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Community Participation in Forest Resource Management as a Tool in Reducing the Effects of Climate Change and Enhancing Sustainable Development

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Abstract:

Climate change, which encompasses a long term alteration in average weather conditions of communities and regions of the world has become an issue of concern the world over. Some very visible global manifestations of climate change include generally high temperatures, severe storms, flooding, drying up of water bodies and irregular rainfall patterns. Due to these changes, forest resources globally not excepting Ghana suffer a constant rate of depletion annually, hence the need to devise a sustainable way of managing these forest resources as their rapid depletion exacerbates some drastic effects of climate change. The issue of community participation in forest resource management is a subject of utmost significance as communities living either within or at the boundaries of forests depend on these forest resources on a daily basis for their sustenance. This study examined how the participation of the communities around forest resources can contribute in the effective management of the forest resources hence reducing the effects of climate change using the Kakum National Park and the Kalakpa Resource Reserve located in the Central and Volta Regions of Ghana respectively as case studies. The study adopted mainly a comprehensive bibliographical investigation and questionnaires distributed to solicit the views of residents in the two communities on community participation in the management of the forest resource. The data collected were interpreted and discussed in coherence with the literature reviewed. The study discovered that community participation in forest management was very low in both areas. The study recommended among other things the putting in place of measures to ensure the communities living around forest areas are involved fully in the management of the forest resource.

1. Introduction

Several works abound on forests and climate change (Binkley, 1988; Bowes & Sedjo, 1993; Kirilenko & Sedjo, 2007; and Emanuel *et al.*, 1985), however few of these works have looked at how the participation of forest communities in the management of forests could help effectively in curtailing the effects of climate change. Ghana's forest resources over the past decade have witnessed a high rate of depletion which deserves immediate consideration; especially since forest resources have been noted to be natural warriors that quietly fight the battle of global warming and climate change (Jefferson, 2014).

The Forest Stewardship Council (FSC) had observed in a recent review that forest resources the world over in the past were mainly state-managed with minimal or no local involvement (FSC, 2013). In recent times however, local communities are being included in the management of forests. A global example of local communities' involvement in the management of forest resources is the Forest Stewardship Council's small and low intensity managed forests, through which over 100 countries worldwide as at 2013 had received forest management certifications (FSC, 2013).

The United Nations Conference on Environment and Development (UNCED), dubbed Agenda 21, suggests a system of government decentralization which ensures the devolution of power to local communities. The UNCED noted that, "indigenous people and their communities, and other local communities, have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their

effective participation in the achievement of sustainable development" (UNCED, 1992). As a consequence, Section 4.2.3 of the Forest and Wildlife Policy of the Forestry Commission (FC) in Ghana, highlights as its objectives, the promotion of public awareness among rural people residing near forested areas and the involvement of these rural communities in forestry and wildlife conservation so as to maintain life sustaining systems, conserve scenic areas and also to enhance the potential of tourism, recreation and income generation (FC, 2011). This highlights the importance of community participation in the healthy maintenance of our forest resources as a natural and most efficient tool in reducing the effects of climate change and enhancing sustainable development.

The study that culminated in the writing of this paper set out to answer the following questions:

- How can communities be involved in forest and wildlife conservation?
- What contribution can they make?
- What tools do they have for sustenance for generations to come?
- What traditional knowledge systems do they have?
- How does forest resource management affect climate change?
- How does the management of the effects of climate change lead to sustainable development?

According to Schreckenberger *et al.* (2006), almost all countries in Africa, and many in Asia, are promoting the participation of rural communities in the management and utilization of natural forests and woodlands through some form of Participatory Forest Management (PFM). According to the Forestry Commission, the Republic of Ghana has a land area of 238,500 km² made up of two broad ecological zones - a high forest zone (HFZ) covering much of the southern third of the country, and a savannah zone covering two thirds of the considerably drier northern Ghana. Ghana's population reached 24 million in 2010, an increase of 28% from 2000. The average annual growth rate is about 2.1% (Ghana Statistical Service, 2014) and the population is projected to reach 31 million by 2025. Over the past ten years, population density increased from 79 to 102 persons per km² (PHC, 2010). Urban population is about 40%, growing by 4.4% annually, and is expected to reach about 65% by 2020. This population increase and rapid urbanization may result in a higher demand for natural resources as there is an expansion of agricultural areas and increasing demand for construction and for fuel wood, especially in urban areas.

Ghana as a developing country is endowed with lots of natural resources such as gold, diamond, timber, cocoa, bauxite, and recently oil, and these are exploited to aid development (Dabi & Kporha, 2015). The agriculture sector, which includes forestry, is the largest contributor (about 40% in 2000 - 2004) to GDP, while forestry alone contributes an estimated 4% (World Bank, 2005). Over 70% of the population depend on natural resources for their basic food, water and energy requirements (Forestry Commission, 2012).

All over the world, natural resources continue to contribute significantly to the economies of most countries. In Ghana, the harvesting of forest resources contributes immensely towards the economic and social development of the country and ranks as the third highest foreign exchange earner (Food and Agricultural Organization [FAO], 2003). It is therefore important to protect these forest resources as this will help in the fight against the effects of climate change as well as ensure sustainable development through prudent economic and social uses.

Natural forests were seen previously as plentiful and inexhaustible, resulting in the perception that there was no need to practice sustainable management. It was only when scarcity began to be felt that active management as a concept was initiated (Waddle *et al.*, 2003). It could therefore be inferred that perceived scarcity has been a prerequisite for the application of management and sustainable use of forest resources.

Community participation in forest resource management appears to be key to the reduction in the effects of climate change because indigenous or local people have answers to the pertinent questions as they have accumulated a rich storehouse of practical knowledge due to their original status as the custodians of these forests (Swanzy-Essien, 2000). The conservation of forest resources therefore - a parameter to reduce the effects of climate change - can be enhanced if due diligence is given to members of communities that surround the forest resources the world over. This would essentially result in sustainable development when the negative effects of climate change are curtailed.

Climate change in the 21st century has been argued by most researchers to be one of the daunting environmental challenges of the century. The phenomenon, which is mainly caused by excessive carbon in the atmosphere needs a resource capacity like that of forests to replace and store carbon. According to American Forests (2015), forests play a key role in the National Climate Change Strategy of the United States. Additionally, the report also stated that the loss of the forest resources' ability to mitigate the effects of climate change would mean losing many important ecosystem benefits. This further highlights the high inter-linkage between forests and climate change. This is because as greenhouse gases build up in the atmosphere, they trap heat eventually resulting in an enhanced greenhouse effect that may lead to global warming. The increased heat leads to changes in weather patterns (climate change) which eventually affects everything on the surface of the earth including forests.

Carbon dioxide, is the major contributor to climate change in terms of greenhouse gas produced from human activity. Trees (forests), apart from the oceans, have been noted to be one of the major reservoirs of carbon dioxide. These decrease the concentration of carbon dioxide in the immediate atmosphere by absorbing it from the air and converting it into oxygen through the process of photosynthesis with other products. But with the removal of vast parcels of these forests, this ecosystem service is likely to be lost.

The current status of the management of forest resources in Ghana has not involved community participation adequately. Indigenous, with their traditional knowledge systems, can contribute immensely to the conservation of these forests that would help to curtail the adverse effects of climate change on the forest ecosystems in these areas.

In the light of this, the paper seeks to ascertain how the participation of the communities around forest resources can contribute in the effective management of the forest resources, hence reducing the effects of climate change.

2. Study Areas

The Kakum National Park (KNP) and the Kalakpa Resource Reserve (KRR) which are both protected forest areas form the main focus of the study because they all happen to have several communities living around the protected forest areas. The findings of the study would be generalized for all forest communities since they all basically depend on the forest resources around them but would love to keep the resources undestroyed and the general environment around them undisturbed.

The Kakum National Park (Figure 1) which is located between longitudes 1°15' and 1°36' West and latitudes 5° 20' and 5° 40' North in the Central Region of Ghana.



Figure 1: A picture of a section of the Kakum National Park (August, 2010).

It is located 30 km North of Cape Coast between AbrafoOdumasi and Dwokwa Mfuom on the TwifoHeman/ TwifoPraso main road and falls within the TwifoHemang Lower Denkyira District. The district is bounded on the north by the Upper Denkyira District, on the South by the Cape Coast Municipality, on the West by the Mpohor-Wassa East District of the Western Region and on the East and North-East by the Abura-Asebu- Kwamankese and Assin Districts respectively (Ghana Statistical Service, 2005).

The park occupies both Fante and Assin lands (Sefran, 2003). Agyare (1996) reports that there are fifty-two communities with a population of about 400 people in each community and a number of hamlets dotted all around the park with most of the inhabitants (both migrants and indigenes) living in and out of the park and engaging in farming and hunting as their main economic activities.

The Kakum National Park is an island of tropical rainforest in a sea of agricultural lands – an isolation of what was once a continuous belt of rain forest extending from Guinea through Sierra Leone, Liberia, and Cote d'Ivoire to Ghana. Degraded by mining, farming and human settlement, and combed by hunters and timber extractors, Kakum National Park provides one of the last remaining habitats for six globally endangered species, including Dianna monkeys, bongos, and yellow-backed duikers and forest elephants (Safran, 2003).

Sefran indicates further that the park is Ghana's premier wildlife protected area in the forest zone. It is both incredibly biologically diverse, and sacred to the local people. Forest elephant, bongo, antelope, and duiker live in the forest, as do seven species of primates and many other animals. Kakum is most famous for its unforgettable 333m-long tree-top canopy walkway, which is suspended 27m off the ground. There are wooden platforms built around trees for rainforest canopy observation. Early morning canopy walks offer the best chances for wildlife observation, but the forest view in itself is astounding. It is the only such walkway in Africa (Sefran, 2003).

The 357 sq. km Rainforest Park is home to 269 species of birds, butterflies, and other insects. Large mixed bird flocks are most often seen (and heard) yearly from January through March near the adjoining settlement of Abrafo. Along the Antwikwaa road (the road leading to the Antwikwaa community), hawks, kingfishers, bee-eaters and starlings, among others, can be found. Kruwa has fruit trees that in season draw many green bulls, barbets, tinker birds, hornbills, and other birds. Aboabo, a two-hour drive to the park's northwest corner, offers some opportunity to witness flycatchers and eagles (Sefran, 2003).

Annual rainfall figures in and around the park range from 1000 mm along the coast to about 2000 mm in the interior. The wettest months are May-June and September-October while dry periods occur in December-February and briefly in August. Mean monthly temperature ranges from 24 degrees Celsius in the coolest month to about 30 degrees Celsius in the hottest months of March and April (GHCT bulletin, 2015).

Kakum and its environs are drained by rivers such as Nemini, Sukuma, Obuo, and Kakum. The area is a watershed, which helps to supply good drinking water to the nearby city of Cape Coast.

The Kalakpa Resource Reserve (Figure 2) which has communities within and around the reserve, is a protected area in South Eastern Ghana containing one of the last species of the Guinean Bush Savanna. It features an outstanding combination of dry forest and short grassland savanna.



Figure 2: A section of the Kalakpa Forest Reserve
Photo credit: Pat Bennett 2007

The resource reserve which has its administrative headquarters at Abutia- Kloe, in the Ho District of the Volta Region has an area of about 325km square. It lies roughly 100km north -east of Ghana's capital, Accra and 20 km south of Ho, the capital of the Volta Region. The reserve has natural attributes, along with a lush terrain, good opportunities for wildlife viewing and close proximity to Ghana's capital city and provides excellent potential for ecotourism. Additionally the reserve lies in the ancestral homelands of the Abutia and Adaklu people with a host of other communities within the reserve itself. Some of the adjacent communities include AdakluDzakpo, Adaklu-Tokpeto, AdakluKpetsu, Vukpo, AbutiaAvetakpoe, AbutiaAgordeke, Gbetikpo, Agortive and Kporta, while some communities within the reserve include Fosime, Dorkpor, Sokporkorfe, Venakofe, Adzimakofe, Atipkoe and Dzidoede among others.

3. Materials and Methods

The study adopted mainly a comprehensive bibliographical investigation and questionnaires distributed to solicit the views of residents in the two communities on community participation in the management of the forest resource. The data collected were interpreted and discussed in coherence with the literature reviewed.

4. Literature Review

4.1. Community Participation on the Global Scene

Over the past two centuries the nationalization of much of the world's forests has eroded and alienated local community forest management systems in many nations. Forest departments, with limited financial and human resources, have experienced increasing problems ensuring the sustainable use of millions of hectares of land under their sole jurisdiction. Communities and indigenous peoples, with few legal rights or responsibilities over the public forest domain, have stood by, while witnessing the rapid commercial exploitation of forest resources during the last half century. Growing rural populations competing for poorly controlled forest resources are intensifying use pressures and accelerating deforestation. Yet as important forest product scarcities increase and conflicts mount over resource access at the end of the twentieth century, many communities around the world are taking action to stabilize these important forest environments

4.2. Results and Discussions: Community Participation in Forest Management in Ghana

Community participation in the context of this study connotes the involvement of locals in decision making processes involving the management of the forest resources within their area of abode. According to Boafo (2000), community forestry or participatory forest management in Ghana started in the 1920s as a joint activity between the traditional leaders who served as representatives of the local people and the government. He noted that, land in Ghana since time immemorial has been owned by individuals, families and the communities, not the central government. Then, the focus was mainly to conserve forest resources for the sake of posterity.

According to Boafo (2000), since land ownership (the forest) was passed to the State, locals have felt much cheated by the behavior of the timber contractors (who had legal licenses and sometimes not), and thus resorted to the misuse of the forest resources any time they had a chance, resulting in a failure of the policy for joint ownership of the forest resources. The locals however continued to

benefit from the use of Non-Timber Forest Products (NTFPs) even though these products were not consciously managed. More so, the forestry services could not complain about the attitude of the locals, basically because they knew it was because the locals were being marginalized. This meant that even though the rights of locals for the joint management of forest resources had been recognized since 1948, the state of affairs on the ground was an entirely different one. This development, Boafo also noted, is not in line with the current forest and wildlife policy of Ghana which has as its focus, the involvement of local communities to help improve the efficiency of forest management.

The results of the study indicated less community involvement in the management of the forest resources at both locations. For example at the Kakum National Park for instance, it was clearly evident in the study that, majority (approximately 70% [average]) of respondents from six different forest communities who had the opinion that they did not participate in the management of the forest resources of the park, stated categorically that they did not participate in the planning and decision making processes of the park management. Others stated that their localities were not being developed and that management was not responding to their calls for support. A cross tabulation of the perception of participation in park management against the views of members of the various communities is presented in Table 1 below.

Community	Community participation		Total (%)
	Yes (%)	No (%)	
Abrafo	35	65	100
Mfuom	15	85	100
Antwikwaa	50	50	100
Mesomagor	39	61	100
Kruwa	14	86	100
Average	30	70	100

N=100, chi-square = 9.478, Contingency coefficient =0.294, significance=0.050

Table 1: Perception of Participation in Park Management

Source: Field work 2007. (N=100)

In view of these findings above, it is envisaged that, to enhance the efficiency of forest management, locals should be engaged in decision making processes, which reflects their actual needs in relation to the forest resources around them. This would surely be the way of getting a livelihood for the local communities as well as tapping into their knowledge of the terrain to the benefit of the forests. FAO (2015) highlights that the participation of rural communities in forest resource management to ensure the sustainable maintenance of the resources is necessary.

A more direct question was posed to the respondents on whether the community participated in the management of the forest resource of the KNP. The results in Figure 3 show that a few (30%) of the people replied in the affirmative. However, a majority (70%) of the people indicated that their communities were not involved.

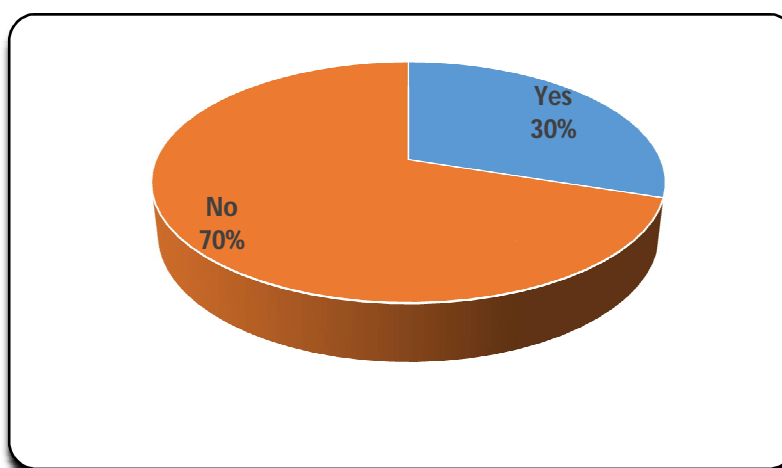


Figure 3: Community Participation in Park Management in KNP

Source: Field Data, 2007

The study revealed that the people participated in the park management as community tour guides (5.5%) and anti-poaching team members (3.0%), with about 6.5% as restaurant managers/waiters. The remaining (15%), of those who replied in the affirmative, could not give any explanation for their responses. The specific roles played by respondents in the park's management are the following:

- Community guides to tourist and visitors (11%),
- Working with the anti-poaching team (6%)
- Others such attending management meetings and providing environmental education to people in the communities (13%).

Results from the Kalakpa Resource Reserve were no different. At Kalakpa, residents around the reserve were asked whether they knew how the monies collected from permits was used. Out of the total, 38.4% said they knew while 61.6% said they had no idea of how it was used. For those who said they knew, the responses given indicated that respondents were guessing. This was obvious as most would begin their statements in the manner, "I think they pay the rangers". "I believe it is used to manage the office". "I think...." It was thus interpreted that they were not aware what the monies they were paying were used for. Also evaluated was the attendance to meetings and seminars by community members. These seminars were organized by the Forestry Commission and Wildlife Division. 48.7% of respondents said they had attended a seminar on forest-related issues while others also had attended about three public meetings in the last one year. When asked to describe the nature of meetings, respondents said they were to educate them on the importance of the observance of the rules and regulations concerning the reserve.

To establish the existing nature of participation in forest management by the community, the respondents were requested to say whether they were involved and the nature of their involvement. Majority of the respondents, 73.2% (82), said they were not involved in any mode of forest management issues, compared to 26.8% (30) who said they were involved in one way or the other.

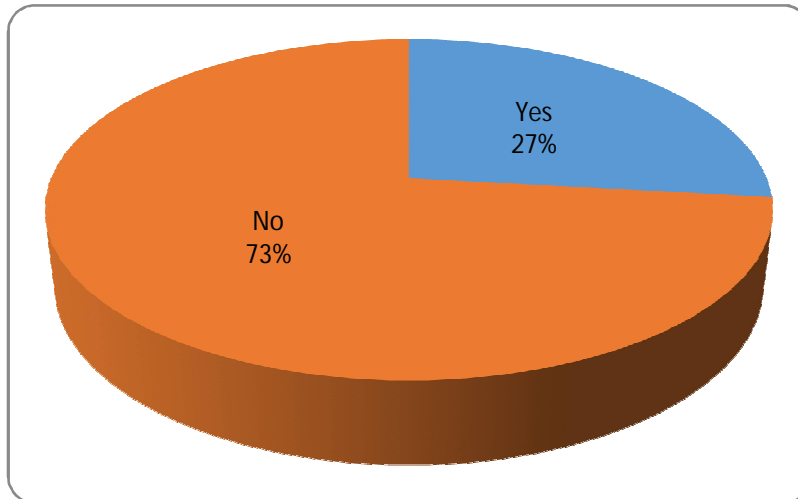


Figure 4: Community Participation in Park Management in Kalakpa Resource Reserve
Source: Field Data, 2007

Those who were involved in one way or the other were asked to state the nature of their involvement. Respondents mentioned that they were informed through Community Resource Management Areas (CREMA) which serves as a means of collaborating with the resource managers in order to maximize benefits to the locals. CREMA is solely managed by the villagers and communities that establish them.

Other ways of involvement included "reforestation" (planting of forest trees) and clearing (weeding) of boundaries.

4.3. Forest Resource Management and Climate Change

According to Poffenberger (n.d), the United Nations (UN) in response to scientific evidence that climate change is happening and mainly due to increasing greenhouse gases emitted as a result of human activity negotiated a treaty at its Conference on Environment and Development in 1992. This treaty is known as the United Nations Framework Convention on Climate Change (UNFCCC) and Ghana is one of the 195 parties to it. The ultimate objective of the UNFCCC was to achieve the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner (UN, 1992).

Studies during the 1981–85 period had estimated the annual rate of deforestation in Ghana at 1.3%, and close to 2% in the early nineties (Keeling 1991, cited in Rice & Counsell, 1993). In recent times, the indigenous forests of Ghana have been partially replaced with cocoa, oil palm, citrus, and rubber plantations in eco-regions with adequate site conditions (Gilbert *et al.*, 1995 in Dixon *et al.*, 1996). Dixon *et al.* additionally emphasized the point that deforestation, forest degradation, and future global climate change significantly influence the projected rate of animal and plant species change in Africa. Conservation International (2014), a forestry organization in its studies showed that deforestation accounted for 11% of all human caused greenhouse emissions. It stated that massive amounts of carbon are stored in tropical rainforests, so when these areas are cleared for ranches or farms, the carbon gets released in to the atmosphere and accelerates climate change. Climate change which is caused by an increase in certain greenhouse gasses such as carbon dioxide and methane in the atmosphere, is considered to be one of the most serious concerns to sustainable development, with adverse impacts on environment, agriculture, economic activity, natural resources and physical infrastructures (ICAO, 2012). Since 1750 - (the time of the industrial revolution), - carbon dioxide (CO₂) in the atmosphere has increased by 31%, methane by 151% and nitrous oxide by 17% (Dahal, 2009 in Timilsina-Parajul *et al.*, 2012). Rising concentrations of the artificially produced Green House Gases (GHGs) are leading to changes in the global climate. Though developed countries are mainly responsible for global warming and should take concrete actions to reduce their greenhouse gas emissions, the impact of changes

would be felt not only by these developed countries but also by the entire global community. Poor countries, like Nepal, are likely to suffer most due to limited resources to cope with and adapt to the effects of climate change (Regmiet *al.*, 2010 in Timilsina-Parajulet *al.*, 2012).

4.4. Forest Management, Community Participation in Forest Resource Management and Sustainable Development

As earlier established, a major cause of global warming is deforestation, and so we all have a stake in helping these communities defend their resources from wealthy ranchers, loggers, miners, farmers and drug traffickers. No matter how different our lives look in far-apart places, climate change affects us all. Forest Resource Management is the planning, administration, and management of a wide variety of forest resources to provide environmental and economic benefits for society including wood, wildlife, special forest products, water and recreational opportunities. The settings for forest resource management range from urban forests to remote wilderness areas (Plan Ghana, 2002). Dwelling on this definition, it can be deduced that the ultimate aim of forest resource management is to provide a sustainable means of livelihood for members in a society hence its focus on sustainable development.

According to Plan Ghana (2002), the Community Forest Resource Management Programme (CFRM) was piloted in 2002 and subsequently launched and expanded to cover twenty six districts. It is composed of: 1) the participatory forest management planning component which involves socio-economic surveys and the preparation of management plans for the districts within the programme; 2) the creation of Community Resource Management Committees (CRMCs) and the preparation of Memoranda of Understanding (MoUs) on roles and responsibilities between the Forestry Commission, local authorities and other stakeholders; 3) the creation of operations with a focus on monitoring and forest protection from wildfires and illegal operations, community education and commercial seedling production by farmers; 4) an equitable benefit sharing component including strengthening communities in the negotiation of social responsibility agreements with timber contractors; 5) a forestry-based livelihoods support component and 6) Public education and awareness component. The CRMCs were developed and supported by the Community Resource Management Unit within the Resource Management Support Centre (RMSC) of the Forestry Commission. They were established to liaise with the Forestry Commission on forest management issues, which were then piloted between 1999 – 2000. However due to inadequate financial support from the Wildlife Division, the Community Resource Management Units of the Wildlife Divisions of the Forestry Commission are not able to fulfill their functions of involving local communities and ensuring sustained development of forest communities.

A new report by the World Resources Institute (WRI) and the Rights and Resources Initiative (RRI) offers compelling evidence that one of the best ways to slow global warming is to give traditional communities the right to manage the forests where they have lived for generations. It is by far the most comprehensive assessment to date, drawing on 130 previous studies, as well as recent satellite data.

Most media attention on climate change focuses on energy and fossil fuels. But any realistic strategy to curb climate change must also address deforestation. The world's forests store more carbon than the atmosphere—one estimate suggests that by stopping deforestation and reforestation we could reduce global greenhouse gas emissions by 30 percent. Sustainable development is thus crucial as it meets the needs of economic development in the present without compromising the ability of future generations to meet their own needs (Brundtland Commission, 1987).

5. Conclusions and Recommendations

5.1. Strides Made by Some Countries

Kaimowitz (2014) in a blog post for the Ford Foundation website noted that the deforestation in the Brazilian Amazon is only a fraction of what it was ten years ago, in part because traditional communities now have secure rights to about one quarter of the forest. This has allowed Brazil to reduce its emissions by 3.2 billion tons of carbon dioxide—more than three times the amount emitted by all the cars in the United States in a year.

Kaimowitz further documents that Brazil is not an isolated case. In other countries where governments have mapped, demarcated and titled community forests, helped communities stop encroachment, and provided traditional communities with funds and training, the results have been remarkable. For example, it has been recognized that Guatemala's community forest concessions have much less deforestation than nearby national parks in the same country. The woodlands of countries like Nepal and Niger had regenerated after communities gained greater control. Again, Kaimowitz argues that Bolivian indigenous territories with titles have only a fraction of the forest loss of other Amazon forests while Tanzania's villagers have been known to manage their forests better than the government.

Even in places like Nicaragua, where pressure for land is quite intense and sometimes violent, Kaimowitz concludes that the Mayangna Indians have not given up the fight to regain control of their forest reserves. They are still out patrolling their territory and pushing the government to protect their rights.

5.2. Possible Solutions for Ghana

Climate change which is now a global phenomenon basically has had the focus on forest resource management as one of the major ways of curtailing and reducing its effects. In the light of this and the success stories in community-based forestry management by other countries, the following, which are related to community participation in forest resource management are recommended:

- a) Community forestry should be part and parcel of the lives of all forest community members and backed by the Forestry Commission who should have an oversight committee which helps members of the community comply with laid down

procedures in relation to community forestry. An award scheme should be instituted by the forestry commission that would help identify and award communities that perform well in community forestry and who manage their forest resources well for the generations unborn.

- b) There should be frequent sessions of reforestation programmes that would help restore portions of the forests that are destroyed
- c) Review policy process and legal status of forests in relation to community forestry.
- d) Development of a sustainable means of livelihood such as farms, bee keeping sites, snail keeping sites and markets for indigenous forest communities so their focus would not only be on the forest resources for survival.
- e) The policies governing the running of most resource reserves have to be reviewed as they relate to issues of the past which do not work so well today.
- f) Community Forestry should be made part and parcel of the lives of all forest community members through frequent workshops and seminars and backed by the Forestry Commission who should have an oversight committee which helps members of the community comply with laid down procedures in relation to community forestry.
- g) Tourist sites and sites for site-seeing and hiking, which are mostly found in natural forest resource areas can be fully developed into first class tourist facilities which would yield an income on a sustainable basis to help the communities shift their focus from always depending on the forest resource alone for survival.

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