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**The Influence of National Forestry Policy on the Environment in the Western Region of
Ghana**

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Thesis title

The influence of national forestry policy on the environment in the Western Region of Ghana.

Objectives of thesis

To assess how the Ghana's National Forestry Policy influences community forestry resources and the condition and quality of the environment. To evaluate how the Ghana's National Forestry Policy can be framed to promote the quality of the environment in the chosen region. To recommend necessary amendments of the Ghana's National Forestry Policy to keep sustainable development with regard to community forestry.

Methodology

Reference books and journals will be reviewed, the Ghana's National Forestry Policy – review and theoretical approaches, choosing an appropriate methods of community forestry benefits valuation. Interviewing community forest residents and forestry experts, an influence of the Ghana's National Forestry Policy will be described. After that data will be collected and the community forestry benefits will be assessed. Results will be discussed and possible amendments of the Ghana's National Forestry Policy will be proposed.

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Declaration

This thesis, “The Influence of National Forestry Policy on the Environment in the Western Region of Ghana” was prepared by Jonathan Oforu to the Faculty of Forestry and Wood Science. The texts in this thesis are original, and all the sources have been quoted and acknowledged by means of complete references and according to citation rules of the FFWS.

Prague, April 2020

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Jonathan Oforu

Dedication

I dedicate this work to my supervisor doc. Ing. Miroslav Hajek, Ph.D., my parents, my siblings and my wife, children all my friends who encouraged and inspired me in this study.

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Abstract

This work examines the influence of forestry policies on the environment in the Western region of Ghana. Rural producers, including farmers and cows' herders, have much of the time added to enlarging natural resources in the nation. Forest resources assume a significant activity in securing the environment and in sustainable progression. In this manner, aside timber production, individuals who live in communities near forest likewise acquire Non-Timber Forest Products from the forest as a wellspring of food and medicinal purposes. Forestry policymakers frequently promote narratives of an approaching ecological crisis import by improper management methodologies, improper technologies, and population pressures. Participatory forestry suggests a method of intervening this crisis by carrying rural communities into the overlap of higher fitting forest policies. This survey recommends a surrogate system dependent on a concept of the duty of rural people in shaping the natural assets and the need of making democratic rural podium for normal resource management. These rural podiums need to perceive the majority of rural society, oblige diverse intrigue groups, and encourage orderly based discussion on relevant development and environmental policies. Although the past forestry policies frequently have underestimated poor people and exacerbated destitution, building natural assets in the hands of the rural poor can decrease poverty and upgrade environmental protection. The national forest policy in Ghana has no focus improving the livelihood of rural dwellers. It is therefore important that, the national forest policy in Ghana especially in the Western region which accounts for a higher percentage of the high forest zone needs to be reformed to protect the environment and at the same time improve the livelihoods of forest communities. Participation of local people in forest management is very important as they the best people to help in the conservation of the forest and environmental resources because of their dependence on the forest.

Keywords: Forest, Forest Policy, Livelihoods, Poverty, environment, management, communities.

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1.0 Introduction

During the twentieth century the number of inhabitants in southern Ghana expanded by as much as 10 times. Even though a portion of that expansion has been absorbed by urbanization, rural population have risen, which has resulted in clearing of forest land to plant commercial groves of cocoa, oil palm plantation and growing of food crops. Consequently, the forest territories have progressively been cleared, both to draw timbers out and to make farms. Rather, a great part of the landscape is a mosaic of woodland and clearings for food crops, cocoa and plantation of oil palm(Wiggins et al., 2004).

Albeit a portion of that expansion has been consumed by urbanization, rural populations have risen, leading to freeing the forest land to cultivate food crops and to plant commercial products such as cocoa and oil palm. Wherefore the forests zones have progressively been cleared, both to take away timber and also to make farms. Rather, a significant part of the scene is a mosaic of secondary forest and clearings for food crops, cocoa and oil palm plantations (Wiggins et al., 2004). Formal policy for the management of forest in southern Ghana goes back to the nineteenth century for a history of forest policy and strategy, when colonial masters perceived the importance for a strategy or policy to settle the disputing matters between the farmers and loggers for land and timber, against the environmental or ecological benefits of forest cover not least the importance of trees for the micro-climate benefiting cocoa and different harvests. Huge numbers of current forest reserves were built up in the first half of the twentieth century. From the initial part of 1950s through to the early 1990s, forest policy turned out to be perpetually worried about directing and facilitating the logging and wood companies, seen as key sources of foreign exchange and occupations for the recently autonomous nation of Ghana. By the 1960s, little farmers found that trees on the land they cultivated were not their property, while before they had the option to contract pit-sawyers to cut them (Wiggins et al., 2004).

Ghana was lavishly enriched with forest resources which were imperative for her improvement and future prosperity. Initially, Ghana's forests covered secured around 36 percent (84,000km²) of the total land area of the territory of the nation (W. Hawthorne & Abu-Juam, 1995). Records do show the presence of generally undisturbed forests, which harbored rich biodiversity, which secured delicate soils, and controlled the supply of scarce water resources. Nonetheless, deforestation and worldwide environmental change impacts are essentially causing a

quick loss of biodiversity in the nation. The deterioration of forests and the loss of biodiversity in Ghana have expanded strongly in late decades. Ghana's total forest zone is now assessed at 81,342 km² and records for about 40% of the total land territory, out of which about 17,845 km² are known to be under reservation. The reserved forest is comprised of 11,590 km² of production forests; 4,323 km² of protection forests; and around 1,980 km² of game production reserves.

2. Aim of the Study

Forests in Ghana have suffered a serious decline because of over-exploitation to meet the growing socio-economic needs of the population. The continuous depletion of these resources is likely to lead to their eminent extinction in the long-term. The factors responsible for this state of affairs include the over-exploitation of timber species, improper forest management systems, poor farming practices, population pressure, the complex nature of Ghana's land tenure system, lack of community involvement, an unequal benefits-sharing system, weak institutions, inefficiency of the timber industry, flouting of laid down regulations and lack of political will and commitment

The main objective is to:

- To assess how the Ghana's National Forestry Policy influences community forestry resources and the condition and quality of the environment, benefit from forest resources are also examined.
- To evaluate how the Ghana's National Forestry Policy can be framed to promote the quality of the environment in the chosen region.
- To recommend necessary amendments of the Ghana's National Forestry Policy to keep sustainable development with regard to community forestry.

3.0 Literature Review

3.1 Geographical features of Ghana

Ghana is a West African nation along the Gulf of Guinea only a couple of degrees north of the equator. It is bordered towards the north by Burkina Faso, east by Ivory Coast and the west by Togo just as the southern belt by the Gulf of Guinea. As indicated by UN assessment in 2017, the population of Ghana remains at 29,195,625. Ghana has been divided into 10 significant regions. The high forest zones are found in 4 regions; Brong Ahafo, Western, Ashanti, and Eastern. The remainder of the regions additionally have forest reserves which are not as high as the previously mentioned. Soils in Ghana are commonly rich henceforth, agribusiness stays an indispensable segment of the economy. There are numerous natural resources including, gold, bauxite, manganese, timber, cotton, coffee, cocoa, rubber, clay, industrial diamonds, Hydropower, silver, limestone, petroleum, and Salt (Ghana, 2010) setting the nation as one of the most richest in Africa.

3.2 General Overview of Ghana's Forest

Ghana is enriched with a huge forest cover of about 23.9 million hectares of which 15.7 million savanna forest zone (SZ) in the north and the rest 8.2 million ha which is the tropical high forest zone (HFZ) covers the southern part. The high forest zone is described by rich farmlands and forest reserves comprising of the ever green and semi-deciduous forests with numerous subtypes (W. Hawthorne & Abu-Juam, 1995). The HFZ is the main supply of the nation's timber production. The savanna is described by an open shade of trees and bushes or shrubs with a ground layer of grasses (Hall and Swaine 1981). The savanna zone covers about 9.4 million ha generating mainly wood fuel. A transitional vegetation zone exists between the HFZ and the SZ, and is portrayed by a blend of savanna vegetation and dry forest.

Deforestation poses an extraordinary hazard to the forest in Ghana as deforestation is evaluated to happen at a pace of around 65,000 ha for every year. The primary purpose of deforestation is the transformation of forest lands into farms lands for production of food crops to support the country whose population continues in growing. Other significant influence also includes illegal logging exercises, mining, and constructions of roads and infrastructures, terrible

cultivating practices and out of control fires. Agricultural fields, secondary forest patches and trees around settlements covers a larger piece of the off- reserves (Mayers et al., 1996).

In the year 2010 the off- reserve for timber processing was evaluated at 350,000 ha (FAO 2010). Numerous merchandising timber species are found in these off- reserve regions. In 1996, it was evaluated to have a stock volume of around 268 million m³ of timber. Practically 50% of the timber harvested originated from off- reserve in the early and late 90's periods, however this has radically diminished as of late (Hansen & Treue, 2008). Be that as it may, endeavors are been made to recover lost forest by different plantation programs started by government and private associations.

3.3 The Forest Resource Base

3.3.1 Vegetation zones

The entire area of Ghana is about 23.85 million ha with a coastline of about 567 km. it's divided into two main ecological zones: the High Forest Zone (HFZ) of southern Ghana covering 8.2 million ha (34 percent) and therefore the northern Savannah Zone (SZ) covering 15.7 million ha (66 percent). These two zones merge into one another within the Forest Transition Zone (FST) as shown in Table 1 (Odoom, 2005). Table 1 shows the situation of the vegetation zones additionally to it of the study area. Most of the natural vegetation within the SZ has been destroyed for agricultural purposes and there's tremendous shortage of wood for all purposes.

Table 1. Areas of vegetation zones and included Forest Reserves

Vegetation zone	Forest Reserves 000 ha (No. of FRs)	Area of vegetation zones	Percentage of area of Ghana	Ecozone
Wet evergreen (WE)	1 634 (266)	657	2.75	HFZ - main zone of chain sawing
Moist evergreen (ME)		1 777	7.45	
Moist semi-deciduous (MS)		3 318 2	13.90	
Dry semi-deciduous (FST)		144	8.98	
Southern marginal (FST)		236	0.99	
Total	1 634 (20% of HFZ)	8 132	34	
South-East Outlier (CS)	836 (24)	2	0.008	SZ
Guinea Savannah (GuS)		14 790	61.98	
Sudan Savannah (SuS)		190	0.79	
Others (thicket, swamp, grass, etc.)		750	3.14	
Total	836 (5% of SZ)	15 732	66	
Grand total	2 470 (10.3% of total)	23 864	100	

Source: (Odoom, 2005)

3.3.2 Forest Reserves

In Ghana, the Forest reserves are legitimately characterized and separated zones of forests that have been explicitly assigned for the management and protection of the forest in ceaselessness. The title to the land inside the reserves stays with the traditional authorities (TAs), for example stools and chiefs. Nonetheless, the FSD (Forest Service Division) of the FC (Forestry Commission) oversees the forest assets inside the reserves just as inside timber concessions in open zones in trust for the (TAs).

The total number of forest reserves is more than 250. Two hundred and sixteen (86%) of them are situated in the HFZ and spread around 20 percent of the zone (Table 1). This is the zone of business logging that is relied upon to be overseen economically for forest commodities and services. It is likewise the zone by which the chain sawing predominantly happens. The stocking of the presently attractive timber species is more noteworthy in the drier semi-deciduous zones than in the evergreen forest.

The Forest Reserve (FR) area as far as disturbance is concern, the extent was estimated by Forest Service Division (FDS) with the recent history are (“good to excellent”) is 16%, “degraded” area of the reserve is about 55% and “very bad condition” is said to be 29%. (W. D. Hawthorne & Abu Juam, 1995). Figure 1 below is a representation of the disturbances in the forest reserves.

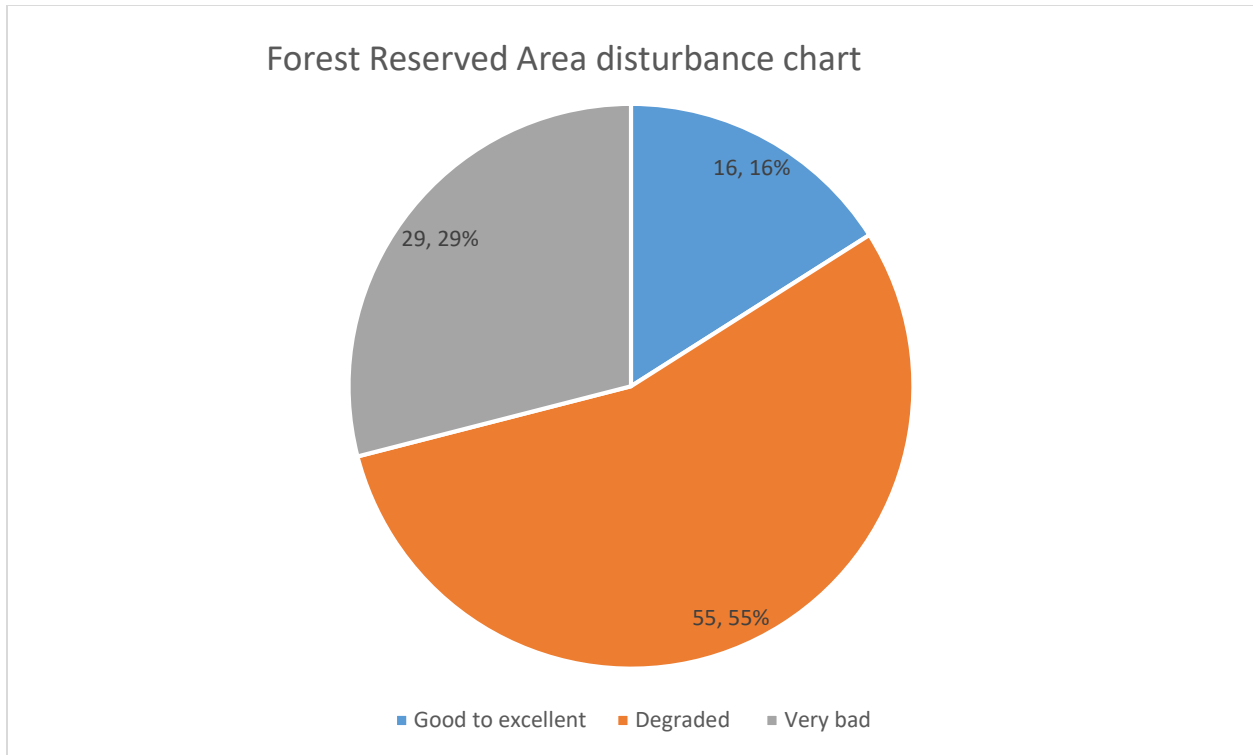


Figure 1. Degree of FRs disturbance

Source: Author’s construct base on stated source.

3.4 Current state of Ghana’s forest

Ghana's absolute forest zone is right now evaluated at 81,342 km², out of this around 17,845 km² are known to be under reservation (Ghana Forestry Commission, 1995). The Government of Ghana understood the need to ensure these rich assets are to be protected for both community and national advancement in this way putting in place regulations, acts and policies throughout the years to reasonably deal with the sustainability of the forest. Forest resource policies made perpetual forest estates, secured water supplies, gave good conditions to development of agricultural crops, and to champion public education and research (Boon et al.,

2009). Notwithstanding the accessibility of these policies, guidelines and interventions, characteristic natural forests are still on a decrease at the pace of 2% per annum (Boon et al., 2009). Untouched forest in 1992 was evaluated to be about 1.5 million hectares across the nation (Marfo et al., 2006). Figure 2 and 3 is a map showing all the vegetation and agro-ecological zones in the country respectively.

Examination by Tropenbos International, Ghana (2007), uncovered the accompanying circumstance as being answerable for the disturbing decrease in the forests cover and resources in the country; overexploitation of timber species, inappropriate forest management systems, poor cultivating methods, population pressure, complex land tenure system, absence of involvement of community, an inconsistent advantages sharing structure, powerless institutions, ineffective of the timber industry, disregarding of set down guidelines, and absence of political will and responsibility. It is assessed that increasing of agriculture and bush fires demolish around 20,000 hectares for each annum of forest reserves in Ghana (Eltringham, 1993). The deterioration of forest resources has cause to the decrease of forestry sector input to the national economy. In 1994, Gross Domestic Product (GDP) and quantum of export proceeds from the timber industry was 6% and 18% respectively (FAO, 2018). This diminished to 2% and 7% in 2007 and 2012 (Ankomah, 2012).

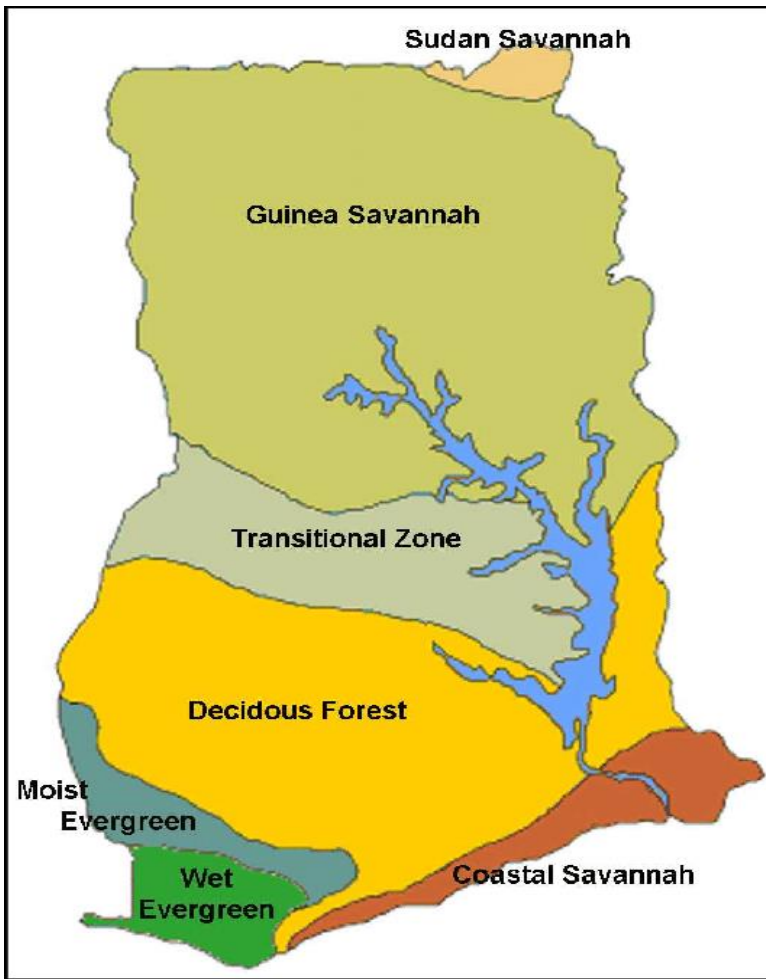


Figure 2. Map showing the vegetation zones of Ghana

Source: (Appiah et al., 2014)

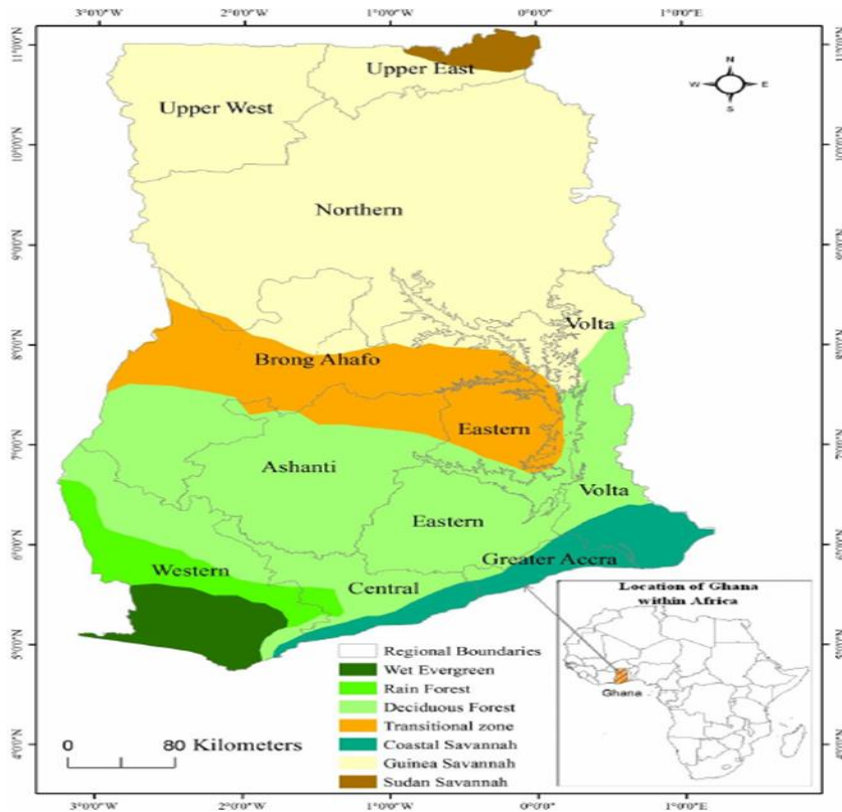


Figure 3. Agro-ecological map of Ghana (Source: Map produced by editors based on data compiled by SRDA 2001).

3.5 Forestry Management in Ghana

Forest resources are vital to a great many individuals, particularly those whose livelihoods to a great extent rely upon them. These resources assume a key role in securing environment and are of colossal significance to the sustainable development of each nation. Forest resources policies and institutions are very sensitive as far as attaining the sustainable forest management is concern. Perceiving the significance of forest resources and the requirement for proper measures to enhance their management and usage in Ghana, different past governments tabled down policies to establish a national forest estate and a timber industry that ensure a full scope of sustainable benefits for the population. Be that as it may, the majority of the forest policies have backslidden to address the key difficulties of forest management in the country (Boon et al., n.d.).

3.8 Forests and national development

At the point when the focus of worldwide turned to the developing countries nations in the mid-1950s, economists were caught not prepared. They had no promptly accessible reasonable model with which to evaluate the economic growth process in these for the mostly agrarian societies. Numerous economists contemplated that developing nations would need to follow a similar way taken by the world's wealthy countries in their change from agrarian to industrial economies. Advancement models depicted this development procedure as a progression of direct stages through which all nations must pass (FAO, 1993).

Natural resources such as forests got almost no consideration in these early models. Rather, advancement systems featured capital development and technical progress as the central point liable for rising earnings and economic development. When all is said in done, forests were a wellspring of land to be changed to more productive uses. While they could likewise be a wellspring of income and foreign exchange, forests were recognized generally as irrelevant in the battle to boost sustained economic development." Forest industries other than pulp and paper were viewed as too little to be significant for industrialization efforts (FAO, 1993).

3.6 Effects of forests on national economies

While most early improvement techniques generally overlooked the forestry sector, there are two vital exemptions. First Hirshman (1958), emphasized the significance of exceptional qualities and forward and in reverse linkages. Hirshman's examination featured significant economic growth linkages of timber, wood and paper producing. Second, Westoby drove a group at FAO to challenge the ordinary way to deal with forestry in the extraordinary chapter of (The State of Food and Agriculture 1962).

The FAO study contemplated that those answerable for setting development priorities were uninformed of the potential supplement of forests industrial-based to development. The report drew on Hirshman's idea of developing focuses, lagging regions and in reverse and forward linkages to establish how the forests (as natural capital) could assume an essential role in promoting economic growth. Among the numerous contentions introduced are the following:

Forest industries depend on a renewable resource that every developing nation have or could make. These industries have significant adaptability with respect to both their extent of

operations and technology; they additionally have articulated in reverse and forward linkages, suggesting significant multiplier impacts on the whole economy. Due to their remote area, forest industries can make advancement poles and give a wide scope of products, including primary necessities, for poor populations. Forest products can fill in for costly imports and can gain significant foreign exchange when exported. Most developing nations are net importers of forest products (trading logs and bringing in higher esteemed products). Internal demand is extending as population develop and incomes increase.

Forests offer many raw materials for local industries and for export. Forest industries have obtained incredible significance in developed countries, giving a renewable raw material to a wide range of enterprises. Capital prerequisites are generally low and labor needs are high in comparison with numerous different industries. Feather more, the investment range is wide, permitting minor investors to start- up businesses. Reaping time is adjustable within a reasonable limit, allowing adaptation to short-term changes in demand, without threat of waste or unnecessary stockpiling issues.

Westoby's investigation pulled in international consideration to the forestry sector. Throughout the following decade, the recurrence and funding for forestry projects expanded considerably and projects were more attentively arranged, documented and advocated than before. Two extra factors persuaded donors to deepen financing. To begin with, market analysis anticipated enormous increments in industrial countries' demand for timber and wood products from the developing nation. Second, forestry projects showed higher achievement rates than alternative kinds of development projects.

Over 10 years after the fact, be that as it may, when Westoby observed how the forestry sector had advanced, he dismissed his earliest vision. In a paper given to the Commonwealth Forestry Association in 1975, he stated that the exploitation of huge tracts of virgin tropical forest had been, for the most part, careless, wasteful and even, disastrous. Westoby contended that almost all operations did not have a significant or strong effect on the economic and social life of the nations wherein they had occurred. Such a large number of forestry projects neglected to add to vital local needs (FAO, 1993).

Many different studies come to identical end results, detailing that forestry projects contributed little to the industrialization development, generated few jobs and minimally affected

the total growth process. In 1980 the Director of FAO's previous Forestry Industries Division contended that: "Forests, in total, are just being mined, taking out the simplest to get and the most exceptionally evaluated trees with no genuine worry for what happens in the later date. For the forests and the people who are reliant on them, the main clear enduring impact is retrogression" (FAO, 1980).

By the late 1970s, changes in the total idea of economic advancement had initiated a different role for forestry. Experience acknowledged that advancement help methodologies concentrated on advancing industrialization were not working sufficiently. Poverty increased consistently in numerous nations, despite the fact that their economies extended at a solid pace. To address this issue, development specialists directed their concentration toward poverty reduction, generation and improved equity.

Besides, policy-makers started to perceive that natural resource degradation fervently blocks economic development and poverty alleviation. Sustainability continuously rose as the significant development principle. Simultaneously, natural resource and environmental economics blossom, reinforcing systematic strategies and upgrading macroeconomic advancement models (FAO, 1993).

Today, forests are seen as an essential piece of national economies, Forests add to improvement and development from various perspectives, for example as natural capital, production inputs and environmental goods. In any case, forests also hold down and limit development. In certain countries, forests are seen as obstructions that must be evacuated before productive activities are achievable. For instance, previously, land tenure legislation in numerous nations expected habitant to evacuate all trees on a package before possession rights were acknowledged. In different conditions, forests are treated as a rare natural resource that must be shielded from a wide range of exploitation. Many components help to clarify how forests both add as far as possible and limit policy choices for national development strategies.

To start with, roads, commerce and agrarian populations have entered and settled a significant part of the world's forest land; less forest areas remain unused or detached from national interests. Forest territories have experienced "agrification", including the utilization of forests and trees in farming systems, and the forming of agricultural mosaics within forest systems. Forests are progressively managed for their scope of resource flows, their capacity to help rural well-being

and their ability to champion industrial opportunities, Forests give huge, yet unique, scopes of products and services for essentially all patterns of human settlement and livelihood. They are not touching piece of timber past the frontier, however are dynamic factor of life everywhere (FAO, 1998).

Second, economic development procedures are starting to combine the capital values of forests in national policies and programmes that change forest stocks, qualities and distributions. Forests are currently broadly recognized as both productive capital stocks and as segments of open infrastructural systems. As ecological analogs of industrial capacity and physical infrastructure, forests are entering the focal conditions of macroeconomic development, regularly with new meanings of what the forest is and does. Advances in national bookkeeping make it conceivable to integrate unequivocally the capital value of forest resources as productive stocks, and to evaluate the impacts of changes in them on national productive capacity.

Ordinary national accounting systems exaggerate sustainable income in two different ways. To begin with, the accounts ignore depreciation of forest and other natural capital. Second, the expenses of alleviating or counterbalancing the reactions of resource depletion (for example anti-sedimentation measures in a deforested watershed) are not subtracted from national income. This passes on an inappropriate message: that income gained from exhausting forest resources can proceed until the end of time.

A few nations are building up new accounting systems that measure the devaluation of forest resources in abundance of their regenerative limit (both quantitative and qualitative). For example, the French system shows exchange offs between the economic, ecological and social elements of natural resources. This system, known as the "natural patrimony accounts", records separate records for forests, wildlife, water and soil (Petersen & Sandhövel, 2001). As infrastructure, forest systems offer types of assistance that would some way or another require capital expenditures or decreases in human prosperity. For instance, by storing water, regulating flows, ensuring channels and purging polluting influences, forests design a structure of hydrological services much the same as structures for transportation and communication. Late economic strategies make it conceivable to account these infrastructural services on a national rather than project scale.

Third, forests speak to gainful resources that are progressively utilized as a methods for achieving national development goals, including equity, stability, investment and growth. Programmes in community forestry have convert fundamental to agrarian changes that try to manufacture increasingly productive relations between rural communities and public lands. Community forestry programs are extensively executed to reinforce investment incentives and civic participation in the development and utilization of forests and trees (FAO, 1998). Fourth, forests have developed as critical factors in economic and political relations among countries. For instance, forests have taken on international policy measurements through their roles in both economic and environmental trade. Forest conditions progressively influence national reliance on processing capacity, wood products and international trade. Trading patterns develop exceedingly complicated as countries move emphasis from primary to secondary and tertiary types of production, upsurge their purchasing power and differentiate their consumption prerequisites.

Besides, changes in the degree and quality of forests have become the subject of worldwide environmental concerns. Changing forest conditions speak to factors in biodiversity, relations among industrial and non-industrial countries which involve and utilize a coequal worldwide climate as a carbon source and sink and articulations of reliance between countries. Such developments invent pressure on national governments to think about forests in the domain of international relations. A few countries are as of now moving towards international agreements that tie matters of economic and environmental trade together in the service of bigger, worldwide interests.

For these reasons, national forest politics and policies have advanced out of a tight sectorial right to enter pluralized standard political interests including exceptionally different groups. All through the world, forests are the subject of conversation among articulate groups of populists, industrialists, statistes, internationalists, consumers, environmentalists, farmers, indigenous forest communities, city inhabitants, researchers, educators and humanists. The points of view and requests of these politically assorted groups have multiplied, setting a huge strain on the foundations of forest policy that developed when forests implied just timber belonging to the state and were constrained by a little professional cadre. These contending pressures, joined with a more extensive comprehension of the significance and multifaceted nature of forests' non-wood services and values, are firmly impacting forestry policy today (FAO, 1993).

3.6 Forest management in a changed policy environment

Forest policies around the globe have experienced an expansive change based, among different elements, on the acknowledgment of the developing assortment of goods and services administered by forests and trees at the local, national and worldwide levels. Forests are no longer observed as just wood production or extraction plots however are esteemed for non-wood forest products and a scope of ecological and social services like biodiversity preservation, carbon stockpiling and sequestration, soil and water preservation, fitting out of work and recreational chances and protection of natural and social legacy FAO, 1999. This change has influenced the institutional and organizational landscape wherein forests are overseen and used, with public forestry organizations expected to seek after an expanding variety of goals. At the macroeconomic level, the procedures of globalization and market progression throughout the last 10-15 years have expanded the complexities of policy amend (Davies and Richards, 1999).

Endeavors to lessen inflation and spending plan deficits regularly under structural alteration have likewise decreased the limit of the state to keep up administrations to screen and control the utilization of forest resources and embrace fitting examination and augmentation. Exchange and swapping scale liberalization has adjusted the upper hand of residential timber enterprises, and instigated private, and frequently foreign, investment. State own institutions have been deregulated and new players, similar to make NGOs and pressure groups of different sorts, have showed up. Developing enthusiasm for managing forests more 'sustainably' has prompted changes in strategies and policies on timber concessions, property rights and forest certification. The duties of institutions and how they define motivations for resource utilization turned into a focal issue in the post-Earth Summit stage where numerous tropical nations assessed their enactment. This brought about a developing significance of NGOs, people group based associations and joint forest management courses of action in non- industrial forestry service; and governments have come to perceive the confinements of state regulatory capacity (Petersen & Sandhövel, 2001).

The consequences of the change endeavors are blended, both as far as expanded operational efficiency and improving maintainability of forest resource use. Issues identified with authoritative affiliation, the partition of commercial, administrative and service functions, decentralization, and community based forest management, income sharing and assortment, research and augmentation,

training and education, marketing and donor co-ordination have been tended to in various manners, depending on a limited degree on the predominant political, socioeconomic and biophysical condition in every nation (Petersen & Sandhövel, 2001).

3.7 Influence of forest policy on the development of rural communities

In numerous nations, individuals living in rural areas have lower incomes and are usually less prosperous than those in urban zones. Hence, rural occupants settle to acquire impact of forest resources (both timber and NTFPs) without renewing them, rendering a lot of forest to various degrees of degradation. In this way, governments frequently endeavor to advocate rural development through the improvement of forests resources (Michon et al., 2013). In any case, 'do governments augment revenues from this sector? Also, in the event that they do, 'is there an assurance that they would be utilized for rural development'?

In the interim, “domestic” or “rural” forests are particular from traditional forest and have truly been ignored by the forestry sector and affected by forest policies and administrative systems. Rural development policies in developing nations be that as it may, regularly center on meeting increasingly fundamental needs (Danielson & Hammarskjöld, 2000). For instance, FAO places extraordinary emphasis in its policies and projects on expanding food security and improving access to food, since this is a high need for several developing nations.

Various governments and worldwide agencies likewise stress the significance of giving access to clean water and fundamental educational services, medical care, maintenance of ideal conditions for agricultural crops, state public education, and research (Ahenkan & Boon, 2010). At the end of the day, on account of the idea of rural areas in many developing nations, there is frequently a need to look beyond basically expanding income and employment.

The duty of governments in rural development in developing nations is very unique to that in developed nations. Due to the fact that weaker tax base are usually generated in most of developing nations, direct help to rural development (in the form of grants and subsidies) is significantly less normal. Or maybe, governments will in general spotlight on minimal effort and no-cost policy choices to attempt to meet their rural development goals.

Therefore, for instance, direct appropriations and grant schemes are uncommon, however loans, credits, tax incentives and exceptions from government levies or charges are generally progressively normal. In certain nations, substantial government extension services and additionally the arrangement of free devices and materials are utilized to indirectly subsidize forestry and agricultural development in rural areas. Another no-cost choice that is supported in many developing nations is the utilization of regulation that requires private-segment organizations to participate in rural development exercises when they are conceded access to natural resources for commercial use. It is very regular for forest concessionaires to be required to construct infrastructure as well as offer a few types of assistance to local communities in the territories wherein they work.

The primary advantages to rural areas from forestry advancement have all the earmarks of being in the territory of non- market benefits rather than income and employment. This recommends, to augment rural development benefits, local communities must be personally associated with the protection and management of their surrounding forest resources. Apparently, this might be simpler to accomplish where forest resources are of moderately low value (for example degraded forests instead of commercially important forests).

3.8 Participation of rural communities in forest management

Participatory methodology Modern arranging depends on interest: albeit public overseers assume a key responsibility in a way when setting out environmental targets, ecological and sectoral objectives can't be set only by the state on account of scientific vulnerabilities and social worth decisions which the objectives assimilate. Despite what might be expected, they must be advanced in a social procedure that leaves the duty regarding final dynamic with policymakers. Quality and the management issues are bound to be comprehended through participatory strategies additionally in observing, for example, transect walks, mapping to show present and former land use, water sources, and so forth, rating of species by wealth or significance, courses of events indicating chronicled changes in precipitation, pollution levels, waterway flows, soil richness, forest composition, and so forth, what's more, seasonal calendars. Participatory techniques can likewise reveal some insight into issues of access and property rights systems. The test on national level is to give least standardization with the goal that information can be totaled on district level

and made valuable for national policy making. Various activities to create initiatives to evolve barometer for sustainable forestry have advanced in the most recent decade however, lamentably, they are regularly determined by scientific concerns as opposed to offsetting information needs with usage real factors in a participatory background (Petersen & Sandhövel, 2001).

The Suhuma Forest Reserve has a 10-year the management plan, which was set up in 2010 by the Sefwi-Wiawso Forest Services Division. As per the Division, forest management plans are arranged at regular intervals of 10 years. These plans layout the different programs and activities to be completed inside the 10-year time span. The motivation behind the present idea is to: a) keep up the defensive capacity of the forest with due respect to the upkeep of appropriate climatic conditions for agricultural crops; and b) increment the extent of economic timber species to fulfill the demand for timber on yield sustainability grounds. An audit of the plan uncovered that the Forest Services Division didn't put into consideration the participatory of fringe communities as far as the management of the reserve is concern. As indicated by the Forest Officers talked with, it was in 2010, after the plan had been drawn that the Forest Services Division chose to include the fringe communities into the management of the reserve.

The eagerness of the fringe community individuals to work together in the safeguarding the reserve caused them to acknowledge the Forest Service Division's proposition to setup committees to help with managing the reserve. These councils were framed in practically all the fringe communities of Suhuma Forest Reserve. The advisory groups had no fixed enrollment albeit as per the Sefwi-Wiawso Forest Services Division, four individuals for each group were required for the starting phase of the committee's construction and operation. A portion of the committees (in Bopa, Kofikrom, Asiekrom, Betenase, Adiembra, Amafie and Bedii people group) were over-sign up, which was credited to the enthusiasm of the individuals from the Traditional Council and to be individuals who form part of the committees.(Acheampong et al., 2018)

Preceding the development of the advisory groups, the Forest Services Division approached the Traditional Councils of every fringe communities and introduced their proposition to them. The Council Members at that point made open declarations in their various communities. The Forest Services Division expressed unequivocally that the work was volunteering and that individuals will not be paid salaries. A date for the establishment of the Community Forest Committees was booked and work force from the Forest Services Division went to the different

communities to enlist the groups. Individual distinguishing proof cards were given to the individuals after which they were initiated on the most proficient method to: a) teach community individuals on the need to ensure the preservation and protection of the reserve, b) cautiously go up against illegal chain saw operators, c) track unlawful operations in the forest and d) prevent out of control fires from spreading. Every one of the committee individuals was given a couple of wellington boots, waterproof shell, cutlass, and an endorsed T-shirt to be worn whenever they are policing the reserve. As indicated by the individuals from the Community Forest Committees, the personal protective equipment upgraded their work. Nonetheless, since the beginning of the undertaking (in 2010), this personal protective equipment have been given out once. As indicated by the Forest Services Division, the individuals from the Community Forest Committees have been replenish, but infrequently, on their jobs and how these jobs are to be performed (Acheampong et al., 2018).

3.9 Duties of rural communities in Forest management

The individuals from the Community Forest Committees were required to perform three duties. First is to aid the avoidance of bushfires. The individuals from the Community Forest Committees help the forest guards to make fire belts around the reserve during the dry season. As indicated by some forest guards, occasionally the non- members from the Community Forest Committees aid the formation of fire belts since they (the non- members) likewise enjoy the advantage from the reserve. All the non- members from the Community Forest Committees were talked with in the review that revealed that the protection of the reserve is the aggregate obligation of all the fringe communities whether one is a piece of a Community Forest Committee. Furthermore, the individuals from the Community Forest Committees were to teach other community individuals on the need to ensure that the reserve is protected. They expressed that the save is the property of the communities. It is, in this way, the communities' obligatory to secure and protect it. (Acheampong et al., 2018)

Furthermore, the individuals from the Community Forest Committees made it clear that through occasional discussions, they had the option to talked with, and sensitize their companions and neighbors on the need to secure and protect the reserve for continued advantages. Conclusively, the individuals from the Community Forest Committees were to help with following

and detailing illegal operators. As reported by the committee individuals, when one person hears a chainsaw operating, the person in question should warrant others to begin investigation. Where the chainsaw operator is working unlawfully, the council individuals stand up to him in a friendly way. Subsequent to inspiring satisfactory data about the operator, they at that point prompt him on the method to follow to acquire a license to work in the forest. Following they withdraw from the scene; they report the occurrence to their superiors. When there is a Forest Guard close by, he rapidly comes over with others or a police to capture the unlawful operator(Acheampong et al., 2018). From the study, all the advisory groups have held up at any rate a report about criminal operations in the reserve to the Forest Services Division.

3.10 Forest Policies in Ghana

The historical backdrop of forest policies and resources management in Ghana goes back to 1906 when enactment was ordered to control the felling of commercial tree species and the making of the Forestry Department in 1908. The division and reservation of the forest estate was to a great extent finished by 1939 and a forest policy was accepted in 1948 (Boon et al., 2009). From that point forward, a persistent policy of selection, separation, reservation, protection of water supplies, support of positive conditions for cultivation of agricultural crops and the advancement of research and public education have been enthusiastically sought after.

Notwithstanding, the greater part of the early forest policies basically underscored a sustained supply of timber for the wood industry and advocate over- exploitation and a possible death of unreserved forests. As a result, before the finish of 1978, the Government put about 3,267,250ha of forests under fixed forest estate. Moreover, a lot of policies and attempted remedies were proposed by government and its agencies, for example, Forest Commission Act of 1960; forest improvement support Act of 1960; Concessions Act of 1962; Forest law for the protection of forests including reserves of 1972; Trees and timber (chain saw operation) regulation of 1983; Administration of land (amendment) level of 1984; Forest products assessment Bureau Law of 1985; Forest protection (amendment) Law of 1986; Control and avoidance of bushfires Law of 1990 and Trees and timber (chain saw operation) regulation of 1991 as aides for forests resources management in the nation Forest (Ghana Forestry Commission 1994). These policies and related laws were contained in different bureaucrat documents and vested in explicit Ministries and state

agencies for execution. The office liable for forest resources management in Ghana is the Forestry Commission which was built up under Act 405 - Ghana Forestry Commission Act, 1980 – to facilitate the activities of the forestry sector institutions, to be specific: the Forestry Department, Department of Game and Wildlife, Forest Products Research Institute and Ghana Timber Marketing Board. Section 6 of the Act commanded the Commission to control and manage the usage of all forestry and wildlife resources of Ghana and furthermore facilitate the policies according to forest resources (Boon et al., 2009).

Ghana, in the same way as other tropical nations, keeps on losing its remaining closed forests at a disturbing rate. The territory of closed forest has diminished to under 25% of its original value and now exists in divided patches evaluated to be around 20 to 524 km². Somewhere in the range of 1990 and 2005, Ghana has lost about 1.9 million hectares of forest or 26 percent of her forests cover (mongobay.com); the yearly deforestation rate is 2.0%. The Government found a way to address the deforestation issue by presenting the Ghana National Plantation Project to plant 20,000 ha for each annum. Most of the forests have lost their pristine interior habitats that are demanding for the protection of defenseless species.

The elements causing the depletion of the forests incorporate extreme legal and illegal logging, impractical cultivating methods, annual bushfires, surface mining and infrastructural improvement. Underlying these deforestation main impetuses are forest policy failures, unreasonable forest fee systems, outer costs of timber, frail institutional structures, and population pressures. (Boon et al., 2009).

3.11 Dependence of rural communities on forest resources

The research confirms that the vast majority of the rural communities in the forest zones in the Western Region, notably depend on the forest resources (Non-Timber Forest Products) for their activity. Individuals from these communities for the most part are usually farmers and fishermen who have settled in the community and depend upon the forest and sea for their occupation for quite a while. According to (Voth, et al., 1999), a community possesses all the necessary qualities to be forest subordinate if lion's share of its economy emerges from the forest and an enormous segment of the labor force is into cultivating. These in this manner show that an

enormous segment of the larger population in the forest zones are farmers asserting the reliance of these communities on forest and its benefits for their occupation.

The results revealed that forest communities right now enjoy most benefits from the forest resource around them as far as food is concern. It induces that forest communities acknowledge about the prompt advantage of the forest with close to zero knowledge about the other inferred benefits or service they adore from the forest. This similarly falls under one of the weaknesses of forest reliance communities, that is, they make low enthusiasm for human capital to extend their pay and improve their activity (Voth et al., 1999, Johnson and Stallman, 1994). Items, for instance, timber, fuel wood, medication and meats were usually observed to be gainful to the communities. The paramount benefit in three level positioning, obtained from the forest resources by the communities was food. This result certifies the disclosures of Whiteman (2000) that rural development in developing countries by and large has to do with food security. Items from timber were situated at third level. This induces that, meeting the key needs of the communities will go far to spare the timber assets of the forest. Timber items typical to the three regions audited in the scrutineering were "Odum" (*Milicia excelsa*), "Mahogany" (*Khaya ivorensis*) and "Framo" (*Terminalia ivorensis*). The ascent of Teak plantation shows the level of agroforestry determination in the communities. It further construes the affirmation of the benefit of the tree species in addressing their need. It was certified by the Teak plantation on ranch sizes from 101-200 ha which were completely obsessed by individuals.

Economic reformation has been represented to be troublesome in forest dependent communities for the most part in view of the worldwide power and organizations that have enthusiasm for the assets conveyed in their domain (Voth et al., 1999). As demonstrated by (Pouliot et al., 2012), agricultural territories and non-forest environment are more symbolic to provincial family units than forest. Salary from agribusiness or cultivating is incredibly higher appeared differently in relation to what the communities gain from the forest (Whiteman, 2000). These disclosures in West Africa (Burkina Faso and Ghana) was represented to result from the exorbitant and unjustified forest approaches (Pouliot et al., 2012).

About 85% of the respondents envision that the forest in their communities has a spot with the legislature and is the accountability of the government to oversee it. They see the government to be the gathering of rulers or political pioneers who pick what should be done in the forest.

3.12 Promoting rural development through Ghana's national forestry policy

A significant number of the forest communities in the Western region notice about the national forestry approaches in Ghana. Managing forest has become their oblivious obligation as a significant part of their lives (Michon et al., 2013). They realize that national forestry approaches are to save the forested areas and shield the people who benefit by it. They concur that unlawful logging happens around their communities and the methodologies will help with ending or decline the pace of deforestation. Nearly everybody from the forest communities like what the national forestry methodology depend on and feels that it must be executed. Forest when protected by these systems will improve rural economies by guaranteeing and overhauling crop production (Lust & Nachtergale, 1998).

Dominant part of the individuals see that rural advancement has a direction on forestry improvement. Forestry system apparently had the capacity to improve the management of the forests. Communities' commitment towards national approach plan and use was under 30%. A base up based system will ask community's people to suit and manage the forest. Huge numbers of the individuals see that a rural community joining in the national forestry approach plan will shape the anticipated age and revamp their economy (Michon et al., 2013; Whiteman, 2000; Voth et al., 1999).

National forestry policies strategies center around the assets protection in lieu to the advancement of the neighboring occupants that have a critical assignment to do in ensuring the protection of the forest. The key forest asset benefitting communities are climate dependents. The responsibility of the forest to the microclimate propagating the production of food can't be overemphasized. Yet, by far most of the respondents have confined training, the benefits from forest might be the reason behind the wide affirmation of the national forestry policy strategy and the need to make modification for rural involvement in the use system. Base up approach of forestry advancement have been more and more efficient diverged from the top-down system which is starting at now being utilized in Ghana (Whiteman, 2000).

The right utilization of forest assets can upgrade the livelihoods of the communities. Regardless, the dependent of forest communities on agribusiness and non- forest condition must be considered in proposing these strategies that will imitate the economies of the forest communities (Pouliot et al., 2012, Whiteman, 2000, Voth, et al., 1999). Training, awareness of

policies and bridging of markets sectors of forest products to the communities will ask the occupants to own the forest and afterwards ensure its protection.

Looking over the neighborhood capacity of both economic and social benefit of forest will support in the fitting idea and benefitting sharing from forest assets to reform rural development (Slee & Snowdon, 1999). Non-Timber Forest Products (NTFPs) and redress of forest ecosystem services have been represented as probable frameworks of bettering livelihoods in rural settings especially those that exist in or around forest preserves (Nikodemus & Hájek, 2015). In any case, the national forest policies disregard to address its aspect in decreasing poverty rural communities (Ahenkan and Boon, 2010). A fundamental gander at NTFP's quality lead to the establishment of employments through entrepreneurship and start-up supports from government and other NGO's excited about forest protection. Possible modification portions of Ghana's national forestry policy for socio-economic improvement.

Forestry policies must be continuous and offer better open entryways for the affirmation and headway of rural forests, particularly through rural strengthening segment like supporting NTFPs and impartial sharing of advantages (Michon et al., 2013; Ahenkan and Boon, 2010). Forestry policies when justifiable may add to the rural advancement in developing countries (Whiteman, 2000).

The execution of the national forestry policy and strategy needs to recognize the media of circumspection since the community individuals observed that the policies are satisfactory and will achieves the advancement of their domains and upgrade their livelihoods. All things considered, the respondents concede that the best system for parting with policy information to them was through community alertness by methods of media center announcement, community training and information fans. This medium makes them feel some inclusion of the whole methodology as it will in general be considered as a base up approach since the community individuals can add to the information being passed to them on one on one bases personally (Michon et al., 2013; Whiteman, 2000). Open and far reaching methodology despite its detriments of conflicts has shown to be dynamically productive in the execution of forest policies (Voth et al., 1999). Through the community process of sending information, associations can be built up and empowered to accept obligation in the diverse forest communities to achieve sustainability.

4.0 Methodology

The methodology adopted for this study was a review of literature that is relevant to the topic of this study. This literature review sourced documented studies mainly from Science direct, Research Gate, and google scholar. Some institutional web resources were also sourced for this review. Articles for this review were selected with the focus of forestry policy influence on Ghana. In all twenty-eight articles and web resources were considered for this review.

Data on the community assessment of forest resources and the profitability of the forest resources to community members was sourced from the Food and Agriculture Organization (FAO). This was information on forest resource utilization in Ghana. The data obtained from the data source were the forest sources that the community assessed from the forest, the following were the benefits that the community derived from the forest; food, medicine, timber, fuel wood and meat all in a percentage wise (FAO, 2005). The profitability of the forest resource to the community members were also evaluated, that is how these forest resources profit the community members as far as their livelihood is concern. In terms of food, timber, medicine, fuel wood and meat as the profit they gain from the forest (FAO, 2005). Statistical method was used to analyze the data. This information was used in developing charts (pie charts and bar charts) to determine what the community obtained from the forest in percentage wise and also how these resources profit them. The study was done for forest policies of Ghana with a focus on the forest policy's influence on environment on the people of the Western region of Ghana. This is a region with profound forest resources. Three of these forest were considered in this study.

4.1 Study Area

The Western Region is situated at the extreme south-west corner of Ghana (Fig.1), and forms part of the Ghana High Forest Zone (GHFZ), which establishes some portion of the Upper Guinea Forest square (Ofori and Attuquayefio, 2010a). Region has an area of 23, 921 km², and covers 10% of Ghana's total land area. The Sefwi Wiawso District (6o 00' – 6o 30' N, 2o 15' – 2o 45' W), one of 12 districts in the Region, has a zone of 2,397 km² and is situated inside the wet and moist evergreen forest zones of Ghana, with the most broad forest cover in the country. The climate is equatorial monsoon, with month to month temperatures going between 20°C (August) and 34°C (March/April), and mean annual temperatures ranging from 24°C to 29°C. Mean annual

precipitation ranges from in excess of 2,000 mm in the south-east to 1,200 mm in the north-east, with relative humidity somewhere in the range of 70% and 85% in the dry and wet seasons, separately.

The vegetation is commonly wet semideciduous forest (Hall & Swaine, 1981), overwhelmed by the tree species *Celtis mildbraedii*, *Baphia nitida*, *Nesogordonia papaverifera*, *Microdesmis puberula*, *Khaya ivoriensis*, *Daniella ogea*, *Dacryodes klaineana*, *Strombosia glaucescens*, *Dispyros sanza-minka* and *Dialium aubrevillei* (Boni et al., 2004). The forest habitat has, be that as it may, been attacked by the savanna grasses *Panicum maximum* (guinea grass), *Pennisetum purpureum* (elephant grass) and the herb *Chromolaena odorata* (Acheampong weed). Faunal assorted variety and abundance have been dreadfully diminished through bushmeat over-exploitation and environment devastation because of uncontrolled logging. Figure 4 below is a map that represents the study area.



Figure 4. Map of Ghana showing the study area.

4.2 Forest Reserves in the Western region of Ghana

The dense forests, which used to cover the vast majority of the District, are currently commonly restricted to six forest reserves, one of which, Tano-Ehuro, has been totally degraded.

4.3 The Suhuma Forest Reserve

The Suhuma Forest Reserve is located within two administrative Districts, namely Sefwi-Wiawso and SefwiAkontombra districts. The reserve falls within Latitudes 5°56' N and 6°11' N and Longitudes 2°21' W and 2°36' W and is sandwiched by approximately 45 communities. The Suhuma Forest Reserve with total area of 359 km² (about 15% of District land), is the District's biggest and most seriously logged forest reserve (Ofori & Attuquayefio, 2010). Twelve (12) of

these communities have Community Forest Committees, which were formed by the Sefwi-Wiawso Forest Services Division. Their role is to assist in the management of the forest reserve.

4.4 Boin Tano forest reserve

Boin Tano Forest Reserve is a nature reserve situated in the western region of Ghana. It was set up in 1968. This site, which is 129km² is rich both in faunal and botanical species. The Boin Tano Forest Reserve is found just five degrees north of the Equator and around 50 km² north of the Gulf of Guinea in Atlantic Ocean, in this way giving it a warm and moist atmosphere. Grasslands blended in with shrublands and forests dominate the reserve. Several unique species live inside this secured area and its boundaries (protectedplanet.net, 2014).

4.5 Ben West Block Forest Reserve and Bonsa River Forest Reserve

The two forest reserves reviewed were the Ben West Block Forest Reserve (FR1) and Bonsa River Forest Reserve (FR2). The FR1 is found northeast of the center mining area and secured a territory of 161 km². It involved both primary and mature secondary forests in Moist Evergreen Forest. Dominant timber tree species were *Heritiera utilis*, *Piptadeniastrum africanum*, *Cynometra ananta*, and *Celtis milbraedii*.

The FR2 is found northwest of the center mining territory and covered an area of 22 km². The vegetation included disturbed moist evergreen forest with primary and mature secondary forest. The degraded forest is colonized by *Musanga cercropoides*, *Alchornea cordifolia* and *Chromolaena odorata*, with prevailing trees including *Entandrophragma olivieri*, *Celtis milbraedii* and *Piptadeniastrum africanum* (Ofori & Attuquayefio, 2010). Figure 2 shows the two forest reserves that had no mining influence, yet are at reachable stretch from the center mining area (Owusu et al., 2018).

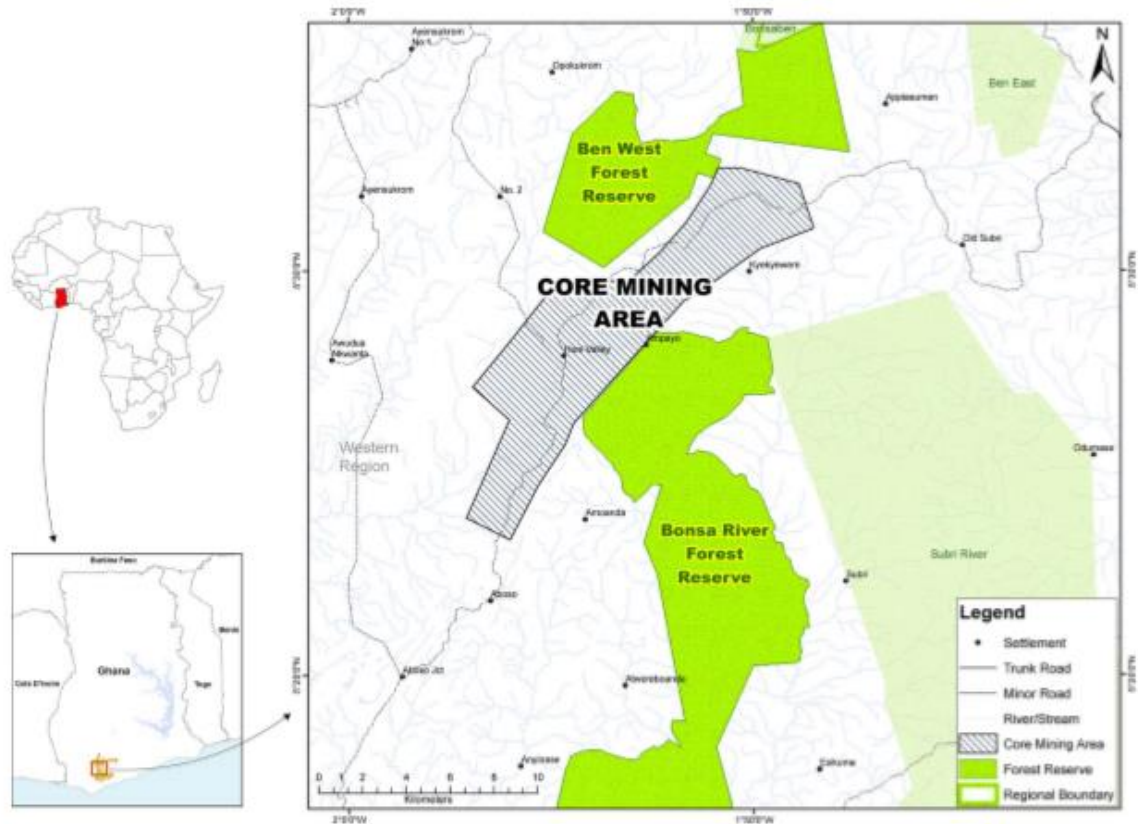


Fig. 1. Map of study area.

Figure 5. Map showing two forest reserves in the Western region.

Source: (Owusu et al., 2018)

5.0 Results

The research outcome of how the national forests policy of Ghana influences and impacts on the people living in the rural forest communities of Western Region regions of Ghana and how to obtain benefit from forest assets in sustainable manner. The forest in these regions gives a wide scope of economic and social advantages to the local people in these communities. These incorporate contributions to the general economy – for instance through employment, processing and commerce of forest products and energy – and forest sector investments. They additionally incorporate the facilitating and protection of locations and landscapes of high social, spiritual or recreational worth. Keeping up and improving these functions is a vital piece of viable or sustainable forest management.

Monetary terms is how normally economic benefits are being measured and this includes income from the employment sector, the value of forest goods and services in terms of production, national economy contribution from the sector. The economic sustainability can also be checked by means of measuring the profitability of the forest enterprises or the investment level (FAO, 2005)

5.4 Knowledge and relevance of the National Forestry Policies

5.4.1 Awareness of the National Forestry Policies and Regulations

A similar research conducted in the Brong Ahafo region in the forest communities stated that the awareness of forest policies, regulations and laws in Ghana was at a very high percentage respondents shown in Figure 6. Awareness level for the following policies were; national forestry policy - 77.8%, chainsaw operation regulation of 1983 and 1991 - 77.8%, and bushfire prevention law of 1990 - 78.9%. About 20% or less did not know anything about the national forest policy and chainsaw operation regulation and 10% were also not aware of the bushfire prevention law.

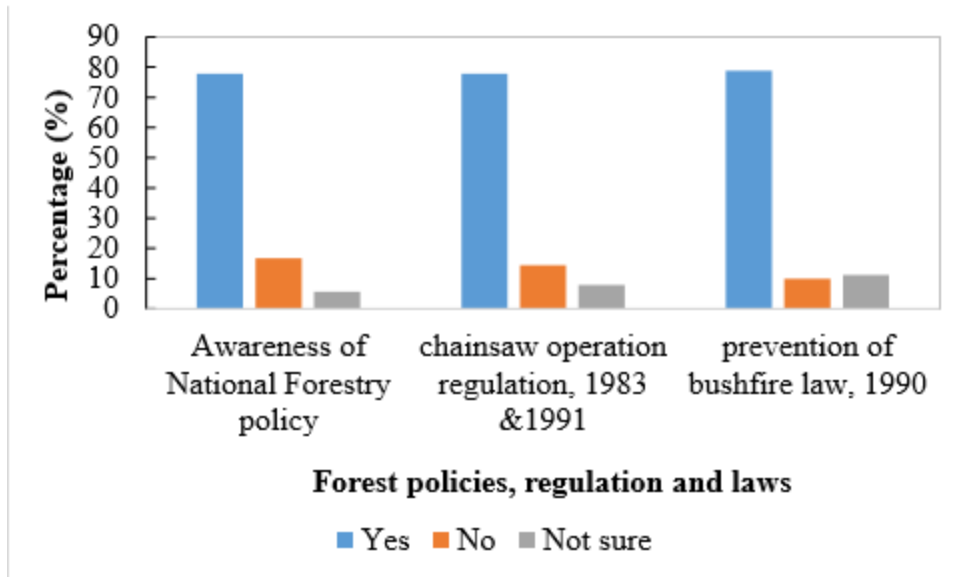


Figure 6 Awareness of forestry policy, regulations and law
Source: (Author plus Isaac Nyarko Diploma thesis)

The research also shows that the respondents that connect the forest policies and perceive it to be necessary to use the policies were almost 80% as described in the figure 6. The people who don't appreciate the idea of national forestry policy and those that are not sure of the policy were some up to about 10%. The main idea for connecting the national forestry policy were; prevention of bushfires and wildfires, maintaining law and order, conserving the forest, protecting the farms in the forest areas, benefits of climate change and attracting government incentives for the protection of the forest. Concerning accepting and implementation of the national forestry policies identical reason was used (figure 7). Inclusion were prevention of illegal logging in the forest communities and to promote developmental projects in the forest communities.

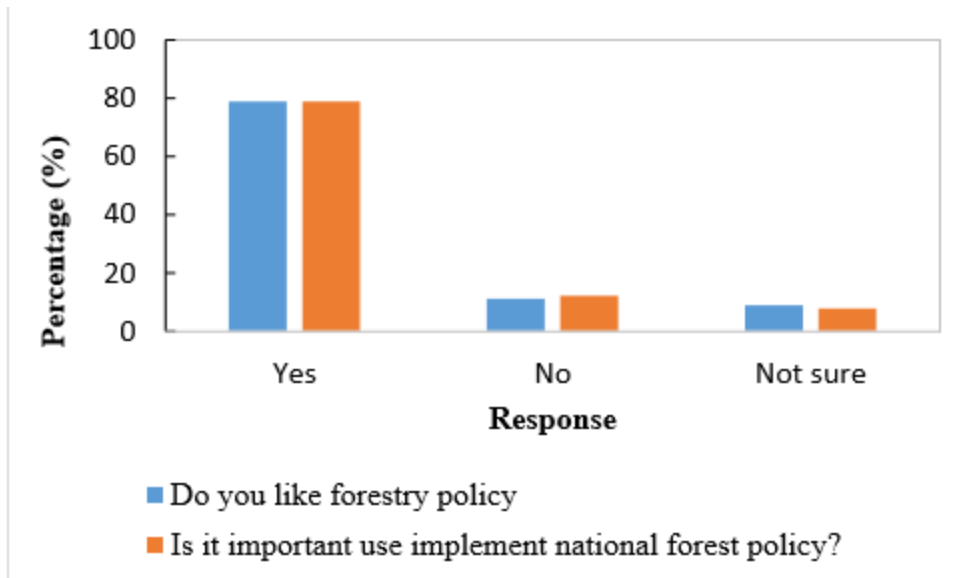


Figure 7 Acceptance of national forestry policy

Source: (Author plus Isaac Nyarko Diploma thesis)

5.5 The role of National Forestry Policies in the Economy of Forest Communities

5.5.1 Impression about forest policies and Economic Livelihood of People

Figure 8 shows the impression of people concerning the national forestry policies and their living condition. About (64.4%) of the people agree that forest policies will contribute to improve the development to their communities, 20% of the people disagreed, whereas 15.6% were not sure if the national forestry policies has something to do in their livelihood. The impression that national forest policies have the tendency to improve forest management was agreed by 68.9% and also 13.3% disagreed. Notwithstanding 70% of the people agree to the impression that if the enforcement of the forest policies in a consistent manner can help to protect water supplies that is (rivers) and also to sustain proper conditions for agricultural crops cultivation, 17.8% disagree with this perception while the rest of the people did not know their stand concerning this impression figure 8. It's important to know that 53.3% accept the national forestry polices does not affect their income. Just 28.9% people said "yes" in that it is possible to embrace income increase if there were no laws correcting the right way of using the forest but 17.8% were not sure of their stand

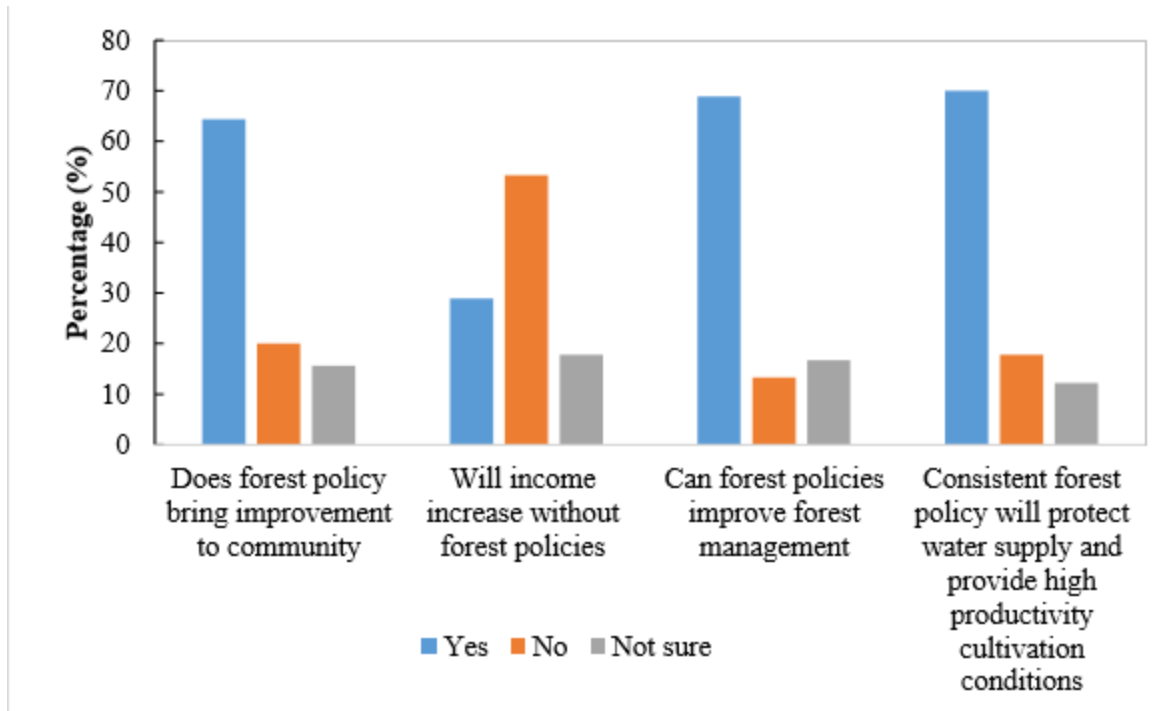


Figure 8 Impression on the link between forest policies and living standard condition

Source: (Author plus Isaac Nyarko Diploma thesis)

5.1 Forest Resources Accessed by Community Members

Figure 9 shows information acquired from the investigation indicated that food was the most paramount advantage communities picked up from the forest around them. Forest assets profiting forest communities in this examination are appeared in figure 8. One recent research work done in the Brong Ahafo region of Ghana indicated that about 88.9% obtained their food from the forest. Just 2.2% referenced natural air as advantage they picked up from the forest. Different advantages from downward procedure were medicine, lumber, fuel wood and meat. About 70% of the respondents said that these assets are productive while 23.3% believed them to be unrewarding. The individuals who didn't know whether the assets from the forest were beneficial framed 6.7% of the respondents.

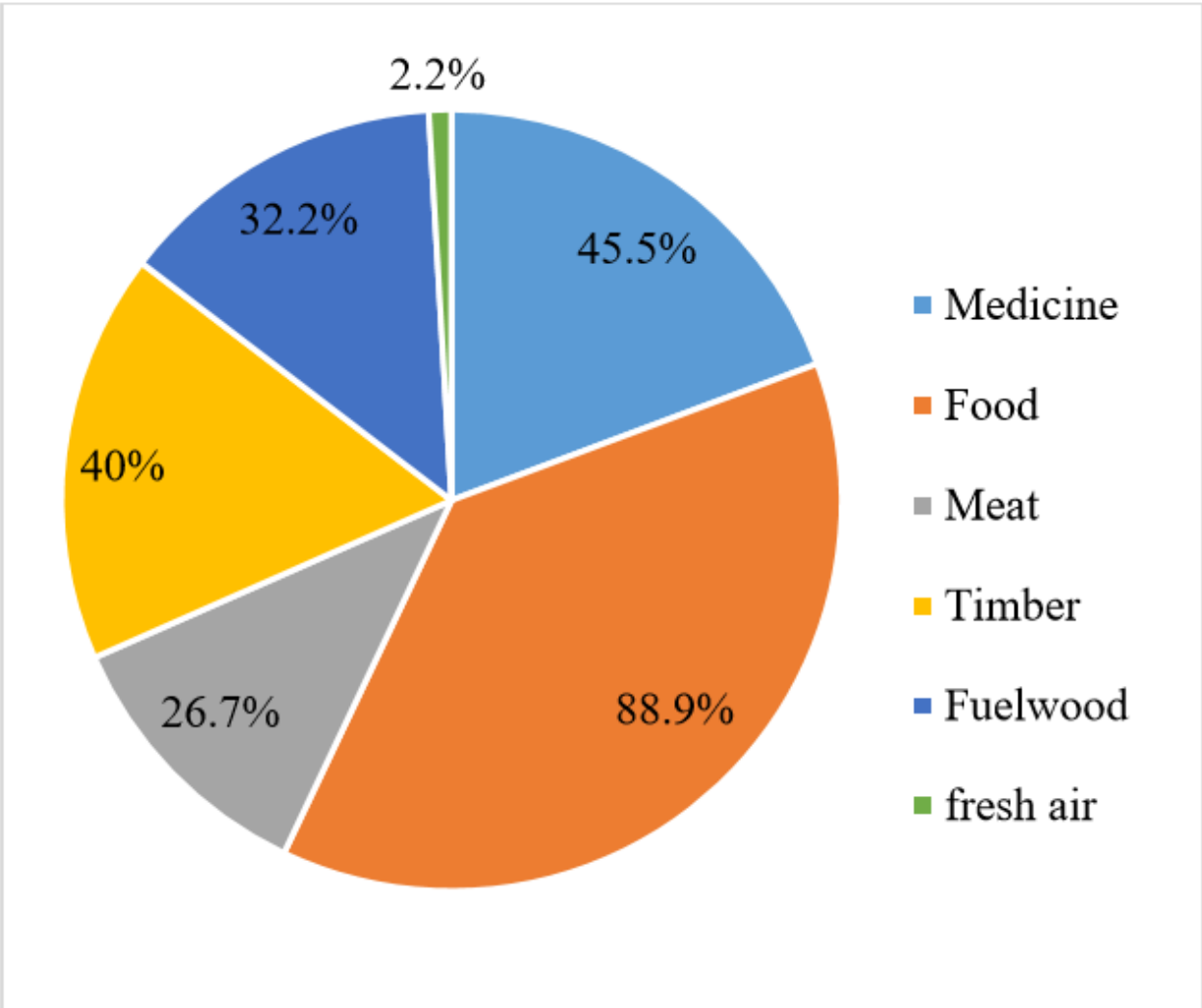


Figure 9. Categories of forest resources accessed by respondents

Source: (Author plus Isaac Nyarko Diploma thesis)

5.2 Profitability of the forest resources

The significance of the forest assets as far as their profitability is concern is presented in figure 10 were additionally positioned, 54.4% of respondents chose food as first asset they obtained profit from the forest. Apart from food was lumber 20.0%, medication was 11.1%, fuel wood was 7.8% and meat was 5.6% as shown in figure 7. The asset generally positioned second was fuel wood with 14.4% and the smallest was meat (2.2%). Food was positioned second with 5.6% of respondents as the asset they profit from the forest and was not positioned third by any of the respondents met. Lumber was the most noteworthy resource as third asset profit by forest with 5.6% as shown in figure 6 below.

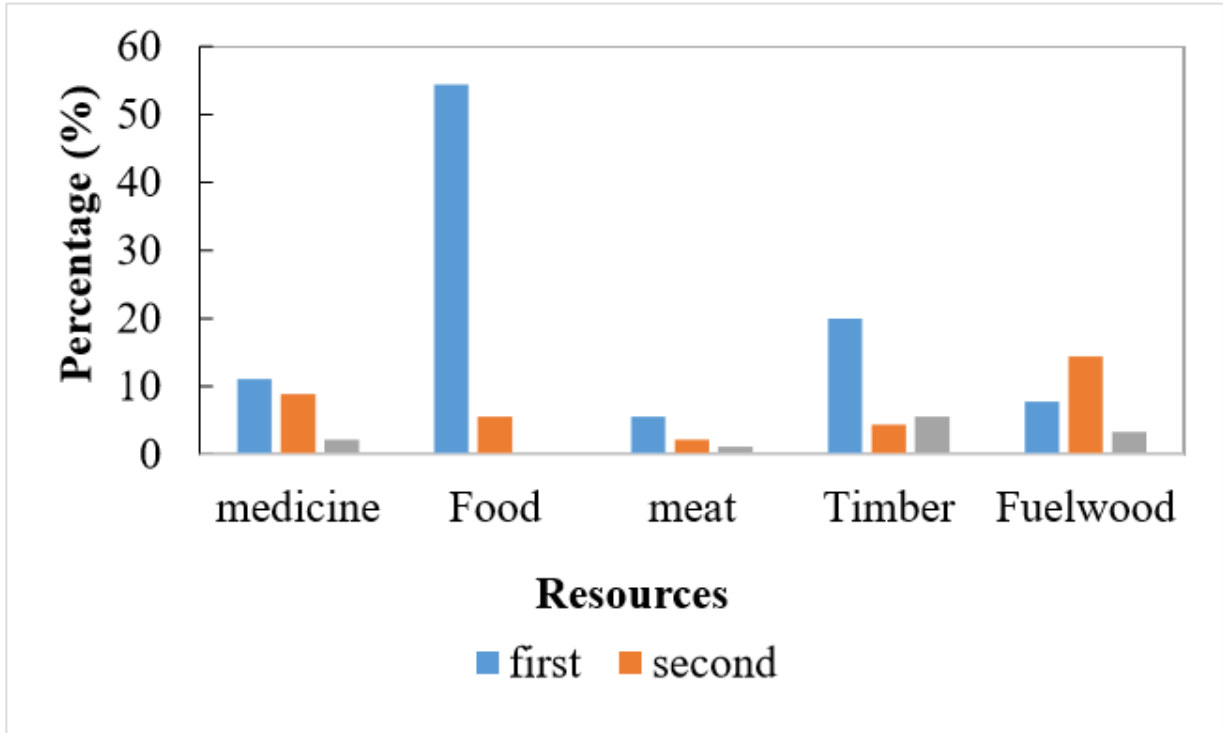


Figure 10. Ranking profitability of forest resources to households

Source: (Author plus Isaac Nyarko Diploma thesis)

5.3 Influence of the Ghanaian national forests policy in rural development

A comparative research done in another African nation Namibia affirms that network participatory in the forest management; great institutional game plan and equivalent advantages sharing are the main qualities, while insufficient specialized and monetary backings, low wages for the forest laborers and absence of proficient work force are the significant shortcomings. In actuality, environmental awareness and training in community level ventures were pinpointed to be some of pillar opportunities. Unlawful gathering and poaching impacts of environmental change and human population development were seen as the principle dangers. Table 2 beneath is a rundown of the discoveries.

Table 2. The influences of the national forestry policy on rural development, Unkoflonkadhi Community Forest (UCF)

Strengths	Weakness
<ul style="list-style-type: none"> ❖ Community participatory ❖ Equal benefit sharing (equity) ❖ Good institutional arrangement 	<ul style="list-style-type: none"> ❖ Inadequate technical and financial supports ❖ Lack of community economic incentives ❖ Low salaries for the FMC – poor management efforts ❖ Lack of literate and trained personnel
Opportunities	Threats
<ul style="list-style-type: none"> ❖ Environmental awareness and training ❖ Dependency of the community on forest ❖ Forest resources availability (mostly NTFPs) ❖ Government soft loan for enterprises ❖ Self - help and group projects fund from donors 	<ul style="list-style-type: none"> ❖ Population growth and urbanization ❖ Illegal harvesting and poaching ❖ Effects of climate change ❖ Development of alternatives to forest products ❖ Forest degradation and loss

Source: (Author and Nikodemus Andreas Diploma thesis)

6.0 Discussion

The main objectives of this research was to assess the influence of the National Forestry policy on rural development. This study is done with three main objectives: To evaluate the best way by which Ghana national forestry policy influences community forestry resources and benefits to the rural communities. To measure how Ghana's national forestry policy can be framed to bring rural development. To come out with necessary recommendation where Ghana's national forestry policy can be amended to retain equilibrium between sustainable and socio-economic development as far as community forests in concern.

- To assess how the Ghana's National Forestry Policy influences community forestry resources and the condition and quality of the environment, benefit from forest resources are also examined.

A survey of the awareness of Ghana's policy on forest, chain saw and bush fires within a forested community revealed that more than 70% of correspondents were aware of the country's national policy on forest, bushfires and chainsaw operations (Fig. 7). In this same survey, 20% of the respondent had no idea of the policies on both chainsaw operations and the country's forest. This indicates a higher knowledge of policies on forests and its protection from bushfires and tree felling. Communities within forest zones are known to rely on resources within forest for their livelihood, one of such benefits from the forest policies of Ghana is the modified taungya system. This modified system is practiced during reclamation of degraded forests. Farmers are given portions of degraded forest lands and tree seedling to grow a nurture to restore the degraded forest, farmers are then allowed to cultivate food crops for which they have complete ownership, and also enjoy 40% share of the benefits on the planted trees. This agreement is supported by the forest and wildlife policy of 2012 for Ghana (FAO, 2016). Awareness of policies such as the modified taungya system may not affect the undocumented benefits communities gain from the forests. In a study on the benefits of bushmeat on livelihoods of farmers, Schulte-Herbrüggen (2011) observed that incomes from bushmeat prevented farmers who integrated farming and hunting from falling into income poverty during the lean seasons of farming activities. Forest communities hunt in forest,

especially within the allowable hunting season to supplement either their protein needs or income as observed by Schulte-Herbrüggen (2011).

Area	Biomass (t/yr)	million US\$/yr
Cross-Sanga Region (Cameroon/Nigeria) ^a	12,000	–
Yaoundé (Cameroon) ^b	840-1,080	–
Côte d' Ivoire ^c	120,000	–
Nigeria ^d	2.6	–
Nigeria ^e	–	225-3,600
Takoradi (Ghana) ^f	191	0.58
Ashanti Region (Ghana) ^g	–	52
Gabon ^h	12,000-17,000	–
Gabon ⁱ	24,500-35,100	–
Ghana ^j	385,000	350
Congo Basin ^k	1m	–
Congo Basin ^l	4.9m	–

^a Fa *et al.* (2006) ^b Bahuchet & Ioveva (1999), cited in Nasi *et al.* (2008)

^c Caspary (1999) ^d Adeola *et al.* (1987) ^e Martin (1983)

^f Cowlshaw *et al.* (2005a) ^g Tutu *et al.* (1993) ^h Steel (1994) ⁱ Starkey (2004)

^j Ntlamo-Baldu (1998) ^k Wilkie & Carpenter (1999) ^l Fa *et al.* (2002)

Figure 11
Schulte-Herbrüggen (2011)

The benefits of bushmeat as presented in Fig. 11 for Takoradi, capital of the western region of Ghana, attracted some US\$0.58 million in the year 2005. With the total gains from bushmeat for Ghana in year 1998 been US\$350. Forest communities are likely to benefit from gains from bushmeat hunted from forest in Ghana.

According to Fig. 6, which presents the results of findings from a study on the benefits derived from forests by communities in forest zones in the Brong Ahafo region of Ghana, An 88.9% majority of respondents indicated their food needs were from the forest with 32.2% getting their fuel needs from the forest. Food been a basic need of man indicates the relevant of the forest resource to the communities. Farmers who are engaged in policies such as the modified taungya system get the full benefits of such a policy in their basic food needs and fuel from the forest to cook their food and meet other fuel needs. Again, in Figure 6, a substantial 45.5% of the respondents benefited in health from the forest. There is no restriction on the collections from trees in the forests of Ghana. These collections are used for traditional medicines and

forest communities have a greater opportunity of diverse medicines for their health needs as a benefit from the forest resources. Forest are known to be a good source of fresh air as they contribute immensely to the extenuation of global warming. Forest communities with their proximity to forest do enjoy fresh air compared to distant communities, this according to the results from Figure 6 contributed 2.2% of the benefits derived from forest by the respondents in the study. Forty percent of the respondents benefited from timber in the study results shown in figure 6 and 26.7% indicated meat as the benefits from the forest. The forest meat results goes to confirm the assertion of bushmeat contribution to livelihood as indicated by Schulte-Herbrüggen (2011).

- To evaluate how the Ghana's National Forestry Policy can be framed to promote the quality of the environment in the chosen region.

The forest and wildlife policy of Ghana enacted in the year 2012 has among others, the aim to restore degraded forests areas through tree planting. This is hoped to improve on the country's forest resources and improve on environmental quality. In the bid to do this, policies and projects such as the Environmental Governance (NREG) which started in the year 2008 and still ongoing is been carried out to manage and develop forest resources (FAO, 2016). To improve on the quality of environment for the Western region of Ghana, it will be important to decentralize these policies and encourage the western region develop its own strategies according to their specific regional environmental goals which will fit into the general national targets. As the current policy implementation situation is, western region, like all others only get allocation from the national implementation from resources as deemed appropriate by the National Forest commission.

The National forest policies in Ghana should be altered for positive rural advancement and development of livelihoods of forest communities. An all-incorporation forest policy and strategy will in a manner decrease urban relocation and close the wide division among rural and urban economies. Forest communities' group are reasonable for the establishment of tourism and research focuses that will pull in the urban to the rural. Non-timber forest items have been seen as a distinct advantage from fundamental needs of food security as on account of these communities to financial requirements of improved occupation. Adjacent to the food needs which is significantly from the horticulture lands, medicinal products and different NTFPs may be created

through business enterprise trainings and aptitude strengthening workshops to decrease youth joblessness in the rural communities (Ahenkan & Boon, 2010).

Community commitment in the arrangement of the policies and strategies is urgent to its affirmation especially in the Western district of Ghana. A large portion of the community per the review (77%) knew about the national forestry policies in Ghana. Overseeing forest has become their oblivious duty as a major aspect of their lives (Michon et al., 2013). They know that national forestry policies are to sustain the forest and protect the individuals who profit by it. They consented to the way that unlawful logging was occurring around their communities and the policies and strategies will assist with halting or lessen the pace of deforestation. Approximately 80% of the respondents from the forest communities like what the national forestry policy rely on and believes that it must be actualized. Forest when preserved by these approaches will improve rural economies by securing and upgrade crop production (Lust & Nachtergale, 1998).

Rural communities perceive about forest policies and approaches yet observe that it is the responsibility of the lawmaking body to make sure it is protected since "the government" has the highest authority over it. National forest policies should clearly address the issue of proprietorship and payment of reimbursement and ecosystem services to solitary landowners in these communities. The national forestry policies in Ghana has little to do the extent that the improvement of rural communities are concern. Thusly, change is critical to improve the human segment of forest and forest resources management, especially the indigenous perspective.

6.1 Possible modifications of Ghana's national forestry policy to improve socio-economic growth

Forestry policies must be continuous and offer better open doors for the acknowledgment and improvement of rural forests, especially through rural strengthening instrument like building up NTFPs and unbiased sharing of advantages (Michon et al., 2013; Ahenkan and Boon, 2010). Forestry policies when rational may add to the rural advancement in developing nations (Whiteman, 2000).

The application of the national forestry policy strategy needs to regard the media of attention since the community individuals observe that the policies are acceptable and will brings

about the advancement of their areas and revamp their livelihoods. The greater part of rural habitant near forest territories concurred that the best mode for disclosing policy information to them was through community alertness by means of information center announcement, community training and information fans. This medium causes them to feel some inclusive of the entire procedure as it very well may be considered as a base up approach since the community individuals can add to the information being send across to them face to face. (Michon et al., 2013; Whiteman, 2000).

Open and comprehensive procedure regardless of its drawbacks of contentions has demonstrated to be progressively fruitful in the usage of forest policies (Voth et al.,1999) Through the community means of sending information, gangs can be framed up and engaged to assume liability in the different forest communities to accomplish maintainability.

Developing enthusiasm for managing forests more 'sustainably' has prompted changes in policies on timber concessions, property rights and forest certification. The job of organizations and how they define motivators for asset utilize turned into a focal issue in the post-Earth Summit stage where numerous tropical nations investigated their enactment. This brought about a developing significance of NGOs, community-based associations and joint forest management preparatory measures in non- industrial forestry; and Governments have come to perceive the restrictions of state administrative limited capacity (Petersen & Sandhövel, 2001).

The outcome of the amended are blend, both as far as expanded operational performance and bettering sustainability of forest asset use. Issues identified with authoritative affiliation, the detachment of commercial, regulatory and service functions, decentralization, community-based forest management, income allocation and assortment, research and expansion, training and education, marketing and donor co-ordination have been tended to in various manners, depending partly on the predominant political, financial and biophysical condition in every nation (Petersen & Sandhövel, 2001).

Agreement appears to exist about the critical significance of the 'right' impetus structure for accomplishing great resource management and protection and, simultaneously lessening loads on government Repetto, 1989. One way to deal with improving management of natural resources is to reconstitute the motivators at the neighborhood level such that the individuals who are the nearest to the asset are given a more prominent stake in its since quite a while ago run practicality

and are straightforwardly associated with the efficient protection of assets. At the end of the day, the exchange of forest management obligations and gains to the community level has become a stated objective in numerous nations, where the exchange of duties regarding forest management has included the devolution of decision-making capability to bring down elevation of administration (Petersen & Sandhövel, 2001)

Discipline as law implementation proportion of the national forestry policy was commonly consented to be the correct activity by numerous residents. Discipline will consistently put fear into other potential culprits and preserve the forest and its assets. The forest communities know about the advantages from the forest and see that ensuring the protection of the forest assets against unlawful logging, bushfires and out of control fires will assist them with adjusting to climate change. (FAOSTAT, 2019).

6.2 Probable amendment areas of Ghana's national forestry policy for financial socio-economic advancement

Table 3 Present the major forest policies and enactments with their significant limelight (1948-1994) detailed by Ahenkan and Boon (2010). Forestry policies must be maintainable and gives better open doors for the acknowledgment and improvement of rural forests, especially through rural establishment of component like advancing NTFPs and fair sharing of gains (Michon et al., 2013; Ahenkan and Boon, 2010). Forestry policies and approaches when practical may improve the rural living standard and advancement in developing nations (Whiteman, 2000).

Table 3. Major forest policies and legislations with their major focus (1948-1994)

Forest Policies & Legislation	Major Objectives
1948 Forest Policy	<ul style="list-style-type: none"> ✓ Creation of permanent forest estates ✓ Protection of forests ✓ Protection of water catchment areas ✓ Environmental protection for ecological balance
Forest ordinance, 1951	<ul style="list-style-type: none"> ✓ Protection of forests ✓ Protection of forest reserves
Forest improvement Act OF 1960	<ul style="list-style-type: none"> ✓ Forest plantation development ✓ Timber plantation establishment and management
Wildlife Preservation Act, 1961 (Act 43)	<ul style="list-style-type: none"> ✓ Conservation of wildlife

Wildlife Reserves and Conservation of Policy of 1974	<ul style="list-style-type: none"> ✓ Protection of wildlife resources ✓ Species conservation ✓ Wildlife conservation areas ✓ Protected areas development
Forest Protection Decree, 1974	<ul style="list-style-type: none"> ✓ Defined forest offenses ✓ Forest protection
Trees and Timber Decree, 1974	<ul style="list-style-type: none"> ✓ Logging guidelines for timber industry ✓ Sanctions for non-compliance with the guidelines ✓ Promotion of export processed timber
Forest Protection Decree, 1974	<ul style="list-style-type: none"> ✓ Forest protection ✓ Protection of catchment areas
Trees and Timber (chain saw operations) regulation of 1983	<ul style="list-style-type: none"> ✓ Regulation of felling trees ✓ Forest plantation ✓ Regulation of logging activities
Forest Protection (Amendment) Law 1986	<ul style="list-style-type: none"> ✓ Defines forest offenses and penalties ✓ Forest protection ✓ Protection of water bodies ✓ Species conservation
Forest Protection (Amendment) Act, 2002	<ul style="list-style-type: none"> ✓ Forest protection ✓ Review forest offenses and fines upwards
1994 Forest and Wildlife Policy	<ul style="list-style-type: none"> ✓ Protection of Forests ✓ Species conservation ✓ Regulation of timber harvesting ✓ Development of cottage and agro-base industry ✓ Community forestry and forest conservation ✓ Deregulation and streamlining of bureaucratic control on wood export marketing ✓ Involvement community in conservation of forest and wildlife resources ✓ Rehabilitation and development of degraded forests
Timber Resource Management Act, 1997 – Act 547	<ul style="list-style-type: none"> ✓ Timber utilization contract ✓ Offenses of illegal logging ✓ Protection of logging on farms and plantations
The Forest Protection Amendment Act 2002	<ul style="list-style-type: none"> ✓ Community forestry and forest conservation ✓ Protection forest and wildlife ✓ Restoration and afforestation programmes ✓ Forest offenses penalties

	<ul style="list-style-type: none"> ✓ Protection of water catchment areas
Timber Resource Management (Amendment) Act 2002	<ul style="list-style-type: none"> ✓ Timber utilization contract ✓ Offenses for illegal logging ✓ Protection of logging on farms and plantations ✓ Community forestry and forest conservation ✓ Protect land with farms from logging ✓ Protect private forest plantation ✓ Duration of timber concession rights

(Ahenkan & Boon, 2010)

It was discovered that a few approaches or policies on forestry and wildlife, for example, the Forest and Wildlife Policy of 1994 needs revision to have value (balanced advantages sharing) on forest. Developing social value in forest protection and supportable improvement is difficult to come by. (Lust and Nachtergale, 1998). This was a shortcoming of the national forestry policy however the communities per their reaction from the investigation were happy to team up and take an interest with government in actualizing the forest policies and approaches that will upgrade their living standard. As indicated by Ahenkan and Boon (2010), the 1994 Forest and Wildlife Policy (FWP-94) and its execution procedure from 1995 to 2008 negatively affects NTFPs advancement and improvement in the Ghana. They revealed that, the greater part of the national forest policies and approaches focus on forest preservation and timber production and absolutely disregard the living condition and opportunities of NTFPs for nearby communities (Ahenkan and Boon, 2010).

7.0 Conclusion

Rural communities through policies such as the modified taungya system enjoy benefits such as food, bushmeat for income and their protein needs, fuel, medicine, fresh air and timber from forest resources within their catchment. However, change in forest management approaches to involve the communities through their local governance system will in the long run improve on the power transfer relation in society to generate more secure rights in resources for the people living in the forest zone. Currently, right in the forest resource for people living in the rural communities are crippled by the policies that suggest protecting the environment from people. These policies only protect wide profits for the select. They have flop to preserve the environment and have also cramped the attempts of the people in the rural communities to develop viable living condition. A different method that can be adapt is to conceptualize forest resources as assets, the value has been and continue to develop the livelihood of the rural people. This method has to go beyond investment, and far off conceptions on internalizing benefits from providing environmental services to others. There is a need to redistribute rights, this will there by create the structures necessary to encourage new forms of forest management. This redistribution can bring about economic growth, and greater participation of the living in the rural communities in forming and administering forest resource policy

The national forest policy in Ghana has no focus improving the livelihood of rural dwellers. It is therefore important that, the national forest policy in Ghana which also govern the Western regional forest accounts for a higher percentage of the high forest zone needs to be reformed to protect the environment and at the same time improve the livelihoods of forest communities. The locals in the Western region play a vital role in the sustainable management and care of for the forest. This sets to answer the objective of assessing the forestry policy of Ghana in its influence on community forestry resources; the policies mainly focus on the forest and does not consider the benefits expected from the western regional locals. There is a need for the revision of the forestry policy to be done in consultation with the indigenes of the forest communities, so they feel responsible for the care of the forest. By these, all set objectives for this thesis have been met.

7.1 Recommendations

The following recommendations have been suggested base on the research work as the way by which *“The National Forestry Policy on Environment in the Western region of Ghana”* can be improved.

- For the development of rural community with respect to forestry, there is a need for consistent and regular review and amendment of the forestry policies base on the situation hand.
- The Ghana Forestry Commission being the general overseer of the entire forest in Ghana must assume a supervisory role and allow for regional and community level agencies (through the local authority systems) develop and implementation strategies that fits within the national goals, rather than playing both implementation and supervisory roles.
- It will be more prudent if the forest and its preservation can be infused into the school syllabus from the early stage throughout the country so that there will be general awareness creation from generation to generation on forest sustainability and its ecosystem services.
- Ghana Forestry Commission should make sure that they asses the social intervention programmes from companies that will be operating in the forest communities and sign memorandum of understanding (MoU) with them and ensure its implementation.

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