future Studies**

This research had investigated the nature of stakeholder involvement in the implementation of re-afforestation projects of the Forestry Commission in the Ashanti region. It is suggested that future studies should consider other region.. It is also suggested that comparative studies between regions should be studies in the future.



## REFERENCES

- Adhikari, B., (2009). “Reduced emissions from deforestation and degradation: Some issues and considerations”. *J. For. Livelihood* 8, pp. 14–24.
- Agbosu, L., Awumbila, M. Dowuona-Hammond, C. and Tsikata, D. (2007). “Customary and Statutory Land Tenure and Land Policy in Ghana”, Technical Publication No. 70, Institute of Statistical Social and Economic Research (ISSER), University of Ghana, Accra.
- Agrawal, A., (2007). “Forests, governance, and sustainability: Common property theory and its contributions”. *Int. J. Commons* 1, pp. 111–136.
- Agrawal, A., Chhatre, A. and Hardin, R. (2008). “Changing governance of the world’s forests”. *Science* 320, pp. 1460–1462.
- Aheto, D.W., Kankam, S., Okyere, I., Mensah, E., Osman, A., Jonah, F.E. & Mensah, J.C. 2016, ‘Community-based mangrove forest management: Implications for local livelihoods and coastal resource conservation along the Volta estuary catchment area of Ghana’, *Ocean and Coastal Management*.
- Albert, H. (2004). *Handbook of Project Management Procedures*. England: TTL publishing Ltd.
- Anderson, J. C., Narus, J. A., and van Rossum, W. (2016). Customer value propositions in business markets. *Harvard Business Review*, 84(3), 90-9.

- Angelsen, A., (2009). “Realising REDD? National strategy and policy options”, Indonesia: CIFOR.
- Angelsen, A., Brockhaus, M. Sunderlin, W. D. and Verchot, L. V. (eds) (2012). “Analysing REDD+: Challenges and choices”, CIFOR, Bogor, Indonesia, Printed in Indonesia ISBN: 978- 602-8693-80-6.
- Angelsen, A., P. Jagger, R. Babigumira, B. Belcher, N. J. Hogarth, S. Bauch, J. Börner, C. Smith-Hall, and S. Wunder, (2014). “Environmental Income and Rural Livelihoods: A Global-Comparative Analysis”. *World development*, <http://dx.doi.org/10.1016/j.worlddev.2014.03.006>
- Appiah, M., (2012). “Changes in species composition in a deciduous agroecosystem in Ghana following plantation establishment”. *Agroforestry Systems* 82, pp. 57-74.
- Appiah, M, Damnyag, L. Blay, D. and Pappinen, A. (2010). “Forest and agroecosystem fire management in Ghana”, *Mitigation and Adaptation of Strategies for Global Change* 15 (6), pp. 551-570.
- Appiah M, Blay, D. Damnyag, L. Dwomoh, F. Pappinen, A. and Luukkanen, O. (2009). “Dependence on forest and tropical deforestation in Ghana”. *Environment, Development and Sustainability* 11(3), pp. 471-487.
- Arevalo, R. Ochiengc, B. Mola-Yudegod, D. and Gritten, (2014). “Understanding bioenergy conflicts: Case of a Jatropha project in Kenya’s Tana Delta”. *Land Use Policy* 41(2014), pp. 138-148.
- Atiibo, K. A (2012). Examining Stakeholder Management Challenges and Their Impact on Project Management in the Case of Advocacy and Empowerment NGOs in the Upper East Region of Ghana. *Thesis Report*.

- Avtar, R., Sawada, H. and Kumar, P. (2013). "Role of remote sensing and community forestry to manage forests for the effective implementation of REDD+ mechanism: a case study on Cambodia". *Environ Dev Sustain* 15, pp. 1593–1603. DOI 10.1007/s10668-013-9448-y.
- Avtar, R. Takeuchi, W. and Sawada, H. (2011). "Full Polarimetric PALSAR based land cover monitoring in Cambodia for implementation of REDD policies". *International Journal of Digital Earth*, doi:10.1080/17538947.2011.620639.1600
- Baccini, A., Goetz, S. J. Walker, W. S. Laporte, N.T Sun, M. Sulla-Menashe, D. Hackler, J. Beck, P. S. A. Dubayah, R. Friedl, M. A. Samanta, S. and Houghton, R. A. (2012). "Estimated carbon dioxide emissions from tropical deforestation improved by carbon-density maps". *Nature Climate Change*, 2, pp. 182–185.
- Barbier, E. B. and Tesfaw, A. T. (2012). "Can REDD+ Save the Forest? The Role of payments and tenure". *Forests* 3, pp. 881-895
- Bashir H. (2010). *Stakeholder Involvement, Project Ethical Climate, Commitment to the Project and Performance of Poverty Eradication Projects in Uganda: A study of NAADS Projects in Mukono District*. Masters of Business Administration, Makerere University
- Bassey, E., (2003). The effect of Land Tenure on natural resources conservation in the Nigerian Rain Forest. The XII World Forestry Congress. Quebec: FA O.
- Behr, C. Diji, Cunningham, E. M. Gimbage, M. Kajembe, G. Nsita, S. and Rosenbaum, K. L. (2012). "Benefit Sharing in Practice: Insights for REDD+ Initiatives", Washington, DC: Program on Forests (PROFOR).
- Beymer-Farris, B. A. & Bassett, T. J. (2012). 'The REDD menace: Resurgent protectionism in Tanzania's mangrove forests'. *Global Environmental Change*.

- Boutthavong, S. Hyakumura, K. and Ehara, M. (2017). Stakeholder participation in REDD+ readiness activities for three collaborative projects in Lao PDR. *Forests*, 8,
- Brody, S. D. (2003). Measuring the Effects of Stakeholder Participation on the Quality of Local Plans Based on the Principles of Collaborative Ecosystem Management. *Journal of Planning Education and Research* 22(4): 407–419.
- Brown, D., Seymour, F. and Peskett, L. (2008). “How do we achieve REDD co-benefits and avoid doing harm? In Moving Ahead with REDD: Issues, Options and Implications”, Angelsen, A., Ed.; CIFOR: Bogor, Indonesia, pp. 107–118.
- Buchy, M. & Hoverman, S. (2000). ‘Understanding public participation in forest planning: a review’, *Forest Policy and Economics*.
- Butchart, S. H. M., Walpole, M., Collen, B., van Strien, A., Scharlemann, J. P. W., Almond, R. E. A., Baillie, J. E. M., Bomhard, B., Brown, C., Bruno, J., Carpenter, K. E., Carr, G. M., Chanson, J., Chenery, A. M., Csirke, J., Davidson, N. C., Dentener, F., Foster, F., Galli, A., Galloway, J. N., Genovesi, P., Gregory, R. D., Hockings, M., Kapos, V., Lamarque, J-F., Leverington, F., Loh, J., McGeoch, M. A., McRae, L., Minasyan, A., Morcillo, M. H., Oldfield, T. E. E., Pauly, D., Quader, S., Revenga, C., Sauer, J. R., Skolnik, B., Spear, D., Stanwell-Smith, D., Stuart, S. N., Symes, A., Tierney, T., Tyrrell, T. D., Vié, J-C., and Watson, R. (2010). Global Biodiversity: Indicators of Recent Declines. *Science*, 328, 1164 (2010); DOI:10.1126/science.1187512.
- Cardinale, B. J., Duffy, J. E. Gonzalez, A. Hooper, D. U. Perrings, C. Venail, P. Narwani, A. Mace, M. G. Tilman, D. Wardle, D. A. Kinzig, A. P. Daily, G. C. Loreau, M. Grace, J. B. Larigauderie, A. Srivastava, D. S. and Naeem, S. (2012). “Biodiversity loss and its impact on humanity”. *Nature*, 486, pp. 59–67.

- Carlsen, K., Hansen, C. P. & Lund, J. F. (2012). 'Factors affecting certification uptake - Perspectives from the timber industry in Ghana'. *Forest Policy and Economics*.
- Carol, Y., Cohen, M. W. and Palmer, G. R. (2004). Project risk identification and management. *AACE International Transactions*.
- Cerbu, G., Minang, P. A. Swallow, B. and Meadu, V. (2009). Global survey of REDD projects: What implications for global climate objectives? ASB Policy Brief No. 12. ASB Partnership for the Tropical Forest Margins, Nairobi, Kenya.
- Chang, Y. (2013). Performance measurement and adoption of balanced scorecards: a survey of municipal governments in the USA and Canada, *International Journal of Public Sector Management*, 17 No.3, pp.204-21.
- CIFOR. (2003). "Learning from past rehabilitation efforts", *CIFOR News* 7, Number 32.
- Clark, J. S., Bell, D. M., Hersh, M. H. & Nichols, L. (2011). 'Climate change vulnerability of forest biodiversity: Climate and competition tracking of demographic rates', *Global Change Biology*.
- Collier P., (2007). "The Bottom Billion: Why the poorest countries are failing and what can be done about it". Oxford: Oxford University Press.
- Colfer, C. J. P. ed. (2005). "The Equitable Forest: Diversity, Community and Natural Resources". Washington, D.C.: RFF/CIFOR.
- Counsell, S., (2009). "Forest Governance in Africa". South African Institute of International Affairs, Jan Smuts House, East Campus, University of the Witwatersrand, Johannesburg, South Africa. *S A I I A Occasional Paper*, Number 50.

- de Araujo Barbosa, C. C., Atkinson, P. M. & Dearing, J. A. (2016). 'Extravagance in the commons: Resource exploitation and the frontiers of ecosystem service depletion in the Amazon estuary'. *Science of the Total Environment*.
- Dhiaulhaq, A., Grittena, D. De Bruyn, T. Yasmi, Y. Zazali, A. and Silalahi, M. (2014). "Transforming conflict in plantations through mediation: Lessons and experiences from Sumatera, Indonesia". *Forest Policy and Economics*, <http://dx.doi.org/10.1016/j.forpol.2014.01.003>
- Dooley, K., and C. Okereke, (2009). "Distributive Equity Concerns in an International REDD Mechanism: Towards a Copenhagen Climate Agreement". IOP Conference Series: *Earth and Environmental Science*, 6:112022
- Dutschke, M. and R. Wolf, (2007). "Reducing emissions from deforestation in developing countries. The way forward". GTZ Climate Protection Programme, Eschborn, Germany. 29p.
- Eweje, W. and Kerzner, H. (2012). *Project Management: A System Approach to Planning, Scheduling and Controlling*. 8th Ed. New Jersey: John Wiley and Sons.
- FAO (2005). *State of the World's forests 2005*, FAO.
- FAO (2010). 'Global Forest Resource Assessment 2010', *Forestry Paper*.
- FAO. (2011). "Framework for assessing and monitoring forest governance". Electronic Publishing Policy and Support Branch, Communication Division, FAO, Rome.
- Flanagan, G. and Norman U. (2003). *Assessment and Control of project Risks*. Englewood Cliffs: Prentice-Hall.
- Freeman, R. E., Harrison, J. S. and Wicks, A. C. (2007). *Managing for Stakeholders – Survival, Reputation, and Success*, Louis Stern Memorial Fund, US.

- FRA. (2010). “Global forest resources assessment”. Rome: Food and Agriculture Organization of the United Nations.
- Fudge, N. and Wolfe, C.D.A. (2008). Assessing the Promise of User Involvement in Health Service Development: Ethnographic Study. *BMJ*, 336, 313
- Gebara, M. F., (2013). “Importance of local participation in achieving equity in benefit-sharing mechanisms for REDD+: a case study from the Juma Sustainable Development Reserve”. *International Journal of the Commons*, 7(2), pp. 473-497.
- Gibbs, H. K., Brown, S. Niles, J. O. and Foley, J. A. (2007). Monitoring and estimating tropical forest carbon stocks: making REDD a reality. *Environmental Research Letters*, 2: 045023.
- GOK, (2010). Ministry of Home Affairs, Kenya Programme of Action for Children Framework Based on the National Conference on children. Theme Our Children Our Future.
- Fudge, N. and Wolfe, C. D. A. (2008). Assessing the Promise of User Involvement in Health Service Development: Ethnographic Study. *BMJ*, 336, 313
- Griffiths, T., (2008). “Seeing ‘REDD’? Forests, Climate Change Mitigation and the Rights of Indigenous Peoples and Local Communities”. Moreton-in-Marsh: Forest Peoples Programme.
- Hansen, C., Lund, J. & Treue, T. (2010). ‘Neither fast, nor easy: the prospect of Reduced Emissions from Deforestation and Degradation (REDD) in Ghana’. *International Forestry Review*.
- IEG, (2012). “Managing Forest Resources for Sustainable Development: An Evaluation of World Bank Group Experience”. The World Bank, Washington, D.C. 20433, U.S.A.

- IPCC, (2007). Climate change 2007: Synthesis report. Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Core Writing Team, eds. R. K. Pachauri, and A. Reisinger. Geneva: IPCC, 104.
- Jagger, P., Luckert, M. K. Duchelle, A. Lund, J. F. and Sunderlin, W. D. (2014). "Tenure and forest income: Observations from a global study on forests and poverty". *World Development*, <http://dx.doi.org/10.1016/j.worlddev.2014.03.004>
- Khadka, C., Hujala, T., Wolfslehner, B. & Vacik, H. (2013) 'Problem structuring in participatory forest planning'. *Forest Policy and Economics*.
- Kiptot, E., and Franzel, S. (2011). "Gender and agroforestry in Africa: are women participating?" ICRAF Occasional Paper No. 13. Nairobi: World Agroforestry Centre
- Knox, A., Caron, C. Miner, J. and Goldstein, A. (2011). "Land tenure and payment for environmental services: Challenges and opportunities for REDD+", *Land Tenure J. 2011*, 2, pp. 17–55.
- Kobusingye, B. Mungatu, K. J. and Mulyungi, P. (2017). Influence of stakeholders involvement on project outcomes. A case of water, sanitation and hygiene (WASH) project in Rwanda. *European Journal of Business and Social Sciences*, Vol. 6, No. 06, P.P. 195-206
- Kululanga, G. and Kuotcha, W. S. (2010). Measuring Project Risk Management Process For Construction Contractors With Statement Indicators Linked to Numerical Scores. *Engineering, Construction and Architectural Management*, 17 Iss: 4, pp.336 – 351
- Larson, A. M. (2011). 'Forest tenure reform in the age of climate change: Lessons for REDD+', *Global Environmental Change*.



- Larson, A. M., and Petkova, E. (2011). “An introduction to forest governance, people and REDD+ in Latin America: Obstacles and opportunities”. *Forests*, 2, pp. 86-111.
- Lawlor, K., Madeira, E. M. Blockhus, J. and Ganz, D. J. (2013). “Community Participation and Benefits in REDD+: A Review of Initial Outcomes and Lessons” *Forests*, 4, pp. 296-318.
- Li, T. H. Y., Ng, S. T. and Skitmore, M. (2013) Evaluating stakeholder satisfaction during public participation in major infrastructure and construction projects: A fuzzy approach. *Automation in Construction*, 29, pp. 123–135.
- Linquist, B., Groenigen, K. J. Adviento-Borbe, M. A. Pittelkow, C. and Kessel, C. (2012). “An agronomic assessment of greenhouse gas emissions from major cereal crops” *Glob. Chang. Biol.*, 18, pp. 194–209.
- Madeeha, S. and Imran, H. N. (2014). Impact of Internal Stakeholder’s Engagement on Project Portfolio Management Success, it Industry in Lahore, Pakistan. *Journal of Science International (Lahore)*, 26(4), 1777-1782.
- Malunga, C. and Banda, C., (2004). *Understanding Organizational Sustainability through African Proverbs*. Washington: Pact Publications.
- Mansourian, S., Lucy Aquino, L. Erdmann, T. K. and Pereira, F. (2014). “A comparison of governance challenges in forest restoration in Paraguay’s privately-owned forests and Madagascar’s co-managed State Forests”. *Forests* 5, pp. 763-783.
- Mbow, C., D. Skole, M. Dieng, C. Justice, D. Kwesha, L. Mane, M. El Gamri, V. Von Vordzogbe, and H. Virj, 2012. “Challenges and Prospects for REDD+ in Africa: Desk Review Of REDD+ Implementation in Africa”. *GLP Report* 5, 70
- McInnes, R. J. (2018). ‘Sustainable development goals’, *The Wetland Book: I: Structure and Function, Management, and Methods*.

- McManus, J. (2004). A Stakeholder Perspective in Software Project Management. *Management Services*, 48(5), 8-12.
- Menoka, R. (2014). Stakeholder Engagement and Sustainability-related Project Performance in Construction. *Journal of Project Management*, Vol.3.
- Meyfroidt, P., Vu, T. P. and Hoang, V. A. (2013). 'Trajectories of deforestation, coffee expansion and displacement of shifting cultivation in the Central Highlands of Vietnam', *Global Environmental Change*.
- Miller, R. and Hobbs, D. (2005). Understanding and Managing Risks in Large Engineering Projects. *International Journal of Project Management*, 19, 437-443.
- Mohammed, 2002
- Morrissey, J. (2007). Indicators of Citizen Involvement: Lessons from Learning Teams in Rural EZ/EC Communities. *Community Development Journal*, 35, 59-74.
- Munns, A. K. and Bjeirmi, B. F. (2016). The role of project management in achieving success. *International Journal of Project Management*, 14(2), 81-7.
- Murdiyarso, D., and Adiningsih, E. S. (2007). "Climate anomalies, Indonesian vegetation fires and terrestrial carbon emissions". *Mitigation and Adaptation Strategies for Global Change* 12 (1), pp. 101-112.
- Murdiyarso, D., Hergoualc'h, K. and Verchot, L. V. (2010). Opportunities for reducing greenhouse gas emissions in tropical peatlands. *Proceedings of the National Academy of Sciences* 107 (46), pp. 19655-19660.
- Newcombe, R. (2003). From client to project stakeholders: a stakeholder mapping approach. *Construction Management and Economics*, 22(8), pp. 762-784.

- Nijkamp, M.L. and Tanis, C. (2002). The Entprojectsrise System Experience – from Adoption of Success, Novartis Foundation for Sustainable Development. (2004). Development Assistance at *the Threshold of The 21st Century Report*.
- Nyaguthii, T. (2013). Stakeholders participation in project implementation. Nairobi. Africa Center for Technology Studies.
- Nyikal, S. (2011). All Together for Agent Action in Favor of Street Children. Government of Kenya: Nairobi.
- Oakley, P. (2013). *Projects with people: The practice of Involvement in rural development*. Geneva: International Labour Office
- Oduro, K. A., Mohren, G. M. J., Peña-Claros, M., Kyereh, B. and Arts, B. (2015). ‘Tracing forest resource development in Ghana through forest transition pathways’, *Land Use Policy*.
- O'Halloran, B. (2014). A Study of the Awareness of Stakeholder Management amongst Project Managers in the Construction Industry in Ireland. *Dublin Business School*, MBA in Project Management
- O'Halloran, M. (2014). The Awareness of Stakeholder Management amongst Project Managers in the Construction Industry in Ireland.
- Olander, S. and Landin, A. (2015). Evaluation of stakeholders' influence in the implementation of construction project. *International journal of project Management*, (23(4) 321-328
- Olbrei, E., and S Howes, (2012). “A very real and practical contribution? Lessons from the Kalimantan Forests and Climate Partnership”, Australian National University, Development Policy Centre. Australia.

- Ozinga, S., (2012). “The impact of REDD on forest governance”, *ETFRN News (April 2012)*, 53, pp. 141-148.
- Palacios-Agundez, I., Fernández de Manuel, B., Rodríguez-Loinaz, G., Peña, L., Ametzaga-Arregi, I., Alday, J.G., Casado-Arzuaga, I., Madariaga, I., Arana, X. & Onaindia, M. (2014). ‘Integrating stakeholders’ demands and scientific knowledge on ecosystem services in landscape planning’, *Landscape Ecology*.
- Patel, T., Dhiaulhaq, A. Gritten, D. Yasmi, Y. Bruyn, T. D. Paudel, N. S. Luintel, H. Khatri, D. B. Silori, C. and Suzuki, R. (2013). “Predicting *Future* Conflict under REDD+ Implementation”, *Forests 4* (2), pp. 343-363.
- Pereira, H. M., Leadley, P. W. Proenca, V. Alkemade, R. Scharlemann, J. P. W. Fernandez-Manjarres, J. F. et al., (2010). “Scenarios for global biodiversity in the 21st century” *Science 330*, pp. 1496–1501.
- Patton, M. Q. (2008). *Utilization-focused evaluation* (4th ed.). Thousand Oaks, CA: Sage.
- Phelps, J., Webb, E. L., and Agrawal, A. (2010). Does REDD+ threaten to recentralize forest governance? *Science*, 328, 312–313.
- Pollitt, J. (2007). Supply chain management (SCM) and organizational key factors for the successful implementation of enterprise resource planning (PROJECTS) systems , *Proceedings of the Americas Pinnaflex Educational Resources, Inc.*, Cincinnati, OH, pp.173-207. pp. 167–175.
- Potapov, P., Turubanova, S. and Hansen, M.C. (2011). ‘Regional-scale boreal forest cover and change mapping using Landsat data composites for European Russia’, *Remote Sensing of Environment*.

- Ramabodu, M. S., and Verster, J. J. P. (2010). Factors Contributing to Cost Overruns of Construction Projects. *In the Proceeding of ASOCSA 5th Built Environment Conference*, Durban South Africa.
- Ripple, W.J., Wolf, C., Newsome, T.M., Galetti, M., Alamgir, M., Crist, E., Mahmoud, M.I. & Laurance, W.F. (2017). ‘World Scientists’ Warning to Humanity: A Second Notice’, *BioScience*.
- Sachs, J.D. (2012). ‘From Millennium Development Goals to Sustainable Development Goals’, *The Lancet*.
- Sandbrook, C., Nelson, F. Adams, W. D. and Agrawal, A. (2010). “Forests, carbon, and the REDD paradox”. *Oryx*, 44 (3), pp. 330-39.
- Siikamäki J., and Newbold, S. (2012). “Potential Biodiversity Benefits from International Programs to Reduce Carbon Emissions from Deforestation”. *Ambio*, 41, (1), pp. 78-89.
- Takim, R. (2009). The management of stakeholders’ needs and expectations in the development of construction project in Malaysia. *Modern Applied Science*, 3(5),
- Teye, J. K. (2013). ‘Analysing forest resource governance in Africa: Proposition for an integrated policy network model’, *Forest Policy and Economics*.
- UNCED (1992). ‘Earth Summit’92. The UN Conference on Environment and Development - Agenda 21’, *Reproduction*.
- UNEP (2011). ‘Bonn Challenge’, *Bonn Challenge*.
- Verdone, M. & Seidl, A. (2017). ‘Time, space, place, and the Bonn Challenge global forest restoration target’, *Restoration Ecology*.

- Venter, O., and Koh, L. P. (2012). "Reducing emissions from deforestation and forest degradation (REDD+): game changer or just another quick fix?" *Annals of the New York Academy of Sciences*.
- Watson, C., Brickell, E. and McFarland, W. (2013). "Integrating REDD+ into a green economy transition Opportunities and challenges", Overseas Development Institute, London. 33p.
- Wible, B. (2012). 'Rio+20. Science for sustainable development'. *Science (New York, N.Y.)*.
- Yasmi, Y., L. Kelley, D. Murdiyarso, and T. Patel, (2012). "The struggle over Asia's forests: An overview of forest conflict and potential implications for REDD+", *Int. For. Rev. 14*, pp. 1–11.
- Young, T. L. (2006). *Successful Project Management*, Second Edition, Kogan Page, UK.
- Yulia A., (2005). Policy Brief 13; Community-Based Organizations: *Strategies for Sustainability*; University of Michigan Business School.
- Zhai, L., Xin, Y. and Cheng, C., (2009). Understanding the value of project management from a stakeholder's perspective: Case study of mega-project management. *Project Management Journal*, 40, 99-109

## APPENDIX



KWAME NKURUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

### SURVEY QUESTIONNAIRE

The aim of the questionnaire is to examine the nature of stakeholder involvement in the implementation of re-afforestation projects of the Forestry Commission in the Ashanti region and assess its contribution towards project sustainability. Kindly indicate your preference among alternative answers for each question by ticking in the appropriate box. Please note that this questionnaire is to be completed by the youth only. Where alternative answers are not provided, fill in the gaps provided. Respondents are assured of the confidentiality of this exercise because it will be solely be used for academic purpose. Thank you for your contribution.

### INSTRUCTIONS

*Please fill out the forms below, to the best of your knowledge by ticking [✓] or completing with short answers in the space provided.*

## SECTION 1 : PROFILE OF RESPONDENT

<b>SECTION 1 : PROFILE OF RESPONDENT</b>			
<b>1.1</b>	Gender	1. Male <input type="checkbox"/>	0. Female <input type="checkbox"/>
<b>1.2</b>	Age	Below 30 years <input type="checkbox"/> 30 – 45 year) <input type="checkbox"/>	3. 45 – 60 year <input type="checkbox"/>
<b>1.3</b>	What is your highest level of education you have achieved?		
	0. No Formal Education <input type="checkbox"/> 1. Primary/JHS/SHS <input type="checkbox"/> 2. Diploma <input type="checkbox"/>	3. Bachelor degree <input type="checkbox"/> 4. Master Degree <input type="checkbox"/> 5. Any other: .....	
<b>1.4</b>	Are you the head of your household?	1. Yes <input type="checkbox"/>	0. No <input type="checkbox"/>
<b>1.5</b>	How long have you lived in this community?	a. 0 - 10 years <input type="checkbox"/> c. 21 – 30 years <input type="checkbox"/>	b. 11 – 20 years <input type="checkbox"/> d. Above 30 years <input type="checkbox"/>
<b>2.1</b>	How many people depend on you in your household?	1. Below 3 <input type="checkbox"/> 2. 7 – 10 <input type="checkbox"/>	3. 4 – 6 <input type="checkbox"/> 4 Above 10 <input type="checkbox"/>
<b>2.2</b>	What primary/main occupation are you currently engaged in?	1. Crop farming <input type="checkbox"/> 2. Livestock rearing <input type="checkbox"/> 3. Fish farming <input type="checkbox"/> 4. Tree planting <input type="checkbox"/>	5. Poultry farming <input type="checkbox"/> 6. Honey production <input type="checkbox"/> 7. Day laborer <input type="checkbox"/> 8. Lake fishing <input type="checkbox"/>  <b>9. Others: .....</b>
<b>2.3</b>	What is your employment status in this occupation?	1= paid employee ( ) 2= employer ( ) 3= self- employed ( ) 4= unpaid family worker ( )	
<b>2.4</b>	1= Yes ( ) 2= No ( )		



Do you have any other source(s) of income?	
2.5	How many times does your family feed on food in a day? 1= ones ( ) 2= twice ( ) 3= Thrice ( )
2.6	What is your average monthly income from your primary occupation? 1 = > Gh¢50 ( ) 2 = Gh¢50- Gh¢100 ( ) 3 = Gh¢101 – Gh¢300 ( ) 4 = Gh¢301 – Gh¢ 500 ( ) 5= > Gh¢500 and above ( )
2.7	Do you have any secondary occupation? 1. Yes [ ] 0. No [ ]
2.8	How long have you been engaged in your primary/main occupation? 1. Below 10 years [ ] 3. 16 – 20 years [ ] 2. 10 – 15 years [ ] 4 Above 20 years [ ]

## SECTION 2: STAKEHOLDERS INVOLVEMENT

With regard to stakeholders engagement please use the appropriate number to indicate the extent to which you agree or disagree with each statement. The item scales are five-point Likert type scales with 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Statements	1	2	3	4	5
<b>Stakeholder Involvement in Design/Planning</b>					
Stakeholder was involved in the preliminary assessment of the re-afforestation projects of the Forestry Commission					

There was documentation of the re-afforestation projects of the Forestry Commission which called for the involvement of all stakeholders					
I was directly or indirectly involved in the budgetary process					
The indicators set were approved by all stakeholders since they were of interest to the stakeholders.					
Before ground work began there was approval of the entire project design and planning process					
<b>Stakeholder Involvement in Implementation</b>					
I am part of the supervision process either directly or indirectly.					
I am part of the control process either directly or indirectly.					
I am informed of the project coordination process					
The project organization process was an effort of all the key stakeholders					
<b>Stakeholders in Monitoring and Evaluation</b>					
I was oriented on the procurement evaluation indicators					
I was regularly given feedback on the re-afforestation projects of the Forestry Commission					

Assessment of performance is a teamwork exercise involving all key stakeholders either directly or indirectly					
Assessment of the procurement scheme is a teamwork exercise involving all key stakeholders either directly or indirectly					
I was involved in the formulation of procurement evaluation indicators					

### SECTION 3: DRIVERS OF STAKEHOLDER PARTICIPATION IN THE IMPLEMENTATION OF THE RE-AFFORESTATION

<b>Technical/biophysical drivers</b>					
Site-species matching					
Tree species selection					
Site preparation					
Seedling production					
Quality of seeds or seedlings					
Appropriate time of planting					
Technical capacity of implementers					

Post-establishment silviculture					
Site quality					
<b>Socio-economic drivers</b>					
Livelihood planning					
Local participation and involvement					
Socio-economic incentives					
Financial and economic viability					
Payments for environmental services (PES) scheme					
Social equity					
Corruption					
Degree of dependency on traditional forest products					
Marketing prospects					
Knowledge of markets for timber and other forest products and services					
Addressing underlying causes of forest loss and degradation					
<b>Institutional, policy and management drivers</b>					
Institutional arrangements					

Effective governance					
Forest harvesting policies and other forest policies					
Tenure security					
Conflict resolution mechanism					
Distribution of rights and responsibilities amongst stakeholders					
Long-term maintenance and protection of reforested sites					
Forestry support programs					
Community leadership					
Risk involved					

## SECTION 4: SUCCESS AND SUSTAINABILITY OF RE-AFFORESTATION

### PROJECTS IN THE DISTRICT

<b>Forest growth success indicators</b>					
Tree growth performance (measures by tree basal area, height, stem form)					
Stand density (for age)					
Area remaining intact or area maintained long-term					
Actual production from timber, fuel-wood, resin, fruits, etc.					

<b>Socio-economic success</b>					
Increased income					
Local employment opportunities					
Other livelihood opportunities					
Availability of food and fibre supplies					
Stability of market prices of locally produced commodities					
Local empowerment and capacity building					
<b>Vegetation structure</b>					
Canopy cover					
Canopy height					
Ground cover					
Litter cover					
Shrub cover					
Stags (dead trees)					
<b>Species diversity</b>					
Tree species richness					
Presence of desired tree species					
Appropriate wildlife species present					
Special life forms					
Weed abundance					
<b>Ecosystem functions</b>					
Stable soil surface					
Soil erosion					
Soil fertility					
Landslide frequency					

Adequate quantity of surface and ground water					
Water quality					
Soil organic matter					
Biomass productivity					
Carbon sequestration					

### **Reforestation Project Characteristics**

Project goals/objectives					
Project implementers					
Project location or accessibility of sites					
Project size					
Project funding					
Project life cycle					
Private vs public land					

