

UNIVERSITY FOR DEVELOPMENT STUDIES

MANAGING NATURAL RESOURCES FOR SUSTAINABLE LIVELIHOODS: A
STUDY OF THE CHAKALI COMMUNITY RESOURCE MANAGEMENT
AREA (CREMA) IN THE WA EAST DISTRICT

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BY

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DECLARATION

Student

I hereby declare that this thesis is the result of my own original work, and that no part of it has been presented for another degree in this University or elsewhere except those that have been duly acknowledged.

Candidates Signature Date.....

Candidates Name: Isaac Acheampong

Supervisor

I hereby declare that the preparation and presentation of the thesis was supervised by me in accordance with the guidelines on supervision of thesis laid down by the University for Development Studies.

Supervisors Signature..... Date.....

Supervisors Name: Professor Osumanu I. Kanton



ABSTRACT

(CREMA) are zones labelled across this country for the preservation and safeguard of natural resources. The research aimed at the contributions of natural reserves management for justifiable livelihood in the Chakali CREMA of the Wa East District, Ghana. The framework for the research was Community Based Resource Management, which encourages active community participation. The methodology used was a qualitative approach, but questionnaires were used for data collection to aid the collection of some demographic data. Hence, the main tool for soliciting data combined both questionnaire and interview. The outcomes demonstrated that the communities were male dominated and as a result, females were not interested in the activities of the CREMA. It was also found from the study that some natural resources like land, forest, wildlife, water, rocks, soil, mountains, trees, forest animals, birds, grass, fishes and minerals (especially gold) are the major natural resources in Chakali. Furthermore, it was discovered from the research that the local people relied solely on natural resources for their livings. Respondents lamented on events that are destructively disturbing the CREMA including illegal mining, haphazard bush burning, grazing of the field, untimely application of chemicals, and so on. The study concludes that, in order to manage natural resource to sustain lives and for generational use, community members should actively participate in activities of the CREMA. Based on this, it is recommended that, there should be regular education and training of both CREMA members, executives and all stakeholders by Forest Commissions division responsible on the need to conserve and manage the forest reserves. Training should focus on reserve management as well as local community members – to know and appreciate the importance of nature management.



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DEDICATION

To my lovely mum, Theresa Adomaa.

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LIST OF ACRONYMS

CBC	Community Based Conservation
CBNRM	Community Based Natural Resources Management
CBOs	Community Based Organizations
CBFM	Community Based Fire Management
CEC	Community Resources Management Areas Executive Committee
COBRA	Conservation of Biodiversity Resource Area
CREMA	Community Resource Management Areas
CRMC	Community Resources Management Committee
DCE	District Chief Executive
EPA	Environmental Protection Agency
FPIC	Free Prior Informed Consent
GSS	Ghana Statistical Service
IUCN	International Union for the Conservation of Nature and Natural Resource.
JHS	Junior High School
LI	Legislative Instrument
MOFA	Ministry for Food and Agriculture
MEAs	Multi-National Environmental Agreements.
NGO	Non-Governmental Organization
NRs	Natural Resources
PAR	Participation Action Research
Pas	Protected Areas
SHS	Senior High School
UNCED	United Nations Conferences on Environmental Development
USAID	United State Agency for International Development



WD Wildlife Division.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

In recent times, natural resource exploitation forest reserves and natural parks has been a major concern to many governments, specifically those in our part of the continent. In rural Africa, most indigenous communities live in close collaboration with the environment and the type of rural livelihood is dependent on the location. For instance, local communities located along the coast are mostly fishermen, while those found within forest areas or along their fringes are predominantly farmers (Bandoh, 2010).

In years gone by, persons have changed environments more speedily and widely as in somewhat virtually equal period in the historical evolution of manhood, to an excessive degree to fulfill rapidly unindustrialized needs for sustenance, fresh aquatic life, lumber, fiber, energy and so on. This has fetched about substantial gains in human prosperity and financial advancement; however, these increases have been accomplished at developing expenses as the debasement of numerous biological systems (Millennium Ecosystem Assessment, 2005). Tropical deforestation and the related monetary, natural, political and social issues have turned into a matter of general intrigue and worry for specialists, national and worldwide governments, global protection and ecological associations, just as neighborhood weight gatherings. One of the approaches to safeguard the backwoods condition is to set up ensured regions (PAs). Ensured regions are perceived as the absolute most essential technique for monitoring natural life and safeguarding organic decent variety (Johannesen and Skonhofs, 2005).





As opined by (IUCN) International Union for the Conservation of Nature and Natural Resources and famous the travel industry researchers, a secured region (PA) has for some time been characterized as "a territory of land as well as ocean explicitly committed to the insurance and upkeep of organic decent variety, and of regular and related social relic, and oversight through lawful or other compelling signifies" (IUCN, 1994; Eagles et al., 2002; Hockings, 2003). With increasing concern about biodiversity and nature conservation locally and internationally, several countries signed agreements, created protected areas, passed conservation laws and established institutions targeted at specific plant or animal species designated as having international or national importance to address the problem of natural resource exploitation. In spite of this, studies have shown that some protected areas continue to experience heavy exploitation of their natural resources; both wild animals and wild plants (Bawa & Seidler, 1998; Steinmetz et al., 2006 in Bandoh., 2010).

This nation (Ghana) is endowed with bountiful natural resources to include oil, manganese, aquatic life, forest reserves, precious stones like gold, diamond and so on. Preservation of our natural resources is important as long it effect on human needs, nonetheless, to have a distinguished generation and yearning for future yet unborn. Henceforth, preservation of natural resources and other ecological difficulties and doubts are pass sectorial which additionally render enter in every quarter in phrases of lowering scarcity and impoverished circumstances of persons and consequently require to be rendered maximum priority (Keizire and Mugenyi, 2006).

Weather variation poses a momentous hazard to the world and our part of the continent. A forum organized by the Inter-Governmental Panel on Climate Change (IPCC), and decreasing discharging from deforestation and forest degradation

(REDD) does not only supports cost oriented ways of providing primary justification, but also have the ability to eradicate poverty. Pachauri and Reisinger (2007).

Amartya (2000) cause the stir that, development is all about sanctioning persons to proceeds control of their individual survival and their generation as it is their own fiscal wellbeing, apiece. Africa as a continent is coupled with financial problems and infrastructural deficits as strictly associated to the disempowerment and partisan downgrading of the people, predominantly countryside dwellers, that has occurred since the colonial rule. Most reviewers contend that countryside dwellers liberation is one of the highest inspirations of CBNRM (Arntzen et al., 2003; WRI, 2005) – far-off beyond any fiscal or ecological welfares.

Natural resources (NRs) and its involvement to livelihood had remained extensively discovered within countryside dwellers perspective (Bandoh, 2010). For instance, matters arising from acquiring entry, putting natural resources to reasonable use and its control, frequently in the framework of aids to livings), however comparatively diminutive consideration has been rewarded to specifically endorsing rules to combat in opposition to the ceaseless fires in northern Ghana and the study area in question Wa East.

Subsequently, numerous ecological preservation bunches bear witness to a change in outlook in nature preservation, far from restrictive secured zones towards an additional people-focused methodology or network-based protection (Brown, 2003). Put differently, effective conservation of wild animal and plant species mutually in and out of the reserves demands the cooperation of the local communities surrounding protected areas. It is cunning therefore that imperative agenda or strategy be kept in dwellings to administer the technique persons practice conservational possessions in these zones.



1.2 Problem Statement

For the past ten years, lots of countryside dwellers have demarcated areas within their jurisdiction as protected areas and it is locally governed by them. Though, countryside dwellers have continually faced issues of superintendence and administrative blockades in relations to being able to produce profitable charges from treasured forestry products, such as gold and lumber which are broadly exploited illegitimately by complexes of diplomatically and economically influential external interests (Milledge et al., 2007).

Most of the domestic parks and resource reserves in the country were established during the 1960s and 1970s to protect Ghana's numerous ecological communities. Since their establishment, management programmes were directed at maintaining protected areas in a natural, uninterrupted state by following the protectionist model, of which Chakali is an example. Despite this measure, natural resource exploitation continues inside the Chakali reserve.

Frustrated and unable to effectively manage the reserve due to lack of funds and scarce human resource capacity, the management team moved away from the protectionist model by introducing a community-based approach to nature preservation and natural resource administration on the reserve.

However, the immediate position of natural resources within and outside the Chakali reserve, following the introduction of the community resource management program, has not been studied. It is not clear whether the new program has been successful in developing a supportive local network and in decreasing exploitation of reserved resources. It is therefore imperative to understand whether or not the advent of the CREMA programme has affected the behavior of Chakali CREMA communities, their willingness to undertake nature conservation measures. In spite of the fact that,



net yearly forestry damage has deteriorated internationally, our part of the continent (Africa) still carries the highest rate of forestry destruction globally.

In brief, has the introduction of Community Resource Management Area program helped minimized resource exploitation inside and outside Chakali and how can community members help in encouraging the activities of the CREMA?

1.3 Research Questions

1.3.1 Main Research Question

How has natural resources management in the Chakali CREMA sustained livelihoods?

1.3.2 Sub Research Questions

The research seeks to answer the following specific questions:

- i. How has community members depended on natural resources?
- ii. How has the creation of the CREMA and its activities affected livelihoods?
- iii. How can resources in the Chakali CREMA being well-kept for sustainable livelihoods?
- iv. How have activities of stakeholders helped in natural resources management?

1.4 Research Objectives

1.4.1 Main Research Objective

To assess the role of natural resource management in sustaining livelihoods in the Chakali CREMA.

1.4.2. Sub Research Objectives

The research seeks to achieve the following specific objectives:

- i. To assess community members' dependence on natural resources.



- ii. To examine the effects of the activities of the CREMA on livelihoods.
- iii. To explore ways by which natural resources management can sustain livelihoods.
- iv. To examine activities of stakeholders in forest resource administration.

1.5 Significance of the Study

The research piece was inspired by the thinking in what way to manage forestry reserves for sustainable living amongst countryside dwellers. It is, therefore, worthwhile to examine the effectiveness of the Chakali Community Forest Reserve Administration Area in Ghana in conjunction with forest resource exploitation and resource management in the Reserve. Given that much study has not been done since the inception of the CREMA programme in the Resource Reserve, undertaking this research has contributed to immense thoughtful of the effectiveness of CBRM programmes in achieving nature conservation in Ghana. Findings of the study may allow for knowledge sharing and proper comparison between and among countries with such programmes already in place. The success of such development projects like CREMA depends largely upon support of the indigenous countryside dwellers. Major component of this study therefore is to examine local community members' willingness to support CREMA by actively participating in all CREMA related activities that aims at preserving the natural resources. Appreciating the roles local community members desire to undertake will assist CREMA executives and other stakeholders to effectively plan for conserving and managing natural resources for sustainable livelihood and development.

Lastly, the research sought to contribute to existing knowledge on natural resource exploitation, nature conservation, and sustainable livelihoods.



1.6 Organization of the Study

The study was prearranged in five main section. The first section covers the introduction to the research on the issue to be discussed, safeguarding and supervising natural resources for ecological livelihood in Chakali in the Wa East District of the Upper West Region problem statement, objectives, importance of the issues to be discussed, etc. An evaluation of existing knowledge on safeguarding and supervising natural resources for sustainable livelihood forms the content of chapter two. Chapter three relates to explanation of the study area and various types and approaches of information gathering and analysis employed in the research. Presentation and discussion of results emanating from the study is captured in chapter four of the research work. Lastly, chapter five recapitulates the key issues of the research, draw inferences and make relevant commendations for possible implementation.



CHAPTER TWO

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1 Introduction

This section audits related writing on common assets, protection, the executives and business manageability. The section shapes an essential piece of the investigation and makes references to over a wide span of time thinks about on the examination. The reason and targets of the exploration are likewise reflected upon and give the premise to looking into the discoveries of the examination (Creswell, 2009).

2.2 Conceptual Review

Natural resource management and conservation is central to worldwide energies to reduce ecological deprivation and advance ecological expansion (Lenton, 2002). This section reviews of key concepts used in the study. The section begins with concepts such as conservation, natural resources, and natural resource management. Other key concepts defined and used in the study include community, conservation, sustainable livelihood and countryside dwellers forest management.

2.2.1 Conservation

Conservation came into utilization in the late nineteenth century and more often than not includes the dynamic administration of characteristic resource to guarantee long haul suitability of resource, however at times, protection implies disregarding the land and natural life (Thoms and Betters, 1998). Protection additionally implies know-how utilization of resources so they can be used minus all potential limitations without being drained (Chapman and Hartman, 1962). Conservation has been advanced as the way to restore local biota, their living spaces and life emotionally supportive networks to guarantee their maintainability and biodiversity (Shuter et al, 1997).





Rendering to Sandbrook et al. (2015), conservation is a discipline with the explicit goal of protecting species from extinction. Pioneer William et al. (2011) characterizes preservation as 'activities that legitimately improve the odds of territories and species persevering in wild'. Soule, (2013), the establishing father of the order Conservation Biology, contended that in light of the fact that new protections objective is to replace the natural assorted variety based model of conventional preservation with something altogether extraordinary, in particular a monetary development based or philanthropic development, it doesn't have the right to be marked protection. He at last characterized preservation as ensuring nature for the good of its own. Hence, preservation can be characterized as the activity to shield regular assets from mischief or inefficient over use.

2.2.2 Natural Resources

The word *resource* has been interpreted narrowly as denoting a physical entity such as land (Czajkowski et al., 2005). Resources refer to a parcel of entities such as land, forests, plants, fuel-wood, water and certain wild animals (Barrow, 1998; Pearl, 2003). Interestingly, characteristically, resources are normally happening assets that are observed as money-spinning to individuals (Eagles, 2002) and in their moderately unmodified structure (Barrow, 1998; Pearl, 2003). Natural resources are regularly ordered into sustainable and non-inexhaustible resources. Renewable resources incorporate existing resources, for example, fish, cocoa, elastic, espresso, and woods which can be supplant or reestablish themselves in the event that they are not over-misused. As the name infers, non-inexhaustible resources can't restock themselves and are limited. Renewable resources are those that can possibly be recharged through characteristic procedures or potentially human procedures. Trees are a case of a renewable resource, in spite of the fact that trees bite the dust normally or are

gathered, new trees can be replanted or permitted to reseed normally. They can be restored both normally and through woodland the executives rehearse. Nonrenewable resources must be overseen legitimately to be economical for who and what is to come, i.e., individuals ought not devour characteristic resources quicker than nature can recharge the supply. Non-renewable resources can be recorded as petroleum products, oil, coal, copper, precious stones, highly flammable gaseous, ironical metal, reserves like diamond, gold, rocks, platinum and so on. When such reserves are expelled, they can't be supplanted. The amount of manageable consuming of a renewable resource is measured by the exchange rate and the degree of standing supply of that precise resources. When ecological resources are scooped at a rate that outshines their consistent rate of replacement, the standing routine will be lessening and, in the end, run out. Now, a characteristic asset could be said to be over-abused which calls for appropriate asset the board. Nonrenewable resources are modest and can be drained. There is constrained amount and once utilized, can't be supplanted in this geologic age (Gritzer, 1991).

2.2.3 Sustainable Livelihood

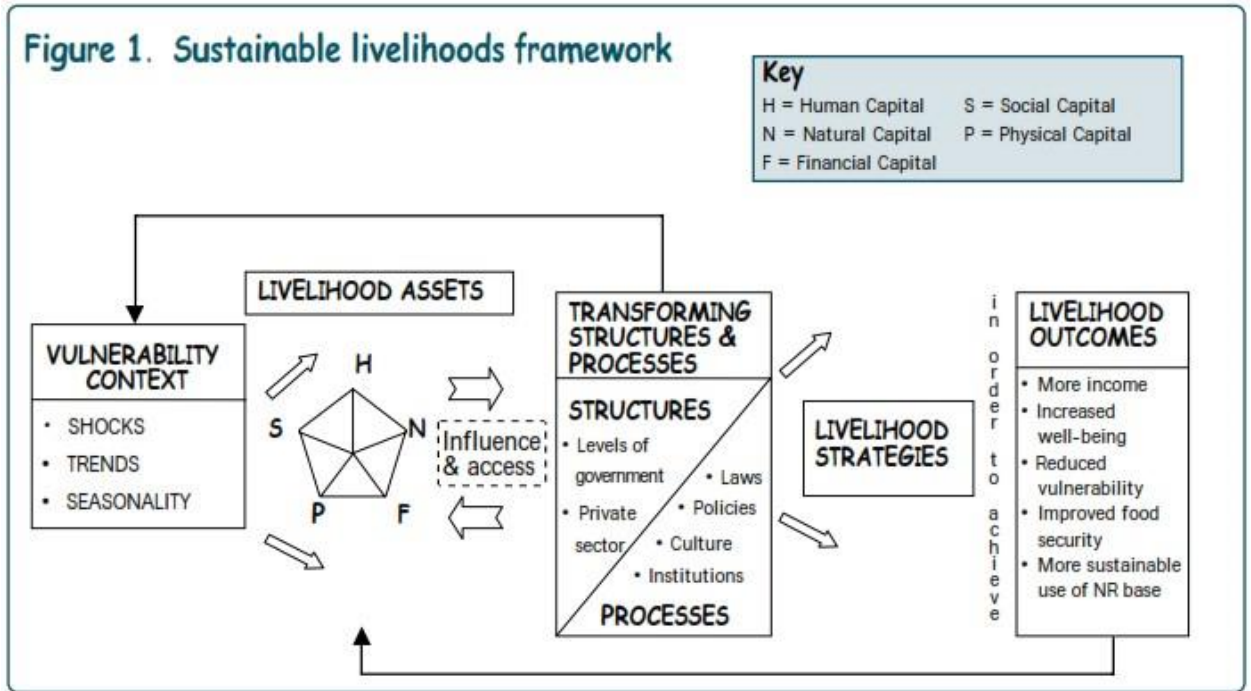
Ecological livelihood thought was original presented by the Brundtland Commission on natural and advancement as a technique for joining fiscal and environmental examinations in a firm, arrangement applicable edifice. The 1992 United Nations Conference on Environmental and Development (UNCED) prolonged the awareness of supportable employment as an extensive inclusion for neediness destruction. It articulated that practical employments could fill in as a coordinating variable that permits strategies to discourse enhancement, supportively resource the administrators and neediness destruction all the while (UNCED, 1992). Along these lines, effort comprises the capabilities, resources and exercises required for a method for existing.



Feasible as indicated by the Commission, reasonable job is the one that be able to acclimatize to and recoup from pressure and stuns, keep up or improve it abilities and resources and gives supportive occupations probabilities to the people to come; and which underwrites overall benefits to different engagements at the community and worldwide dimensions and in long and present moment (UNCED, 1992). The word sustainability is expansive, and the word is enormous, different and complex. For manageability to stay pertinent and a valuable apparatus, it is critical that it adjusts to the community setting. As indicated by the warning panel **for the** workplace of sustainability at the University of Alberta, they set up a composed operational meaning of sustainability for our foundation. It characterized the term sustainability as the way toward existing inside the points of confinement of accessible physical, normal and communal resources in manners that permit the existing frameworks in which people are implanted to flourish in permanence.

2.2.4 Sustainable Livelihood Framework

The Sustainable Rural Livelihoods Advisory Committee (DFID, 1999)'s Sustainable Living Framework is an instrument to enhance our acquaintance of living, specifically the livings of the poor. As a tool for planning and assessing sustainability contributions, the Sustainable Living Framework presents the main variables influencing individuals ' livelihood and typical interactions between people. Livelihood assets, on the other hand, give possibilities to create resilient livelihood pillars for impacted people and families. Access to these resources will not only reinforce their opposition to the danger of living, but will also enhance their living standards in a community at stake. Through the transformation of structures and procedures, effective and effective implementation of these policies would generate sustainable livelihood results as illustrated in Number 2.1



Number 2. 1 The Sustainable livelihoods Framework

Source: Adapted from DFID, (1999).

2.3 Social Exchange Theory

This segment of the survey centers around the hypothetical idea of Social Exchange Theory (SET) just as the procedures and variables engaged with social trade. Real advocates of social trade hypothesis incorporate researchers like Peter et al and George Homans. Communal trade hypothesis gets its quality from two groups of writing, specifically conduct brain science and basic financial matters. Social brain science exemplifies a lot of recommendations that come from trial investigations of creatures in research facilities in which the conduct of gathering "A" effects and is influenced by the conduct of gathering "B" or another. Basic financial aspects, then again, involves a lot of suggestions portraying articulations about free market activity in a supposed impeccable market (Chadwick-Jones, 1976).

Social Exchange Theory is an accumulation of clarifications, suggestions and speculations speaking to specific suspicions about social conduct. The Theory lays on





the suspicion that assessment, basic leadership and social association procedures can't be seen independently from the social setting where they happen (Chadwick-Jones, 1974) and personal circumstance and reliance are focal properties of trade forms (Lawler and Thye, 1999; Zafirovski, 2005). Since the hypothesis of social conduct requires making presumptions, a comprehension of the ideas utilized in creating and breaking down social conduct is an essential to hypothesis building. A portion of the ideas usually utilized in social trade hypothesis building are connection, social fascination, rewards, costs, correspondence, examination level, standards, and similarity. This theory should have been considered for a study of this nature but because of total participation and a move away from the Protectionist model of natural resource management, it remained imperative to consider the Community Based **Natural Resource Management** Theory.

2.3.1 Community Based Conservation and Management Theory

Communal-centered techniques to the earth was originated after affirmations and results since the Brundtland Commission of 1987 and the United Nations Conference on Environment and Development in Rio de Janeiro 1992, which placed the earth certainly on universal advancement programs (UNCED, 1992). The conference in Rio de Janeiro emphasized that characteristic assets particularly in ensured zones can have an influence in practical advancement progression (McNeely, 1993). Fundamentally, this is the ethical contention that defense objectives must add towards and not strife through essential social wants. It remains these apprehensions around the troublesome possessions of struggle completed possession, growth and usage of ecological possessions that have betrothed the consideration of administrations and preservation consultants worldwide.



Different elucidating mixes of rappers are usually secondhand to allude to the idea of network-based protection of common assets. Such rappers incorporate coordinated preservation and improvement, community protection, collective administration or co-the executives. The examination embraces community-based conservation (CBC) to allude to plans led to monitor, ensure and deal with its characteristic assets with the fundamental reason for requesting backing of partners through such exercises that increase protection mindfulness and look to profit these networks. Numerous preservation and natural possessions management representations have been projected to assimilate diverse tactics in natural possessions management progression near countryside dwellers growth. Double frequently quoted representations of community-based natural resources management charters are the populist and rights-based models (Murphree, 2002).

Beneath the populist framework of resource management, vigorous indigenous involvement is clearly fortified. In this manner, investigators such as Western (1994) and others designate it as a broad decentralization of the growth procedure. Growth populism endorses vigorous participation of development leaders exactly from database conception, preparation and execution to nursing and assessment. Various protectionists trust that networks responsible for common asset the executives are preferred supervisors over state organizations, and through preservation rehearses, they will probably improve their monetary prosperity (Western, 1994). The fundamental reasoning of network-based protection the board is that neighborhood networks have been estranged from assets they ought to appropriately possess, control, oversee, and advantage from (Songorwa et al., 2000). There are series of arguments that developments, which are of the persons, aimed at the persons and thru them typically, have superior probabilities of accomplishment and sustainability than

the outdated top-down consolidated resources management style to growth, which tends to relegate local persons.

Promoters of this system stress that network-based protection and common asset the board is a base up as opposed to a top-down methodology: it changes the standard method for getting things done by giving neighborhood individuals a solid voice in land-use choices as opposed to having them forced from above (Lane, 2001). These perceptions are in consonance of the perspectives on Scheyvens (1999) that neighborhood network contribution in provincial improvement ventures, especially in ensured zone ecotourism, can be in all respects decidedly compensating in monetarily minimized areas, in the event that it empowers the practical utilization of regular assets particularly in northern Ghana and upgrades the general population 's command over advancement in their encompassing region.

It is qualified to note anyway that, essentially appointing expert and duty to nearby networks without evaluating the full scope of clients of an asset, the assorted variety of individual benefits and the limit of prevailing neighborhood organizations to assume on extra liability, may not be sufficient. That might just entangle instead of tackle issues related with allotment and the board of ecological common assets. After all-natural life assets have various capacities and are frequently misused by a wide assortment of intrigue gatherings. These heterogeneous intrigue bunches frequently have very unique destinations and asset needs. On the off chance that the devolution of control over access to regular asset utilize ought to be viable and evenhanded, as Kiss (1990) discourses that, it requisitely considers the numerous capacities and assorted client gatherings. He supplementary contends that it is likewise basic that established fortifying and preparing be given by government organizations in zones



of the executives, innovation, initiative and venture arranging abilities to empower better administration of normal assets.

Despite the fact that network-based preservation is primarily worried about natural life protection, it has partisan, communal, and recognized ramifications past untamed life preservation. As indicated by Songorwa et al. (2000), Community Based Conservation approach has the capability of turning into an impetus for socio-political and institutional changes in the networks where it is presented, and may spread to different pieces of the nation, and lead to interest for a much more prominent devolution of intensity. '

Most state offices entrusted with planning and actualizing open preservation strategy, are regularly defied with the test of conceiving administration courses of action, which are steady of the various job needs of various clients, while in the meantime ensuring the long-haul beneficial limit of assets. Experience, notwithstanding, appears, as shown by Songorwa et al. (2000), that focal administrative organizations frequently recourse to guideline and switch of assets and are poorly prepared to direct and oversee multi-item, multi-member asset frameworks. Other writing demonstrates that network foundations have been dissolved and bargained, to the degree that they can't figure out how to take on preservation duties (Barrett et al., 2001). Different shortcomings of including nearby networks incorporate disappointment of national governments to give the networks full duty to oversee, just as absence of limit with respect to the networks (Songorwa et al., 2000). However, compelling administration of untamed life assets requires a suitable blend of nearby and state foundations and associations, which would adjust open preservation approach interests with neighborhood network desires and goals.





The next style is the rights-based model, which is a substitute preparation projected to counterpart the populist approach towards justifiable growth and management of resources at the countryside dwellers level. Beneath the rights-based model, native groups living in and round preservation spots are known, and conferred reverence as landlords of these natural possessions. These clusters are understood to be vigorous contestants in choice creation procedures in the preservation of natural resources. Rights-based management scheme permits native countryside dwellers to exchange admittance and stress their prerogative to resources, which is a significant instrument to broker improved growth chances (Inamdar, 1999). Promoters of the rights-based model designate that rights-based style is troubled with person's prerogatives (what they are or ought to be) and they have an unchallengeable right and the utmost pole and accountability in the growth and justifiable use of the resources in their societies (Nhantumbo et al., 2003). Government works are only anticipated to perform an enabling, intercession and loyal role in humanizing, determining disagreements and integrating the benefits of diverse operator clusters, and providing apt lawful agendas to sustain and strengthen resource usage contracts stretched amongst numerous communal awareness clusters. Aimed at the supervision of wildlife resources, government interventions must deliver satisfactory systematic information to match local person's personal native know how. Communal long-term justifiable livelihood preservation depends upon native person's admittance to data on resource situations and the consequence of diverse resource usage designs. Beneath the rights-based context, substitute revenue generation and livelihood preservation happenings are also invigorated and reinforced by government bio-diversity preservation interventions and non-governmental administrations, in cycle with communal preservation strategy. That would have restrained or alleviate approximately opposing possessions of preservation procedure on communal socio-economic circumstances.

2.4 Conceptual Framework

The conceptual framework to guide the analysis in this study is presented in Figure 2.1. The study of resources conservation and management has correlation between human beings and their way of life. Maximum government interventions tasked with articulating and executing communal preservation strategy, are frequently antagonized with the trial of inventing domination provisions, which are loyal of the miscellaneous livelihood requirements of frequent whiles at the similar stretch defending the long-term prolific volume of resources. Knowledge nonetheless seems, as established by Songorwa et al. (2010), that central administration establishments frequently recourse to guideline and switch of possessions besides are poorly prepared to direct and oversee multi-item, multi-member asset frameworks. Supplementary writing shows that network organizations have remained dissolved and traded off, to the degree that they can't figure out how to take on preservation obligations (Barrett et al., 2001). Different shortcomings of including nearby networks incorporates disappointment of national government to give the networks full duty to oversee just as absence of limit with respect to the networks (Songorwa et al., 2000).



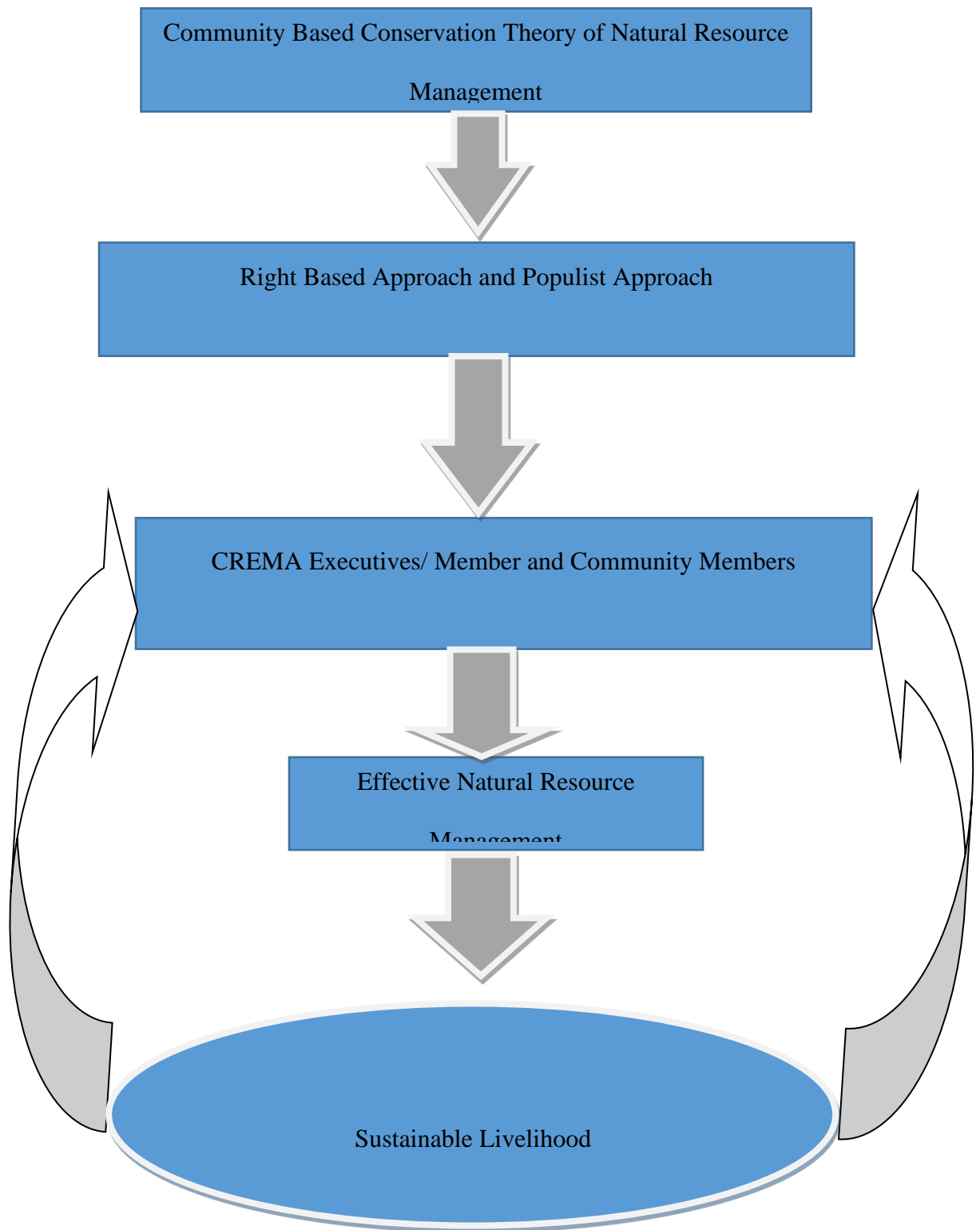


Figure 2. 2 Conceptual framework

Source: Author's construct (2018)

In this study if government agencies like Chakali CREMA liaise with the entire Chakali communities in their quest to conserve and manage their natural resources effectively, it will lead to efficiency in its use and when there is efficiency in the use of resources, it leads to sustainability in the lives of the entire community. So in simple terms, the conceptual framework indicates that, when all stakeholders come together in the effective conservation and management processes of our natural resources, it will lead to efficient use of the resources which will propel the community and its constituents into sustainable livelihood.

2.5 CBNRM as an Instrument for Addressing Global Environmental Challenges

The foregoing segment estimates what CBNRM has carried out throughout sub-Saharan Africa in terms of empowerment, monetary advantages and ecological effect. The valuation is cruelly undemonstrative thru the actual partial accessibility of particular and significant data units. The section broadly shows that some communities were able to create land and herbal resource possession. This control is often fantastically contested, once in a while unscrupulous and has, in some instances, stood retreated. Fiscal blessings were created but classically those supplement surviving resources of sales at a domestic level. Significantly, there are repeatedly more costs, specifically wherein persons halt with natural world. Correspondingly, environmental effects are hard to decide and extremely adjustable, resulting in critiques such as ours being in particular dependent on case have a look at methods in place of populace or panorama stage assessments.

This section will deliberate on CBNRM and the operation of a sub-set of Multilateral Environmental Agreements (MEAs) called the Rio Conventions. MEAs are international lawful arrangements amongst big varieties of countries with the unusual aim of ecological safeguard. They are the favored instrument of the worldwide





network to cope with ecological concerns that interchange nationwide barriers and are consequently nearby or worldwide in scale (TIEMPO, 2004). They aren't knowing, the primary MEAs having remained settled within the initial 1900s (Gray, 2003). In general, there are now over seven hundred MEAs (TIEMPO, 2004). Assessing the effectiveness of MEAs is often very tough and can emerge as incredibly politicized. Here is little question that due to their measure and choice, operative operation of the Rio Conventions is thought-provoking and that perceptible outcomes will rely upon unheard of ranges of world motion, in particular in addressing weather exchange (Stern, 2007).

In the milieu of this subject matter, the roots and the fruition of CBNRM programmes and initiatives throughout Africa is vital. Across the continent, CBNRM databases have advanced endogenously in general in reaction to nearby preservation and growth issues, notwithstanding with a few being identical seriously supported by outside multilateral and bilateral organizations (see Chapter 2). Many of those programmes have developed over a long time, regularly beginning as small pilot tasks unsupported by means of felony frameworks and turning into big programmes with felony and policy backing. CBNRM programmes, therefore, aren't sports that have been developed with the express purpose of pleasing the goals of one or more of the MEAs.

2.5.1 Contribution of CBNRM to Global Goals?

These are a portion of the accomplishments of CBNRM to the extent natural objectives are concerned. These discoveries bolster an ongoing, however wide examination of CBNRM in southern Africa (Roe et al., 2006) which originate:

Biodiversity: There are genuine precedents in Ghana and some other African nations like, Botswana, Namibia, and Zambia where the fundamental projects of CBNRM



have added to the support of prevailing untamed life situations and nature, permitting the repossession of recently exhausted assets and encouraging the re-presentation of locally terminated classes. Climatic change: The protection of complete scenes through CBNRM forms keeps further outflows from land use change, despite the carbon put away in the semi-parched scenes of southern Africa (evaluated at 140t/ha) is essentially lesser than that found in tropical timberlands (250 t/ha¹²). Tanzania gives a genuine model through its CBFM program under which 2.1 million hectares of forest is overseen by towns (Lund and Treue, 2008; MNRT, 2008c).

Desertification: The safeguarding of natural life as a primary land use has been appeared to have noteworthy environmental focal points over domesticated animals and agro-green frameworks in semi-parched and bone-dry rangelands (Child, 1989 and (Du Toit, 1999). In a roundabout way, irritated land likewise gives asset sinks while numerous CBNRM programs give a few incomes that relieve the most noticeably awful effects of either climatic or monetary pressure. Nations or states that neglects to actualize the Multi-National Environmental Agreements (MEAs) are amazingly bombing in accomplishing the objectives of the Community Based Natural Resource Management. A significant part of the global ecological enactment is still exceptionally delicate in nature which has neglected to produce a lot of restricting principles (Birnie and Boyle, 2002).

2.6 Power Devolution Over Natural Resource Use in Ghana

An indispensable research in decentralized authority over possessions is the CREMA idea in Ghana, equestrian beneath the Cooperative Communal Based Wildlife Management policy of 2000 (Annex 1). These zones are connected over arrangements among societies and the Wildlife Division of the Forestry Commission with the aim to help societies to manipulate herbal possessions of their personal woodlands.



Contributing societies are agreed full specialist to manipulate get right of entry to and gathering of possessions in their control area. Each CREMA has an Executive fashioned from Community Resource Management Committees, which themselves are formed of man or woman farmers or land holders. The CREMA technique has been supported through UNDP Global Environment Fund (GEF), European Commission, Dutch Government, CARE International and other groups. Up to date, the assignment has plotted and delineated over 2,000 hectares of customary communal woodland, and is presently inside the technique of acquiring prescribed switch of specialist for the administration of the zones to the native clusters (UNDP, 2008).

To date CREMAs have conveyed a few accomplishments for safety of function belongings via a decrease in illicit sporting activities, familiar to be based at the choice for destiny returns. It is too quickly to skip judgment on effects on vocations, albeit early encounters recommend terrible critiques as CREMA hints limit sure sporting events. Social capital pointers, interestingly, are extraordinarily tremendous, as CREMA individuals see the establishments to work for the gain of all. It is additionally considered too soon to evaluate troubles, as an example, the management execution of CREMAs.

The authoritative structure of CREMAs is apparent, however numerous on-screen characters see them in numerous conducts, as existing fundamentally approximately terrestrial usage, management, verifying customary specialist, verifying PAs, and so forth. What's extra, extensive scope of motive force's act to affect the effects of CREMAs, now not which might be all stuck within the shape of the CREMA model. For instance, even as CREMAs have residency over characteristic property, they don't have residency over land itself, and the land residency framework keeps on affecting

asset use. Land residency to a incredible quantity remains with community specialists, and is a noteworthy motive force of land use, as the ones conceded residency of a place ought to successfully put it to use or they risk losing it. So additionally, vacillations within the international object markets can impact land use inside CREMAs, through expanding or diminishing the estimation of diverse land use physical games.

By and massive there was notable advancement with CREMAs and giant electricity on the community stage. Be that as it could, there have likewise been difficulties and deferrals, the extensive majority of that are institutional, that specialize in terrible correspondence, absence of specialized limit and lack of lucidity of objectives. The CREMA model is fairly Ghanaian, but has some likenesses to CBNRM methodologies utilized in southern Africa (as an instance Namibia) that have been supported by way of an odd kingdom of political, institutional and giver assist. There are issues that if comparative help is not given to the CREMA program, it is able to not recognize a comparable degree of achievement inside the long haul. What has CBNRM performed in Africa? The '3Es' – strengthening, financial topics, circumstance.

Murphree (2008b) recognizes three 'columns' by which the reasonability of CBNRM projects can be assessed: preservation, advantages and strengthening. There are, in any case, potential strains between these columns. The age of financial advantages, for instance, is regularly a basic motivating force for preservation, however expanding asset-based incomes can likewise invigorate expanded neighborhood rivalry and conceivably centralization of advantages (alleged 'world class catch'). At the point when advantages become packed in neighborhood elites in a way that disregards nearby social standards and undermines aggregate activity, it can



neutralize the essential principles and suspicions of CBNRM. Additionally, as assets become progressively important through CBNRM, there might expand enthusiasm at the national or area level in catching network income streams. In this segment we expand on the three columns system to investigate the effects of CBNRM – concentrating on strengthening impacts, monetary effects and ecological effects – and the communications between these.

Empowerment

As Amartya (2000) has contended that, improvement is as plenty about allowing people to take pride in their very own lives and futures as it's far about economic welfare, in keeping with perse. In sub-Saharan Africa, deficiency and underdevelopment are intently associated with the disempowerment and partisan downgrading of humans, in particular rural communities that has come about since the colonial technology. Many commentators argue that community empowerment is one of the greatest impacts of CBNRM (Arntzen et al., 2003; WRI, 2005) – a ways exceeding any financial or environmental blessings.

In the Luangwa Valley in Zambia, Clayton and Child (2003) shows that likely extra crucial than tangible blessings are the organizational capability and empowerment consequences created by the procedure of sales distribution – which entails normal elections, financial institution money owed, audits, and a excessive degree of participation in choice-making by way of villagers.

In Tanzania, the Village Council finances of Ololosokwan village, Ngorongoro District, improved from approximately US\$ 2,500 in 1995-1997 to nearly US\$ 60,000 via 2003 because of the improvement of numerous village-personal quarter tourism agreements inside the intervening length (Nelson and Makko, 2005). This triggered a



great boom in the capacity of the village to spend money on social offerings and provide nearby benefits to village citizens. It also improved the capacity of the village to recommend for its land and useful resource rights, the use of the financial capital from tourism to expand political capital in the warfare over land and aid tenure.

In West Africa, one of the important benefits from land decentralization is stated because the strengthening of community borders from outside aid use and monetary migration (Ibo, 1997b; Stamm, 2000). By mapping and imposing community limitations, groups are furnished with prison backing to prevent access to, and use of, their lands.

In the DRC, CCAs were hooked up below the request of neighborhood communities, with the goal of protective their territory from external degradation (both from displaced groups, financial migration, or industrial logging).

However, CBNRM may additionally or may not fortify neighborhood level governance institutions. In Botswana, there had been repeated instances of local trusts embezzling or mismanaging sales from wildlife-primarily based organizations, which Rihoy and Maguranyanga (2007) attribute both to the function performed by neighborhood elites and the way CBNRM has been facilitated, with a lack of long-term investment in building neighborhood capacity. In Kenya, pastoralist Group Ranches have repeatedly failed as collective useful resource governance institutions, main communities to individualize formerly communal pastures and are trying to find new, normally smaller collective landholding arrangements (Mwangi, 2007).

In West Africa, mapping and authorizing network limits for land enrollment can improve the potential of networks to forestall outer abuse of their property, however in which the countrywide framework for executing decentralization association is



powerless, new legal guidelines ashore residency can serve to add similarly perplexity to an effectively pluralistic framework and in all likelihood similarly debilitate conventional community the executives. For instance, in Cote d'Ivoire, feeble authorization of countrywide residency approaches, blended with an intense hobby for land has made new 'center of the street' foundations, falling amongst 'traditional' and 'kingdom' residency legal guidelines (Stamm, 2000). Comparable debilitating of conventional systems can be discovered in Central Africa; in Gabon state obligation for forest has dissolved the standard framework, which relied on apparent tribe and family possession and energy with the intention to differentiate and authorize chasing and horticultural limits (Pourtier, 1989; Starkey, 2004).

Certainly, neighborhood governance isn't any panacea for institutional transparency and equity. In Tanzania, Brockington (2008) evaluations village governance in Rukwa area, and describes multiple incidences of coercion, illegal activity, loss of transparency, fraud, and excessive degrees of taxation and not using a corresponding degree of investment.

2.6.1 African Communities and Natural Resource Management

In spite of the fact that there are broad instances of bungle, extortion, and moderately useless aggregate administration at the neighborhood level, perceive that administration is a versatile social procedure. Straightforward aggregate neighborhood administration organizations are profoundly far-fetched to rise medium-term, especially where establishments are recently made, and set aside effort to develop. This has been one of the fundamental exercises of CBNRM all through sub-Saharan Africa. In Zimbabwe's CAMPFIRE program, for instance, there are various instances of networks experiencing periods of solid neighborhood the executives substituting with times of lower straightforwardness and higher world



class catch (Taylor and Murphree, 2007). These stages are likewise affected by administration elements at non-nearby scales, for example, changing national political conditions (Rihoy et al., 2007). Neighborhood frameworks of responsible administration set aside some effort to advance, as systems of responsibility create and are adjusted to nearby social standards. For instance, Lund and Treue (2008) in their survey of network-based woods the board in Mfyome town, Iringa, Tanzania, refer to instances of degenerate town government officials being shot out from the executive's panels after reports of misappropriation.

A key issue for CBNRM changes' effects on neighborhood administration and the strengthening of country natives lies in considering not just how much power is being moved to the nearby level, yet in addition how much the beneficiaries of decentralized expert are responsible and vote based. Mamdani (1996) contends that numerous neighborhood government experts, including nearby on-screen characters regularly confined as 'customary' rulers by provincial overseers, in African states add up to types of 'decentralized dictatorship'. Ribot (2004) expands on this work in pointing out that decentralization of NRM could possibly be equitable, contingent upon whether forces are moved to downwardly responsible nearby organizations. CBNRM is prefaced on nearby aggregate activity driven by shared advantages, and the neighborhood institutional scene is basic to empowering such participation.

Who gets enabled? African social orders, regardless of whether customary or present day, are typically not homogenous or carefully libertarian networks, however are liable to a wide scope of social and monetary types of separation. CBNRM is tied in with cultivating aggregate activity for administering characteristic assets at the neighborhood level, yet it is practically unavoidable that such aggregate activity will profit some nearby on-screen characters more than others. CBNRM activities should





take care to know about these neighborhood types of separation and rejection, and to guarantee value and comprehensiveness where conceivable, yet it is exceptionally improbable that CBNRM itself can or should address every single nearby type of disparity, some of which might be emphatically grounded in neighborhood social standards and convictions. In any case, It is fundamental for CBNRM endeavors to be conscious of the approaches that mediations, specifically those that appearance to make new asset the board institutions, might be one-sided in the direction of specific social gatherings or elites, and the way new asset management measures can also disseminate expenses and blessings in differential approaches. For instance, many nations in West Africa have embarked on – or completely set up – decentralization policies and growing neighborhood level systems are being established for NRM. At the identical time, traditional land and aid control structures have endured in the region – frequently because of the weak spot of the kingdom authorities and occasional degrees of cognizance and enforcement of state coverage. The new institutions installation beneath the decentralization procedure undoubtedly empower neighborhood communities with newfound rights over sources – but at the equal time can undermine and disempower present neighborhood institutions.

In Cameroon the present changes to the Forest Code, in spite of the fact that furnishing networks with rights to deal with their very own timberlands, can frequently conflict with conventional ranger service laws and customary power structures. On account of the Ngola-Achip Community Forest in East Cameroon, set up in 2001, Kenneth (2006) contends that networks need to make an authorized relationship so as to make backwoods hold; these new power structures can disturb customary administration structures, making another 'first class' inside the town.



Strengthening of one network or social gathering can impactfully affect different gatherings. In West Africa, for instance, mapping of residency rights, which is a piece of the decentralization procedure has implied that monetary transients (frequently moving from northern nations into the Gulf of Guinea) can lose residency rights in their very own locale (IIED, 1999), and, as outcasts, be denied access to new networks.

Contrasts in land use and power between ethnic gatherings can likewise bring about one gathering prevailing with regards to verifying area rights over another, because of decentralization approaches. For instance, in Central Africa one of the ethnic gatherings that are frequently alienated by decentralization are the Ba'aka (Joiris, 2000), because of their regularly remote and roaming method for living, and the view of dwarfs as a 'lesser' ethnic gathering by numerous Bantu gatherings.

The wonder of 'first class catch' where the most dominant or most extravagant individuals from a network can hold onto an unbalanced degree of intensity and additionally advantages can compel or undermine the expected results of CBNRM.

For instance, decentralization in Mali gives a case of how town committees can reinforce the neighborhood first class, as opposed to giving a network voice. Under the 1991 decentralization declares in Mali, angling chambers were set up at provincial levels, and the executives boards of trustees in towns. In any case, the neighborhood angling boss' *ji tigi* are regularly chosen into the territorial committee positions – because of their nearby impact, which has brought about the most dominant individuals from the network reinforcing their voice in basic leadership (Kassibo, 2002).



In Kenya, the Group Ranch structure of land and aid management has confirmed to be fairly at risk of manipulate by means of neighborhood elites, who've tended to reward themselves with allocation of lands and revenues in many regions, thereby converting communal belongings to individual belongings (Mwangi, 2007; Thompson and Homewood, 2002). In Tanzania, growing local revenues have often led to neighborhood disputes over economic allocation, or a well-known emergence of patterns of non-transparent fiscal control (Sachedina, 2008). In the same area, although, there are cases of local groups constantly keeping management accountable via electoral and social sanctions (Nelson and Ole Makko, 2005). This exhibits the inherent variability in nearby governance performance that could be a characteristic of CBNRM, as with governance in human societies in widespread.

Elite seize is not always taken into consideration as a awful component. During the Makuleke land declare system in South Africa there has been warfare among the traditional chief and the brand new, democratic Common Property Association which had instituted the land claim. In this situation, the royal circle of relatives received numerous blessings from the Common Property Association, however the majority within the community were happy with that and felt the royal circle of relatives have been the rightful beneficiaries (Collins and Snel, 2008). Furthermore, elite seize on the neighborhood stage due to CBNRM may additionally truly be changing the elite seize that might have befall at district or countrywide ranges within the absence of CBNRM. Any evaluation of the fulfillment of failure of CBNRM in a selected location or context hence desires continually to take account of the counter-factual – what might have befallen inside the absence of CBNRM and wouldn't it have been any better?

2.6.2 Ghana's Position on Natural Resource Management

Ghana's forestry history goes back to 1906 when law was instituted to control the felling of gainful tree species. The outline and reservation of the timberland bequest was finished in 1939 and a Forest Policy report was embraced in 1948. The approach accommodated the creation lasting bequest for the welfare individuals, insurance of water supplies, and upkeep of great conditions for horticultural harvests, just as state funded instruction and research (Ghana Wildlife Department, 1997b, p. 10).

Ghana's fundamental regular assets incorporate gold, timber, mechanical jewels, bauxite, manganese, fish and elastic. Throughout the years, the name of the service in charge of normal asset frequently changes dependent on their approach's accentuation. An occasion is amid the mid-1990s, the service of grounds, ranger service and digs were in charge of normal assets. Preceding change in government and a move in arrangement, the name of the service was changed from service of grounds, ranger service and mines to service of Lands, Forestry and Energy. Be that as it may, presently, we have a Ministry of Lands, Forestry and Mines just like the case in the mid-1990s.

Under the Ministry of Lands, Forestry and Mines, there exist the Forestry Commission (FC) and two other executing offices in particular, the Lands Commission and the Minerals Commission. The Wildlife Division which until 1999 was known as the Wildlife Department is one of the three divisions of the Forestry Commission. It started as a part of the Forestry Commission of the Ministry of Agriculture in charge of untamed life issues. The Ghana Wildlife Division is in charge of all-natural life in the nation and directs 18 untamed life secured territories (PAs), five seaside Ramsar Sites and two zoos, one in Accra, and the other in Kumasi, in the Ashanti area (Ghana Wildlife Department, 1997d, p. iii). The Wildlife





Division of the Ghana Forestry Commission directs or oversee 18 ensured territories, which incorporate seven national parks, six asset saves, four untamed life havens, and one severe nature save. Together, these zones represent 5.7% of Ghana's complete land territory (Ghana Wildlife Department, 1998, Vol. 8, pp. 1-2). The Ghana Wildlife Division with a head-office in Accra is the sole expert in charge of ensured territory the executives in Ghana. Ensured zones are scattered over the 10 areas of Ghana. In the Upper West district of Ghana, the Ghana Wildlife Division oversees three extensively separated secured regions, the Wechiau hippopotamus asylum, the Zukpiri CREMA and the Chakali CREMA.

2.6.3 Communal Involvement in Natural Resources Management

Operation communal participation in natural resources management is an indispensable network towards protecting justifiable living of its persons. Larson and Ribot (2007) on this note distinguished that CREMA has established rules wide-ranging involvement procedure that encompasses all societies and appropriate stakeholders. This procedure and succeeding endorsement of rules go a long way in guaranteeing free, prior informed consent (FPIC). The rules are completed in such manner that the native societies will comprehend their strong character desired after it arises to fortification of the natural flora. Numerous explanations were verbalized to the idea of communal involvement. Amongst the classifications include communal cooperation, neighborhood investment, individuals' interest and coordinated administration. All these anyway signify that there is a communication of specific gathering with others in order to accomplish certain particular results the extent that the administration of its regular assets is concerned. Numerous individuals take part for a few reasons. As indicated by Akitanda (1994), nearby interest is when individuals are enabled to assemble their own endeavors with the goal that they

become open on-screen characters as opposed to latent subjects, to pact with their possessions, resolve on selections and arrange the movements that effect their lives. As it were, the network can utilize one of the numerous methodologies, for example, network assets the executive's zones (CREMA) in support towards the establishment of by-laws to direct its assets.

2.6.4 Taboos and Totems in Natural Resource Management

Academic works have appeared in Ghana, social orders secure their regular assets utilizing taboos and totems (Abayie-Boaten, 1998). For instance, Millar (2004) contends that the enchanted world in Ghana is the significant main impetus that controls the exhibition of every single customary foundation in their interest to oversee characteristic assets. Untamed life species viewed as totems in numerous piece of Ghana have their old or socio-social ramifications just as their representative nature of tribes that cling to it. Quarcoopome, (1987) backs the above exchange by including that creatures are picked as totems since they are said to have possibilities, which individuals would need to copy along these lines individuals perceive themselves with such creatures. For all intents and purposes all the ethnic gatherings in Ghana have comparable totemic creature images, however various meanings that they dole out. In any case, reference is produced using Sankana people group in the upper west locale. Sankana is situated in the Upper West Region of Ghana. It is around 14km from Wa the provincial capital and it covers around 322 hectares of the absolute land territory of the locale (Issifu, et al., 2013). Dagaabas and Sisaales are the two noteworthy clans in Sankana. The Dagaabas comprises 94% of the all-out populace and the Sisaales speaks to 4% of the populace. Be that as it may, other ethnic gatherings, for example, Frafras, Walas, and Akans comprise 2% of the absolute populace (Issifu et al., 2013). The people group has taboos and totems which



controls the conduct and the lead of the general population. These taboos incorporate yet not restricted to whistling in the night, murdering and eating of frog and python. For whistling, it is accepted to welcome malice spirits.

As indicated by oral custom, a python is accepted to have transformed into a log and helped the progenitors/ancestors of the network to cross a stream amid an assault by their adversaries. Amid the pioneer period, slave pillagers, including Babatu and Samori frequently assaulted and caught the poverty of Sankana for the subjugation trial and other financial exercises. The general population utilized a few methodologies to keep these slave bandits from assaulting them yet without much of any result. Their populace began contracting in view of the various assaults and the catching of the vivacious people. The general public through their conventional pioneers at last chose to voyage to a more secure spot to help keep away from the slave marauders. At a point in their adventure, it wound up hard for them to go any further, in light of the fact that there was the need to cross a waterway. In the times of yelling and questioning, they found a sign on the stream that helped them to traverse the waterway. After they had all crossed the waterway, it wound up realized that the log that helped them to cross the stream was not a normal log but rather a python, Diawuo and Abdul Karim, (2015).

From that point forward the progenitors sworn not to execute as well as eat pythons, since they considered the python a savior and a helper, subsequently, their totemic creature. It is additionally trusted that, should anybody from the clan slaughter or eat a python they will change into a python and maybe pass on, essentially on account of the connection they have with them. This affirms Quarcoopome (1987) attestation that totems are the linkage or dealings between an individual or gathering of people and their item or a gathering of creature objects.



Therefore, there are numerous pythons found in and around collapses a few areas of the network. Vacationers, and at times network individuals frequently visit these pythons amid celebrations. The collapses Sankana additionally filled in as spot of asylum for their progenitors to escape their adversaries in the seasons of war. The caverns again filled in as financiers for the activist to battle the slave marauders and offered them security against wild creatures. As

Kawano (1999) expressed the general population of Sankana would keep running into enormous caverns to cover up and activated plans to ward off the slave bandits and look for an impervious sanctuary. Discharges and chasing is restricted at the cavern locales in light of the fact that such demonstrations are accepted to welcome the fury of the cavern divine beings who disallows clamor making, thus such preclusion in and around the cavern destinations has turned into a prospect for natural life preservation.



Totemic Frog

Source: Adapted from Diawuo and Abdul Karim, 2015.





Title: Ancient Cave at Sankana.

Source: Adapted from Diawuo and Abdul Karim, 2015.



Title: Totemic Python

Source: Adapted from Diawuo and Abdul Karim, 2015.

2.7 Sustainability in Natural Resources Management

The idea of maintainability is unavoidable to the extent backwoods asset the board and normal assets the board is concerned. Since woodland assets can lessen after some time and in particular network interest is picking up grounds, there is the need subsequently, to make it feasible for one and all particularly networks around the timberland to comprehend the idea and to utilize the backwoods to suit it reason. It is





through this that reasonable improvement in asset the executives can be accomplished. As indicated by Mitchell (1997), the normally utilized meaning of feasible improvement from the Brundtland Commission is that sort of advancement which fulfills the wants of the present ages and in the meantime brands it workable for the individuals who are hitherto to come to likewise satisfy their requirements. By and by, it has been less associated with the explanation that maintainable advancement comprises of two noteworthy thoughts. These are needs, especially the requirements of the needy individuals on the planet, to which supplanting significant concern was important and limitations created because of innovation and societal affiliation regarding the capacity of the earth to encounter mutually present and forthcoming wants. The Brundtland Commission additionally arranged the accompanying seven (7) critical targets for condition and advancement core values:

- ✓ Stimulating advancement;
- ✓ Changing the estimation of development (featuring on advancement extra than development);
- ✓ Satisfying the essential wants for businesses, sustenance, influence, aquatic and cleanliness;
- ✓ Guarantying that the dimension of populace is supportable;
- ✓ Conserving and building up the asset base;

- ✓ Re-modifying innovation and limiting danger; and

- ✓ Assimilating condition just as financial aspects amid basic leadership.

The Worldwide Conceivable Discussion Repetto (in Ulhoi et al., 1996) see maintainable improvement as a target that disposes of systems and activities which assent with present-day breathing qualities by debilitating the gainful ignoble, for example, the normal assets, while the future ages are left with less fortunate asset base than the present. Then again, present thoughts need not harm the forecasts for saving or creating forthcoming breathing standards. Additional accentuation was made that numerous imperative variations are fundamental to comprehend economic improvement:

- ✓ A unflinching statistic modification of the total populace to little genetic and passing rates;

- ✓ A control transformation of capability underway, use and developing reliance on inexhaustible sources;

- ✓ A asset changes to reliance on benefits from the ecological assets with no obliteration to nature;

- ✓ An monetary change to practical improvement and a broad dispersion of its benefit; and



- ✓ A political change to a worldwide collaboration dependent on adjusting enthusiasm including the North and South, East and West.

Ulhoi et al. (1996) declare that reasonable improvement can be attainable just after the existing biological hindrances income been confined. The systems for understanding this incorporate the use of fitting mastery, the board of sustainable assets to accomplish increment regular yields, interest in absorptive capacity, reprocessing and moving far from the utilization of assets that destroy, for example, oil and coal. This narrates the possibility of supportability to assets and the usage of abilities, and financial improvement and growth.

A contrast between feasible usage and supportability has been suggested by Ulhoi et al. (1996) that the previous is seen as a discretionary development and improvement hypothesis. Then again, maintainability is considered as a broad marvel, that acknowledges moral traditions for the continuance of living issue, the benefits of who and what is to come and the associations responsible for ensuring that such rights are totally in full use really taking shape of arrangements and their usage. In this manner, maintainable advancement is fundamental, yet deficient device to accomplish supportability. The points of manageability couldn't be accomplished when the belief systems behind maintainable improvement are not incorporated.

Ulhoi et al. 1996) portray four parts of manageability which are; destitution, populace, skill and lifestyle, yet prohibit the difficulty of system which could be utilized to create the political will for excruciating yet, basic, change to other people. The meaning of supportable improvement by the Brundtland's bonus as portrayed has realized two differentiating reactions. One is the utilization of an alternate portrayal of practical improvement, as a standard advancement despite the fact that at a lesser rate, while the other is of the view that, reasonable advancement is that sort of



improvement where there would be no development when the conveying capacity of the earth is surpassed.

By the by, it has been focused on that: common assets the board goes for manageability: supportable asset the board has been characterized in the Brundtland Commission Report (UNCED, 1987) as a sort of advancement that should 'guarantee that it addresses the issues of the present without bargaining the capacity of future ages to address their own issues'. Supportability isn't just natural or monetary yet in addition social. There is a rising accord that the execution of supportable advancement ought to be founded on nearby dimension arrangements got from network activities (Makela, 1999). The International Labor Organization (in Ulhoi et al. 1996) pronounces that, supportability can be depicted in various ways, for example,

- ✓ A minute in period, that is the present just as what's to come;
- ✓ Wants, predominantly satisfying the wants of deprived persons;
- ✓ Restrictions of learning and agreeable affiliation;
- ✓ Incorporated procedures to methodologies and their executions; and
- ✓ Management of ecological assets.



It is trusted that the possibility of economic improvement points totally to relate the conservation of some particular assets to the formative necessities of the populace whom to some degree depend on that asset for their subsistence Odoi (1996). The contention proceeds with that continuing this connection ordinarily has three measurements:

- ✓ If the advancement prerequisites of the general public might be accomplished after various foundations, it would decrease the impacts of their activities on the asset to be saved (Substitute job method).
- ✓ It can't be foreseen that social orders which are deprived would be engaged in protection once they have not had the capacity to fulfill their essential wants. Thus, there ought to be endeavors to upgrade their communal and financial well-being all together that they will be in a circumstance to turned out to be increasingly inspired by preservation (Economic advancement approach).
- ✓ It is increasingly plausible for nearby networks to agree to protection and the executives of asset use in the event that they can get a few benefits from it. As such the asset can be safeguarded while a portion of the central prerequisites of the populace are accomplished from manageable utilization of the assets (Participatory arranging approach).
- ✓ In addition, it has been contended by certain individuals that the idea of manageability is firmly connected to the idea of absence of progress. Their thought of supportability particularly of the world's backwoods includes the



possibility of no decrease in woodland territory, timberland condition, or the large number of asset and non-asset esteems that backwoods accommodate people. Before, this has been irrational. As the human populace has developed from an expected 1 to 10 million 12,000 years prior to around 1 billion 200 years back to roughly 6.5 billion out of 2004, as much 40% of the world's backwoods spread has been evacuated (Salim and Ullsten, 1999). Horticulture, urban areas, streets, electrical cables, repositories, and other land utilizes that serve the extending populace have supplanted timberland related land employments. Supportability of woodlands at the worldwide dimension has been an alluring yet unattainable perfect as long as human populaces and their per capita effect on timberlands and particularly normal assets all in all. It is presently time to structure approaches to defeat the social and political hindrances to accomplishing the environmentally conceivable feasible connection among individuals and the normal assets (Kimmins 2004).

2.8 A Typical Ghanaian Perspective of the CREMA Concept

The Community Resource Management Areas (CREMA) component is a creative common asset the executives and scene level arranging apparatus for network activities. It was created by Ghana's Wildlife Division, an arm of the Forestry Commission, together with its accomplices, to help network asset the executives in off-hold (un-gazetted) lands. CREMAs fill a basic hole by giving networks the privilege to oversee and profit financially from their characteristic assets. While Ghana's Constitution vests responsibility for land in the Stool or Skin (the conventional or standard authority structures that direct a specific ethnic gathering, faction or clan and the related land and assets) it gives the Government the privilege to deal with the normally happening assets for financial addition (Dadebo and



Shinohara, 1999). This has brought about a progression of unreasonable motivators (Richards and Asare, 1999) that, throughout the decades, have would in general drive 'illicit' asset use and debasement or deforestation of the backwoods assets. The CREMA speaks to a significant approach move by allowing networks, land proprietors and land clients a chance to oversee and oversee backwoods and untamed life assets inside the limits of the CREMA, and to profit monetarily or in kind.

In Ghana, the CREMA procedure has pursued an almost 20-year advancement from a scholarly idea to an endorsed pilot activity lastly to an approved instrument, which is presently looking for full legitimate support from Parliament. As initially considered, the CREMA approach gave a system by which the Wildlife Division could exchange specialist and obligations regarding natural life to provincial networks. It indicated a geologically characterized territory blessed with adequate assets where the general population had sorted out themselves with the end goal of maintainable administration of their regular assets (Sheppard et al. 2010). The point was to urge nearby individuals to coordinate untamed life the board into their cultivating and land the executive's frameworks as an authentic land-use alternative (Asare, 2000). The CREMA idea formally rose up out of the 1994 Forest and Wildlife Policy, however it took the better piece of 10 years for networks to place it energetically.

2.8.1 Ghana's Community Resource Management Areas (CREMAs) Structure and Process

Community Resource Management Areas (CREMA) improvement is certifiably not a hurried procedure as, typically, it takes around three to five years until introduction. It is contended that fruitful community-based administration is a versatile procedure (Sheppard et al., 2010) that necessitates tolerance and a continued responsibility from all partners as communal accord construction and basic leadership don't occur without



any forethought and can be loaded with complexities. One of the best qualities, in any case, of the instrument is that it is established upon conventional or neighborhood convictions and esteem frameworks, while being comprehended inside a majority rule basic leadership and administration process. For instance, numerous CREMA limits are attracted by conventional territory limits, and CREMA by-laws frequently fuse or get from neighborhood standards or customary frameworks of woodland and natural life the executives.

All useful CREMAs go under a two-layered administration structure (Figure 2.2), an affirmed constitution and guidelines, backing as nearby administration rules, the ability to connect with their very personal control and the expert to create income from normal asset the board. What's more, CREMAs more likely than not characterized limits that are settled upon by all partner community and the conventional administration, whereupon a long-haul vision, objectives, the executive's plans, exercises and guidelines are, concurred (Asare et al., 2012). In that capacity, CREMAs speak to a solid community structure that encourages scene arranging, law based basic leadership, community-based administration and neighborhood plan of advantage sharing understandings for all partners. A CREMA is formally introduced when the service is adequately fulfilled to issue an official Certificate of Devolution of rights over characteristic asset the board to the nearby CREMA foundation (Asare et al., 2012).



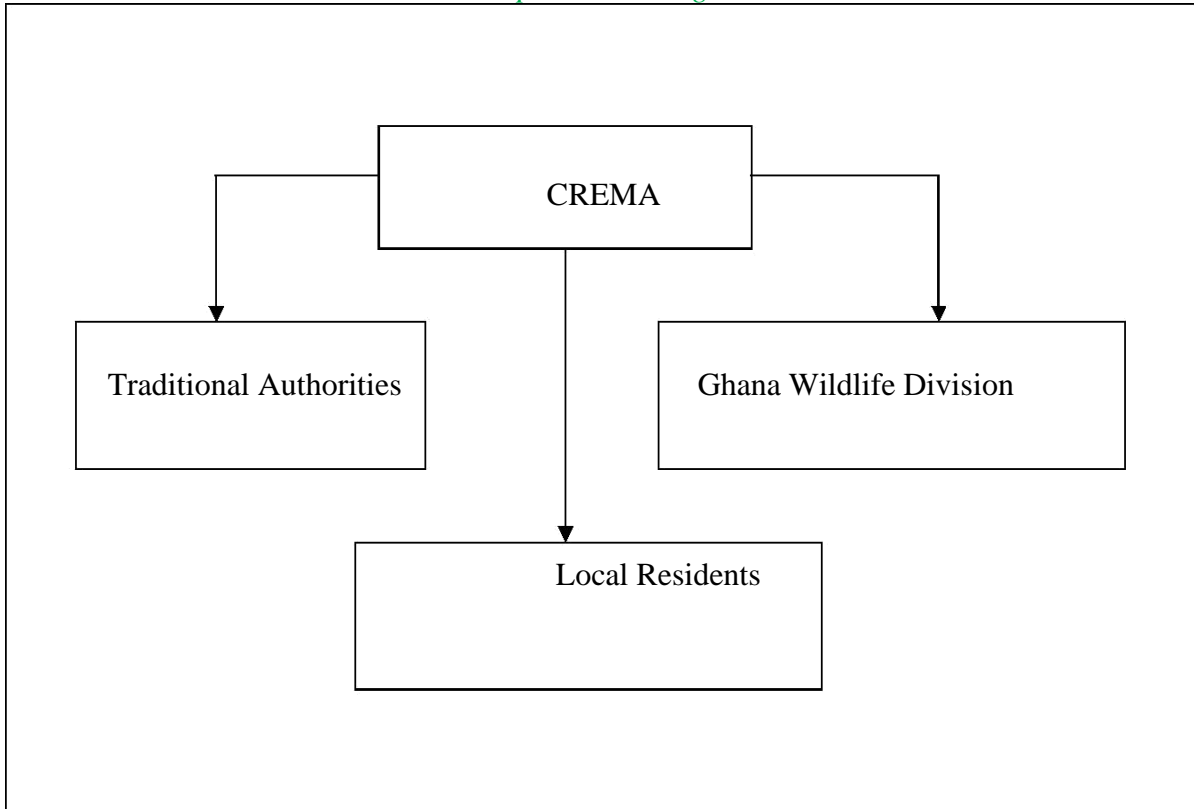


Figure 2. 3 structure and authority of CREMA

Source: Adapted from Bandoh, (2010).

The CREMA advancement process for the most part starts with an underlying appraisal and discussion period in which an outer partner (NGO) or an administration office (Wildlife Division) works with community pioneers to survey whether or not the location is a probable CREMA or not. Basic elements incorporate the communal construction and dimension of association, land residency routines in the objective zone, existing zone usage performs and present employments of characteristic assets by the societies that may shape some portion of the CREMA. On the off chance that the outcomes foreshadow well for CREMA improvement, at that point the community heads and conventional experts must consent to participate in the CREMA procedure (Asare et al., 2012). This is normally trailed by various point by point thinks about including a financial and ethnographic review, an organic study, an ethno-organic overview and an evaluation (counting mapping) of land uses, territories



and common asset the executive's frameworks. Boundless sharpening pursues, coming full circle in the commencement of the procedure to assemble the CREMA.

The initial step is to build up the CREMA executives' structure. At first, this includes the production of a community resource management committee (CRMC) in each CREMA community. Panels regularly comprise of 5– 13 people who are selected or chose amid a town wide gathering, and who sufficiently speak to the different sub-bunches inside the town (Agidee, 2011). The job of the CRMC is to help imagine the objectives and destinations of the CREMA, to actualize exercises and to fill in as the primary contact between the CREMA Executive Committee (CEC) and the individual community. In the long run, CRMC delegates and conventional pioneers meet up to draft a constitution. A constitution in the CREMA setting is an implicit agreement that sets out the authoritative structure, characterizes the 'community' and its motivation and sets the fundamental standards and guidelines that all will comply with. Following counsels with the majority of the networks that make up the CREMA, and with the Wildlife Division (Forestry Commission), the constitution is reviewed and sanctioned at a last gathering with CRMC agents and customary pioneers. Delegates from the community boards of trustees are in this manner chosen to serve on the CEC, notwithstanding other co-picked asset people (Agidee, 2011). The CEC is the general administration body that coordinates and supervises CREMA tasks and basic leadership.

The following stage is to characterize the CREMA limit in order to decide the zone inside which the constitution is enforceable. This limit, which characterizes the 'community', ought to be plainly set apart as it will at last be supported by District Assembly by-laws. Amid this time, the CEC and the CRMC likewise participate in land-use arranging, build up a system and set of exercises (the executives plan) for



the CREMA, and characterize the fitting advantage sharing course of action for income that will be created. These consultations inevitably finish in the order of increasingly point by point CREMA principles and guidelines (Murphree, 2008).

All CREMA partners must concur upon an advantage sharing course of action that mirrors their qualities, desires and needs. Advantages as a rule incorporate money related just as non-monetary assets, including installments at the individual or family level, access to data or agronomic assets, community advancement activities and grant reserves. At the point when CREMAs start to create income, straightforward money related administration is urgent. Numerous signatories on a neighborhood ledger, visit oversight and examining of records by the CEC and an outsider substance, and interest in trust reserves, overseen by an outsider, are only a portion of the manners by which existing CREMAs have attempted to encourage budgetary straightforwardness and responsibility (Agidee, 2011, in Bandoh., 2010).

The last advance before authority acknowledgment for (introduction) is for the CEC, customary specialists, the Wildlife Division and the District Assembly to audit the majority of the CREMA principles and guidelines with regards to other national laws and District Assembly by-laws. The CREMA rules are then drafted as area by-laws and in the long run displayed for discussion and sanction before the General Assembly of the District Assembly. The last advance is the initiation of the CREMA and the issuance of an endorsement of devolution by the directing Minister, who gives the CEC the expert to deal with its characteristic assets. This isn't, be that as it may, the finish of the procedure, but instead a move from improvement to everyday tasks (Wildlife Division, 1998).

While CREMAs are bolstered by Ghana's Forest and Wildlife Policy and Ministerial assent can be given to individual CREMAs, the CREMA system presently can't seem



to get express administrative expert from Parliament. This is a vital last advance in meeting CREMAs with full rights to oversee and profit by the wood's assets, and ruins a shortcoming of the component (Murphree, 2008). Until such time as the Assembly favors the original Forest and Wildlife Bill, which incorporates language on CREMAs, CREMAs have the alternative, under Ghanaian law, to join as a legitimate element (corporate) that is allowed to go into agreements for its participation, and can fill in as a successful construction for the conferment of rights and advantages (Agidee, 2011).

2.9 Western World vs African in Natural Resource Management

From the season of pre-pilgrim time, Indigenous Knowledge Systems (IKS) in regular asset the executives have been a piece of Africa's custom, built up so as to address various tenacious difficulties. IKS are privately worried about and have persevered through the trial of time. However, European settlers who colonized the landmass looked to annul, corrupt or consign them and supplant them with Western feelings and strategies, which were in accordance with their selfish objectives of colonization (Mapira and Mazambara, 2013).

Already, oppression and the presentation of colonization, the neighborhood individuals of Africa were abundantly worried about their characteristic setting. They dealt with their regular settings for such a significant number of years. What's more, thus, nobody could botch his/her regular setting and go unpunished without the outrage of the divine beings. The indignation

and discipline that were orchestrated people who blundered their normal assets were serious, and that drove network individuals to be careful in using the accessible assets. In this way, certain regions, for example, backwoods, water bodies, mountains



and a few creatures, among others, were viewed as sacrosanct and were not to be hurt (Diawuo, 2015)

Past that, specific regular assets must be utilized after the interests performed ceremonies. These practices helped in the administration of characteristic assets, and other living things, including angles, wild creatures, trees, backwoods and water bodies. Paula (2004) recognized that, the misuse of the characteristic assets was deliberate and done through the motivation of soul mediums and through the direction of conventional organizations.

Different neighborhood convictions and practices have added to nearby regular asset the board. Customary organizations have effectively assumed key jobs in guaranteeing that the individuals who disrupted common asset the board guidelines and standards were rebuffed. These mutual activities in regular asset the executives were conveyed through religious convictions and good authorizes, and a scope of hallowed and social practices. The versatility of these convictions and practices stood the trial of time in regular asset the executives utilizing taboos, totems, customary secured territories, moral authorizes and principles and guidelines (Millar, 2004).

Despite what might be expected, Westernization promoters would contend that the motivation behind why Africans did not impede with the common setting for monetary development and improvement was the way that they were living in crude social orders and required imaginative reasoning, innovation and the capacity to progress. Regardless of whether Africans lived in numbness, at any rate they should give the required recognition for leaving their condition undestroyed for successors. Colonization and Westernization through formal instruction and Christianity have a great deal to fault for making disturbances certain rich customary frameworks important for common asset the board. Formal instruction and Christianity have



rather dissolved the rich social qualities and religious decent varieties of indigenous Africans in Africa and have additionally changed their convictions and love frameworks (Smith and Wishnie, 2000). As appropriately opined by Hyma (1999) and Appiah-Opoku (2007) that preceding colonization; indigenous African rulers involved a special position in the administration of regular assets. They were, along these lines acknowledged by their kin as the overseers of religious, political and profound epitomes of their networks, with the duty of overseeing and holding in trust of both normal and network assets for the living and the dead.

As indicated by Belhag and El-Kabir (1986), early ministers in Africa "denounced African traditions and foundations and showed social standards of nineteenth-century Europe just as they solidified an ethical code of widespread legitimacy" Colonization is consequently, a noteworthy reason for Africa's exit in their method of normal assets the executives (Fairhead and Leach, 2004). Fairhead and Leach (2004) recapped that, times of colonization in Africa have distanced its kin from their customary methods for overseeing and using their common assets.

In Ghana for instance, the ministers disengaged their believers from their neighborhood networks to far off spots called Salem or quarters. For the sake of formal training, these believers were, educated to disapprove of their social convictions and practices, just as the adherence of hallowed days and compliance to their taboos important in characteristic asset the executives (Adu-Gyamfi, 2011). The results have been that, totally Christianity, Islam and development convictions, taboos, traditions and conventions in Ghana have been downgraded to the foundation and are respected by many, particularly early Christians, as magic and pointless, devilish and evil, however they assume a key job in ecological insurance.



2.10 Local Institutions and Natural Resource Management

Poor protection results from weak natural resource management techniques and arranged improvement frequently powers approach creators and researchers to reassess the job of nearby community in asset use and preservation. Successful conservation is dictated by the organizations related with asset the board choices. What at that point are organizations? North (1991) characterized organizations as the human-concocted imperatives that structure political, financial and social cooperation. They range through laws, constitutions, and property rights such as land tenure which are formal and with which compliance is obliged, to informal conventions such as taboos to which conformance is expected (Sarch, 2001). Institutions, therefore, are social constructs or specific practices that guide user behavior.

As indicated by Agrawal and Gibson (1999), an attention on foundations instead of network is probably going to be increasingly productive in network based regular asset the executives (Agrawal and Gibson, 1999). Contextual analyses on property rights routines in Indonesia and Vietnam demonstrated that wetland assets were regularly overseen as normal pool assets, and that state allotment of assets or the burden of private property rights could add to unsustainable use or change of wetlands to different utilizations (Adger and Luttrell, 2000).

In analyzing the idea of versatile limit in community based normal asset the board, Armitage (2005) focused on the point that some community-based regimes perform superior to others in light of having set up effective institutional plan standards. A near investigation of the criticalness of market powers, populace weights, and institutional factors as they impact asset use in India assumed a basic job in interceding the impact of basic and financial factors (Agrawal and Yadama, 1997),



while in Mexico the nonattendance of successful institutional plans prompted timberland corruption (Tucker, 2004). Pavri and Deshmukh (2003) proposed that reinforcing neighborhood establishments in preservation offers potential for increasingly compelling store security.

Utilizing a family unit poll overview just as center gathering dialogs, transient sharecroppers in the south Tongu locale of Ghana, were met over a scope of issues identified with residency and common asset the executives (Koku and Gustafsson, 2003). The aftereffects of the overview showed that security of residency affected asset use conduct. In any case, with secure use and access rights, individuals were bound to put resources into asset preservation and land the executives, even under standard occupancy game plans (Koku, 2001).

2.11 Gender Analysis and Its Effect on Natural Resource Management

Social scientists argue that using a gender-aware framework provides insight into important power dynamics underlying issues of access to resources and their management. The application of a gender-aware framework, however, presents both benefits and challenges when analyzing gender and access to resources and their management, because, the term gender is so broad and complex that its definition cuts across many disciplines. Depending on the emphasis of research, the term gender can be defined as an organic construct, an anthropological occurrence, or a sociological concept (Kimmel & Messner, 2001). Biological definition models simply focus on the differences between females and males (Lorber, 2000; Martin & Ruble, 2004). Early sociological and developmental understandings of gender constructs stressed on the importance of socializing girls and boys into accepting sex roles specific to their biological make-up (Roos, 1985), while anthropologically-oriented concepts of gender focus on the conceptualization of masculinity across cultures and stress



variations in behaviors and attributes associated with being either a female or a male (Kimmel & Messner, 2001).

Gender can also be a categorical construct representing any two numbers for females and males during statistical analysis (Thorne, 2000). The basic idea about such dualistic grouping is purely for differentiation. However, dichotomous portrayals may be unavoidable when the basic strategy is to compare females and males. While gender is a social construct that assigns to women and men a series of socially-differentiated roles and responsibilities (Aguilar et al, 2002; Francis, 2002), gender analysis on the other hand, is the systematic effort to document and understand females' and males' roles in a determined context (Poats, 2000).

Gender analysis of access to resources and their management requires an understanding of how demographic, institutional, cultural, socio-economic and ecological factors affect relations between women and men of different groups, which partly determine forms of natural resource use and their management (Schmink, 1999). Attention to differences within local communities is important in working toward sustainable natural resource management. This is on the grounds that provincial females are noted to have significant learning of the attributes, circulation and site necessities of indigenous trees, bushes and herbs (Wickramasinghe, 1997).

2.12 Law Enforcement and Natural Resource Management

One path by which natural resources conservation has been achieved in protected areas is through law enforcement. Governments have tried to confine the effect of human exercises on the earth by building up administrative frameworks of control whereby the individuals who participate in practices with a possibly negative ecological effect must agree inside a mind-boggling set of rules and regulations. The essence of law enforcement is to achieve compliance with a proposed set of rules





(Abbot, 2005) and to reduce crime in society (Gallo, 1973). However, the establishment of such rules and regulations is not a panacea to minimizing environmental impacts unless they are thoroughly enforced. Berglöf and Claessens (2006) distinguished between two types of law enforcement, namely private and government law enforcement. Private law authorization happens when private operators benefit themselves of the system characterized by law or guidelines to rebuff infringement, utilizing the courts to settle and the state to implement the last judgment. Open law implementation includes the authorization and arraignment of the law by the legislature.

Customary observing and endorsing of tenets or principle implementation is a vital condition for effective asset the executives (Gibson et al., 2005). Eisma et al. (2005) contended that the manageability of incorporated beach front administration in Philippines rely upon a lawful structure and its successful implementation. Laws, guidelines, laws and other lawful instruments support the continued execution of incorporated waterfront the board programs, on the off chance that they are connected or upheld. Utilizing semi-organized meetings with key sources in two beach front locales in Philippines, the aftereffects of a subjective investigation demonstrated that on account of clashing strategies, disarray of jobs, political impedance, absence important to completely arraign cases, specific requirement, and casual implementation components, law authorization in Mabini and Bais Bay seaside destinations was feeble (Eisma et al., 2005). The real implementation of laws in the examination was utilized as a substantial proportion of coordinated beach front administration supportability. Neighborhood court dockets appearing number and status of cases that were recorded, indicted and chose were utilized to improve the informational indexes.

The findings of a mail survey on illegal waterfowl hunting revealed that increased law enforcement, large fines, and mandatory jail sentences were believed to be effective in lowering illegal waterfowl hunting (Gary & Kaminski, 1996). In addition to law enforcement, fines and imprisonment, education was said to have potential for alleviating natural resource exploitation.

A study led in Phoenix South Mountain Park, Arizona showed that overall wealth of snake abiding reptiles diminished with expanded natural surroundings devastation brought about by authorities. The investigation prescribed that expanded administration thoughtfulness regarding rock outcrops as imperative untamed life living spaces, including expanded authorization of existing guidelines however most importantly, instruction of reptile gatherers, by means of protection social orders, ought to accentuate the significance of leaving natural surroundings in an unaltered state (Goode et al., 2005).

Successful natural resource management at the local community level calls for the recognition of factors such as gender, local institutions and law enforcement. Gender analysis was noted to play a very important role in natural resource management as women and men interact differently with the environment. Proper utilization of natural resources also requires that rules and regulations are laid down to guide resource users especially those at the local community level. Such rules and regulations are known as local institutions or institutional arrangements. The existence of rules and regulations are meaningless unless they are obeyed, hence the need for law enforcement regarding resource use.

2.13 Natural Resource Management and Sustainable Livelihoods

As indicated by Hissom, (2009). The board is the authoritative procedures that incorporate vital arranging, setting targets, overseeing assets, conveying the human





and budgetary resources expected to accomplish destinations, and estimating results. So therefore, for the purposes of this study, natural resource management can be defined as the ability to formulate and implement effective goals with the objective of achieving a sound and sustainable environment. A number of natural resource management approaches exist but the most practical for nature conservation at the community level is the community based natural resource management. The 1992 United Nations Conference on Environmental and Development (UNCED) extended the idea of maintainable job as a wide inclusion for destitution destruction. It expressed that feasible employments could fill in as a coordinating element that enables strategies to address advancement, economical asset the board and neediness annihilation at the same time (UNCED, 1992).

The initial ages of nature management followed a stronghold methodology that disconnected individuals from the use of natural resources on which they had previously depended. This top-down approach to management generally failed to protect wildlife as totally as intended (Grimble & Laidlaw, 2002). Meanwhile the mid-1980s, the stronghold methodology has been substituted by community-based approach pointing to work carefully with local people and where indigenous persons play a much more energetic role (Shackleton, et al. 2002).

Community based natural resource management is an approach that try to find and reunite the double objectives of community resource management and enhanced livelihoods for indigenous societies (Schmink, 1999).

Approximately countries in Africa practicing community-based natural resource management have detailed massive development in nature management in their protected areas. In Namibia, local communities were satisfied to see increasing game statistics of black rhino, desert-adapted elephant, giraffe, springbok and gembok in

areas where community-based natural resource management was practiced (Jacobsohn, 2003). South Africa has also experienced constructive outcomes of community-based management. Poaching within the Blyde River Canyon Nature Reserve, South Africa declined noticeably (de Beer & Marais, 2005).

Successful administration of natural resources at the community level relies upon various components. Among such factors are the job of customary authorities and traditional knowledge in resources or asset management.

2.14 Traditional Approach to Natural Resource Management

Notwithstanding formal decentralization forms, customary administration frameworks have kept on overwhelming in numerous rustic regions (Kasanga, 2002; Edja, 2001) because of absence of cognizance and additionally execution of state controls. Customary land and asset the executives is as yet a significant component of CBNRM in numerous nations of West Africa. Much of the time, network older folks, for example, the stools or skins in Ghana (Kasanga and Kotey 2001) have by and large managerial rights over network land, and direct the heads of ancestries gatherings and the heads of families, who are responsible for family land use and rights. Regularly the utilization of explicit assets, for example, certain organic product tree species or natural life is illegal inside the network (Symon, 2006). Ghana has a convention of little network dealt with 'no take' regions, known as 'holy forests. These are common regions shielded by networks from extraction, frequently in light of the fact that they should be the setting of a god, an antiquated cemetery, or the area of an old town, and in this manner comprehending genealogical feelings (Symon, 2006). An investigation of blessed forests in the nation of Ghana demonstrated that each provincial town in the review had at any rate one consecrated forest, however some comprised of close to a couple of trees and such places are depicted as



sacrosanct spots (Blench 2004). These forests are thought to establish the majority of the 1% of backwoods that exists outside PAs and woodland saves and if are additionally created, can help improve the timberland spread (GBBP, 2008).

2.15 Conclusion

To conclude, literature was reviewed extensively on natural resources, sustainable livelihood, Community Based Natural Resource Management paradigm, Community Participation in Natural Resources Management, Sustainability in Natural Resource Management, Ghana's Community Resources Management Areas Concepts, Community Resources Management and Areas structures and processes, local institution and Natural Resources Management, Gender Analysis and Natural Resources Management, Law Enforcement and Natural Resources Management, and Natural Resource Management and Sustainable Livelihood, and Traditional Approach to Natural Resources Management. Even though, the traditional approach to Natural Resource Management was effective, there was the need for a more community centered approach. With the adoption of Community Based Conservation Theory, it made known that when there is explicit community participation right from project conceptualization, through to planning and implementation to monitoring and evaluation, it leads to a more effective management of natural resource which will intend leads to sustainable livelihood either in the form of community growth or development which will impact the life of the entire community members. It was also evident from the literature that in order to effectively manage natural resources, there is therefore the need for government to decentralize authority of enacting laws to combat excessive exploitation of natural resources.



CHAPTER THREE

STUDY AREA AND RESEARCH METHODOLOGY

3.1 Introduction

Chapter three gives an interpretation of the study approaches, step and design in the conduct of this work. The methodology a study uses is very important as it reflects the superiority of information gathered, outcomes and explanation of the information. This section further specifies the research apparatuses and methods engaged for information gathering. Equally Sarantakos (2005:30) positions it as, "methodology is an examination system that deciphers ontological and epistemological standards in a form of rules that indicates how the research is to be directed. As it were, they are instruments utilized in the gathering and investigation of information". It is exceptionally basic in guaranteeing the dependability and legitimacy of discoveries. The procedure considers: the design of the study, the information gathering devices, sampling techniques and information investigation methods, and the research participants were chosen in line with a study conducted by Akparep, (2017).



3.2 Profile of the Study Area

3.2.1 Location and Size

Wa East District is amongst the other territorial district inside the Upper West Region of Ghana. It was calved out of the Wa Municipality to be a district on its own by L.I 1746 in July 2004, through an art of parliament. It is lies on the South-Eastern part of the region. (Figure 3.1). Fumsi is the district capital and is around 115 km far from the Municipality, which is the Regional capital. The Wa East District imparts limits **to** West Mamprusi toward the Northwest, West Gonja toward the Southeast and Sissala East area toward the

north.it has a landmass of about 4297.1sq/km, which is situated between scopes 9 55" N and 10 25" N and longitude 1 10" W and 2 5" W. The district possesses (17.3%) of the complete landmass of the region (18,478.4sq/km) (GSS, 2014)

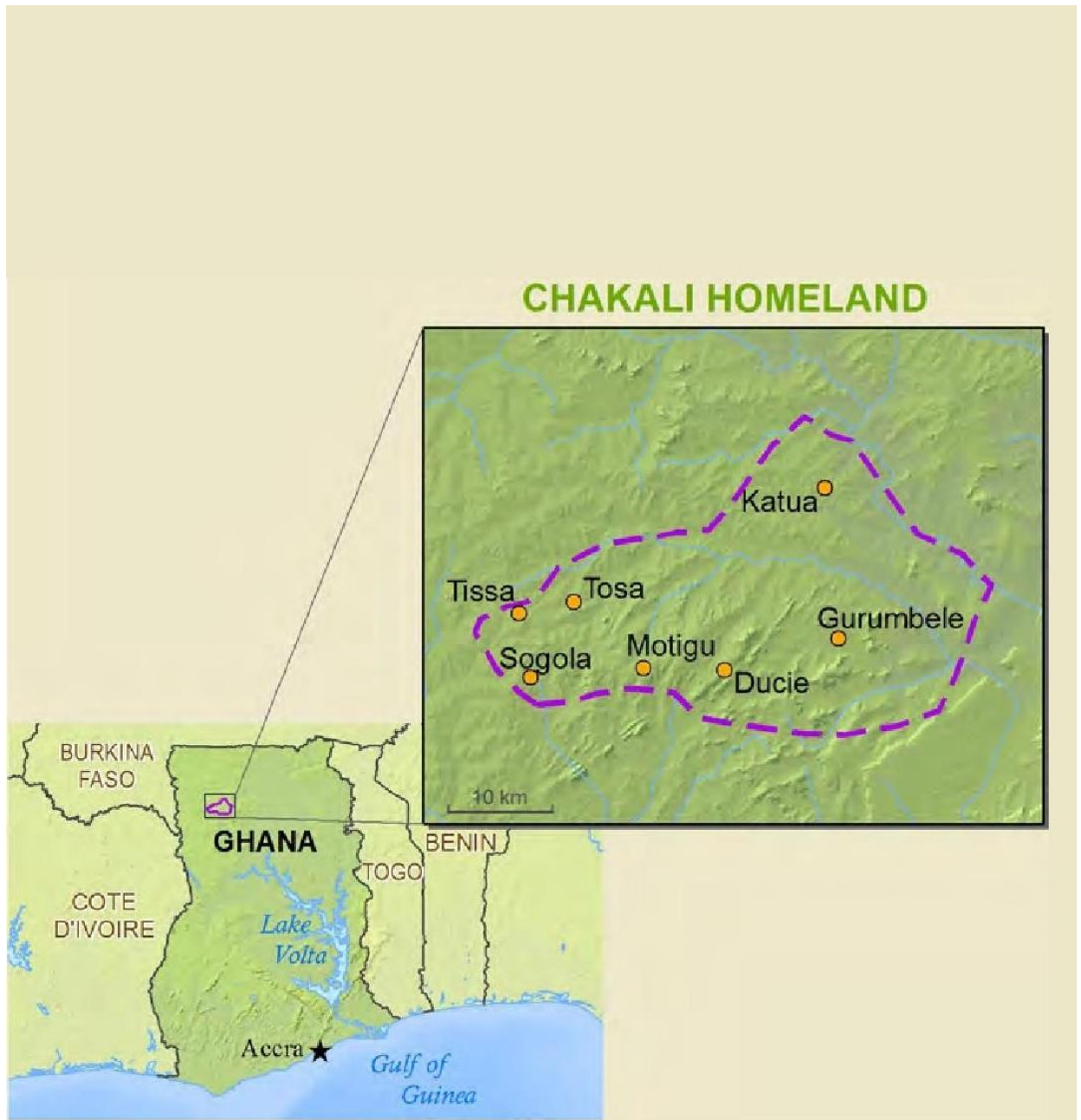


Figure 3. 1: Map of the Chakali CREMA

Source: GSS (2014).

3.2.2 Climate and Vegetation

The weather is tropical equatorial, which prevails throughout the Northern a part of Ghana. Temperatures are high all 12 months, achieving its top in March and April. During this period temperature could attain as excessive as 42 C. The temperatures are as low as 22 C in December and January. The district has a single rainfall regime, May to October. The common rainfall is set 1,200 mm per 12 months and they're torrential, erratic and stormy. The torrential and stormy nature of the rain at the start and finishing of the raining season commonly destroy buildings and farmlands. The single rainfall regime does no longer also make farming all yr round feasible. Most farmers consequently, end up redundant all through the long dry season, from November to May. Thus there's the want for irrigation centers within the district to offer employment possibilities throughout this era. The flora is made up of scattered trees, shrubs and grasses of various heights. The commonplace trees inside the District encompass shea, baobab, kapok, dawadawa, acacia, neem, ebony, mangoes, cashew, and acheapple (GSS, (2014).



3.2.3 Soil Characteristics

The soil is mainly sandy loam which could be very fertile and suitable for the cultivation of tubers, cereals and legumes. The location incorporates of specifically of igneous and metamorphic rocks and it's renowned for deposit of gold, iron and bauxite. The rocks additionally offer possibilities for colorful quarrying initiative and their imaginative nature attracts traveler (GSS, 2014).



3.2.4 Relief and Drainage

The terrestrial is commonly surging with between 180-1300 m beyond sea level. Aquatic system in the district is the dendrite type, conquered by the Kulpaw River and its tributaries. Maximum of the aquatic life run-off their bank throughout the raining period and condense major portions of the district unreachable throughout this period. Nonetheless, they dehydrate throughout the dry season. The aquatic life offers huge possibilities for the building of irrigation dams for dry season farming (GSS, 2010).

3.2.5 Economic Activities

The districts economy comprises of three main subdivisions namely agronomy, manufacturing and services. Agronomy occupies (85%) of the active labour energy, manufacturing (10%) and the service sector (5%). The region has an agrarian economy, agronomy and small-scale agro-processing accounts for over 90 percent of the district's income. This subdivision is the major, engaging over (85%) of the labour energy. The agronomy has two main subsectors, crop and livestock production. Crop production is the main activity of the populaces in the district. Approximately (96%) of the farmers in the district are crop producers. The main produces cultivated are yam, millet, maize, sorghum, groundnut, vegetables, cowpea, soya beans, cassava and rice. The livestock sub-sector is dominated by small-scale manufacturers who retain them as an additional activity for incomes and/or for food security purposes. The main livestock kept are rural poultry (fowl, guinea fowls and turkeys), cattle, sheep, pigs, and goats. Around are 20 dugouts and dams situated in 14 communities for irrigating of animals.

Aquatic and other water bodies for human and animal's consumption are still limited and as a matter of urgency, the local authority should build more of dugouts/dams.



Manufacturing undertakings of the district are mainly small scale functioning in the informal sector. It comprises basically processing activities such as “pito” brewing, shea butter extraction, gari processing, weaving, as well as pottery making. Wood works such as carving of drums, hoe handles, mortar and pestle, and walking sticks are also prevalent in the district. The vast agronomic capacities of the district could be a significant foundation for a well-established agro-based manufacturing company. Unarguably, the manufacturing division in the district to some level meet indigenous demands, less could be said about meeting external demands. This comes as a main trial the sector is bedeviled with such as inability to access credit facilities to expand and increase teaching to add worth and inability to access of equipped marketplace.

Irrespective of the service sector occupying small share of the districts economy, its involvement to the growth of the district cannot be overemphasized. Profitable events in the district are actually projecting due to the fact that they deliver a medium for exchange of both agronomy and industrial products. Business in the district is limited to purchasing and retailing largely agronomic products, and locally mass-produced items. The service sector in the district consist of primarily the formal sector workers at the central government, be it Ghana Health Service, Ghana Education Service, MOFA, Ghana Police Service, Forestry Commission and other private divisions such as Transport Operators, Telecommunication Operators, Community based organizations, etc. The business and service sector is weak. This is due to infrastructural deficits such as electricity, portable drinking water, good roads, etc. that will deliver a supportive setting for the private sector to function successfully is inaccessible. The division hence needs a major improvement

to brand it more approachable to the shifting developments of business and service provision (GSS, 2014).

3.2.6 Administrative Structure

Per constitutional mandate, every district assembly is regarded as the superior decision-making frame in the district. It is made up of two councils that is Funsu and Bulenga Area councils, and 25 components/election zones. 25 members are elected at the Assembly level or election zones while 11 members are appointed to compliment that of the elected assembly members. Aside these 36 members through election and appointment, only four of them are women with only one elected through the electoral zones. Two committees make up the entire District Assembly, namely the Executive Committee and Complaints and Public Relation Committee. The District Chief Executive chairs the Executive committee while the Presiding Member (PM) chairs the Complaints and Public Relations Committee. There exist five statutory subcommittees under the Executive committee namely; Administration and Finance committee, Social Service Committee, Works Committee, Planning and Development Committee, as well as Justice and Security committees. These sub committees are tasked with the responsibility of assisting the executive committee to execute its purposes. The Assembly implements its programmes and policies through the District Assembly secretariat which comprises of permanent administrators. The District Assembly has got no paramountcy. Nonetheless, the District has divisional chiefs and sub-divisional chiefs who primarily serves as conflict resolution mechanisms and preserve law and order in their communities. It is hence significant to enable the formation of at slightest a traditional council in the District.



3.2.7 Population Structure

According to the 2010 population and housing census, the district has a total population of about 72,074 which signify 10.3% of the overall region's entire population. Out the population, males constitute 50.5% and females represent 49.5%. Youthful population dominates at the district with a glaring (46.6%) portraying a broad base population pyramid which tapers off with a slight number of elderly persons (0.7%) who are 60 years and older. This means, there is a high dependency ratio for the district. Out of the population, around 88.8% are engage as skilled agronomic, forestry and fisheries employers, 2.9% in service and sales, 3.1% in craft and associated skill, and 1.5 percent are engaged as administrators, experts and technicians, and subordinate experts (GSS, 2014).

3.3 Methodology

3.3.1 Research Design

Design of a study may be viewed as a strategy aimed at gathering and evaluating evidence that makes it probable for the investigator to address his study questions. Plan of a study traces virtually all facets of the research, from information gathering decisions to choose of procedures for information analysis (Sarantakos, 1993). According to Flick (2002), a plan of research suggests whichever technique to resort to either quantitative, qualitative, or the mixed approach that is combination of quantitative and qualitative approach.

Ghosh (1992) augments that, a plan of a study is based further or fewer on some procedure which delivers strategies as to the drive of your research, the kind of information desirable, how to get the information, the study range, ways of analyzing



information. This research adopted the qualitative design. As Creswell (2014) posited qualitative study design is a method for discovering and thoughtfully underlying significance persons or collections attribute to a common or anthropological occurrence and so therefore, information was gathered in the participant's setting, information was analyzed inductively structuring from specific to overall themes, and the investigator creating clarifications of the sense of the information.

3.3.2 Sources of Data

Twumasi (2001) pinpoints two major foundations of information for social science investigation – primary and secondary information foundations, where he accentuates that the two are mutually required in complimenting respectively in a specified research development. The research piece consequently made upright usage of secondary information from journals, in print and unprinted files and on the net materials on natural resource management and correlated issues as well as primary data obtained directly from the field.

3.3.3 Sampling Units

Sampling components characterize the objective cluster that an investigator is fascinated in attaining information and illustrating available assumption. As Osuala (2001) discoursed, sampling components are persons or a cluster of persons who by eminence of their awareness of a problem zone and who disturb or are disturbed by the problem are nominated from a populace for an enquiry. A populace in this instance, conferring to Babbie 2005:196 is “*the academically detailed collection of the fundamentals in a study*”. This research, the sampling components were: community chiefs, land owners (Tindana), Presiding Member, wildlife Division Officers, MOFA Officers, EPA Officers,



Fire Service Officers, Women leaders, Charcoal sellers, CREMA Officers, Unit Committee Members, Hunters, Farmers, Herbalist, Youth Front-runners and Assembly Memberships. These sampling units were drawn from four communities within the Chakali CREMA communities, namely Bulenga, Ducie, Tissa and Katua.

3.3.4 Sampling Techniques

Sampling monitors the investigator in shaping the reportage of the research with respect to the kind and quantity of persons who would have to be considered in the research to brand it satisfactory (Twumasi, 2001; Sarantakos, 2005). Identifiable amongst sample techniques are: probability and non-probability sample techniques.

This research adopted purposive sampling techniques which is an example of non-probability sampling techniques. Purposive sampling aided in the selection of the study respondents (see Table 3.1) who are perceived to consume significant information on the subject of the study as hypothesizes (Sarantakos, 2005). Purposive sampling also known as Judgmental sampling remains a cautious option of a participant owing to the potentials the participants retains, in simple terms, the investigator selects whatever he desires to know and established to discover persons who can and are enthusiastic to offer evidence by virtue of their understanding or knowledge (Bernard, 2002). The study made available a sample scope of 65 participants for data for the study as distribute in Table 3.1.

Nonetheless, simple random sampling is also a type of sampling where by identical chance and openings are been giving to the sampling components for selection. This sampling technique was used in the selection of four communities (out of the seven communities) for the study, and these communities were those suffering higher level of natural resource exploitation.

Table 3. 1: Categories of respondents in the study

Type of respondent	Number of respondents
Community Chiefs	4
Land Owner (Tindana)	4
CREMA Officers	11
Wildlife Division Officers	2
MOFA Officers	2
Environmental Protection Agency Officers	2
Fire Service Officers	2
Women Leaders	5
Charcoal Sellers	6
Presiding Member	1
Assembly Memberships	4
Unit Committee Members	4
Farmers	10
Herbalists	2
Youth Frontrunners	4
Hunters	2
Total	65



The rationale behind the selection of this quantity was grounded on the dispute that selecting samples for any study must be *“lesser enough to circumvent redundant*

spending and gigantic enough to circumvent sample-error or duplication” Ghosh (1992:237).

3.3.5 Methods of Data Collection

Interviews

Interviewing/ quizzing is the “skill of gathering information” (Rubin and Rubin, 2005) so that the investigator gets understandings in to the numerous perceptions of the diverse examinees. Quizzing springs the examiner the prospect to launch a special rapport with examinees in mandate to launch the required evidence for the study (Rubin and Rubin, 2005). All the respondent was interviewed.

Questionnaires/Survey

Surveys permitting to (Baker, 1994:172) “is a technique of gathering information whereby a precisely demarcated cluster of persons are requested to response a quantity of matching queries”. Even though survey is an instrument for obtaining quantitative information, it was a secondhand to compliment the dialogue sessions to guarantee high grade of consistency on the information established from the respondents. Using more than one information gathering technique was also meant to warrant a high grade of legitimacy and consistency of results of the study (Twumasi, 2001).

Undeniably, information gathered was positioned on, the community dependence on natural resource, how the construction of CREMA and its activies have unnatured living conditions, how resources can be manage for justifiable use and finally how activities of stakeholders facilitated in natural resource management in the CREMA cultures. The



decision to use dialogues and surveys direction was intended to discover for mutually broad and in-depth evidence on the problem of the study (Creswell, 2014).

3.3.6 Data Analysis and Presentation

Examination of information denotes to procedures used to establish and provide denotation to information obtained (Burns and Grove, 2005). Notwithstanding the kinds of information gathered and the positioning of the investigator, information examination constantly comprises two stages: a summary of the outcomes and an explanation thereof (Stommel and Wills, 2004).

This study assumed qualitative method to the examination of information and monitored the outline of, modelling the information, constructing classes, creating themes and shapes, elucidating the information and assembling a report (Twumasi 2001; Ghosh 1992; Marshal and Rossman, 1995). The examination of information in this research, as detected by Marshal and Rossman (1995), was largely description. Graphic arrangements like: charts and tables to support suitable demonstration, explanation and clarification were also used. This was in agreement with the opinions of Miles and Huberman (1984) and Marshal and Rossman (1995) in backing of qualitative data analysis.

3.4 Ethical Considerations

Ethics issues are appropriate in all investigative works, issues like access procedures, observance to privacy, privacy and circumvention of destruction to participants were guaranteed. The respondents remained cognizant about the purposes of the research and their involvement in the research was virtuously professional and as such they can indicate to participate or not. In conformism with suitable moral values in social science



investigation, ample of discretion and concealment of evidence desired through data gathering was domineering.

UNIVERSITY FOR DEVELOPMENT STUDIES



CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION

4.1 Introduction

Section four focused on scrutiny and clarification of information collected from the participants on the grounds. Many objectives were set for the study but the main objective is how to manage natural resources for ecological livelihoods in the Chakali CREMA in the Wa East District. Chapter four however, made available the outcomes and argument taking into appreciation of the related issues raised in the literature. The analysis and clarifications are being closely in relations to the objectives set for the research.

4.2 Socio-Demographic Characteristics of Respondents

Relevant socio-demographic information of participants of the study were collected and analyzed. Information pertaining to participant's sex, education and overall understanding of Community Resource Management Areas remained the precise disputes which were examined below the socio-demographic disputes for this research work.

4.2.1 Sex Distribution of Respondents

Figure 4. 1 disclosed that, 95% representing 61 of the study participants were males while 5% representing 4 remained females. This endorses male supremacy in Northern Ghanaian countryside dwellers in terms of communal affairs. Consistent with many studies (Amuno, 1998; Malaolu and Ogbuabor, 2013), more males are employed in institutions relative to females in developing countries in Africa. Therefore, males according to the research dominated in the activities of the CREMA than females in terms of specific title role and duties was made manifest.



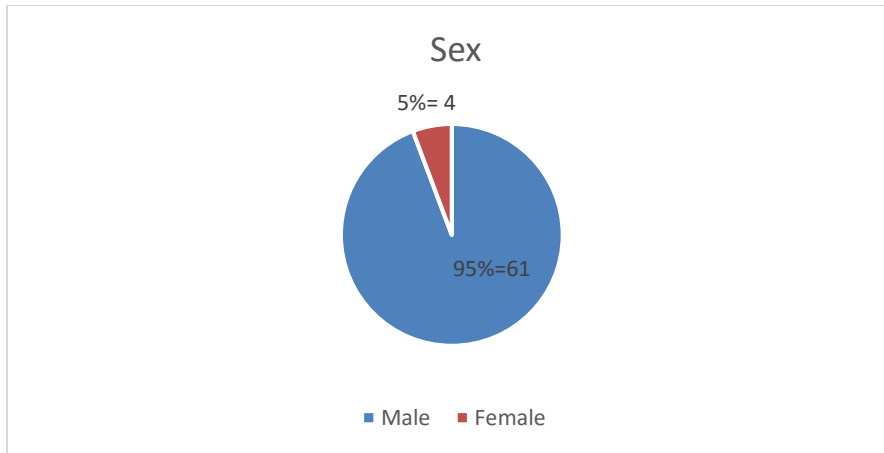


Figure 4. 1 Sex distribution of Respondents

Source: Field Work, September, 2018

4.2.2 Educational Distribution of Respondents

The research, consequently wanted to generate the formal level of education of the study participants to the data gathered. Therefore, the formal level of education of the research participants was captured in Table 4.2.

Table 4. 1: Distribution of Respondents by Formal Educational Level

Highest Educational Level	Frequency	Percentage (%)
No Formal Education	29	45
Basic Education (Primary & Junior High School)	12	18
Senior High School	11	17
Tertiary (Diploma, HND, BA, BSc, Master’s Degree, PhD’s)	13	20
Grand Total	65	100

Source: Field Work, 2018

4.3 Understanding of Community Resource Management Areas and Their Role

CBNRM platforms have been introduced worldwide as one of the effective ways to achieve nature conservation in protected areas. Therefore, to understand natural resource exploitation inside and outside the Chakali CREMA responses were centered on how well respondents understand CREMA and its title role they play in conserving and managing natural resources. Even though, information earlier on analyzed exhibited that bulk of the study participants were without formal education, but their response on the understanding of CREMA and its role were amazing.

During a discussion session, a native of Tissa Chakali CREMA publicized these:

“Am aware of CREMA long ago, and I have since then been going for their meetings since it is important to safeguard our natural resources for generational use. I have a lot of children and if I don't help in the protection of natural resource and am no more, what will they feed on?”.

This, however, stressed how the community knew of CREMA and their activities in their communities. Majority pointed out that and per the ground information ascertained, it was a clear suggestion that members of the CREMA communities knew their role in protecting natural resources.

4.3.1 Understanding of Natural Resources

Natural resource exploitation is a composite phenomenon that warrants a thorough understanding if meaningful results and measures are to be proposed toward its management. The research discovered that all the 65 (100%) participants established that, they actually understood the configuration of natural resources. They established that

mankind cannot survive without natural resources like forest, water bodies, land, soil, trees, animals, minerals (especially gold) etc. were said by the study participants as some of the known examples of natural resources which were in conformism with persons of (Keizire and Mugenyi, 2006 in USAID 2017).

The results likewise discovered that, natural resources sustain persons in diverse means. People rely on these natural resources for their livelihood.

An assembly member from the Katua had this to say and quote him:

“..... natural resources are gift from nature that support human life and create way for the betterment of life, example forest, lands, trees, stones, animals, fishes, minerals like gold”. This definition confirms that of Keizire and Mugenyi, 2006.

4.3.2 Dependence on Natural Resources

Many societies in third developing countries depend exclusively on natural resources for their living. This over reliance creates differing demands for utilization and change which results in land-dwelling usage and land-dwelling cover changes. Land-dwelling usage and land-dwelling change is the way people use land or decrease vegetation cover (Mwavu & Witkowski, 2008). During the interview sections with the four communities (Bulenga, Katua, Tissa and Ducie) for the study, it was revealed that, massive 100% representing 65 of all the respondents who were employed in this study said they depend solely on natural resource in the sense that, most of them are subsistent farmers who cultivates crops and rear animals to feed themselves and their immediate family and also sell such farm produce to people who worked in other sectors of the economy.

A participant made such a remark in an interview and I quote;



“.... for natural resource no human being can live on this earth without making use of it. Natural resources like land are cultivated by farmers to produce food, animal species of different kind serve as meet, timber and other trees, provides furniture, and other sort of things. Even if you are not a farmer, you eat and drink? So, therefore, you either buy direct or indirectly from farm produce. Unless such a person does not exist.

A respondent from the (MOFA) revealed this during an interview session that:

“..... if a lasting solution is not found immediately about the over dependence of the community members on the available natural resources such as land, forest, trees, animal species etc. a time will come even the land will not be able to support farming due to the use of agro-chemicals which is increasingly amongst farmers in this district, since agricultural is the main profession of the community members.

The solution can simply be sensitization of the community members to embrace the planting of trees(afforestation), practice crop rotation and engaging in other forms of trade, since the available lands are not fertile and rainfall patterns too unfavorable”.

The analysis of natural resource dependence shows that, as human beings, we can't leave without natural resource. Because no man can live without air, water, land etc. this has led into the over exploitation of land as a result of increased pressure on farmlands due to population growth.



This opinion kowtows with the World Bank's (2000 in Bandoh 2010) view, which reflects natural resources as those resources that offer essential living-sustenance, in the form of mutually consumptive and public-good and services.

4.4 Managing Natural Resource for Sustainable Livelihood

Managing the proper usage of natural resources basically denotes how to preserve and reserve them from over exploitation in a manner that they can be beneficial and at the same time be allowed for generational use. Most of the research participants contended to the fact that it is imperative to manage natural resources. Figure 4.3 illustrate this further. Out of the entire respondents for the study, massive 90% representing 59 of the respondents, replied Yes demonstrating that there is the necessity to conserve and manage, natural resources, whereas 10% representing 6 of the respondents, replied No meaning they do not see the essence to preserve and manage natural resources.

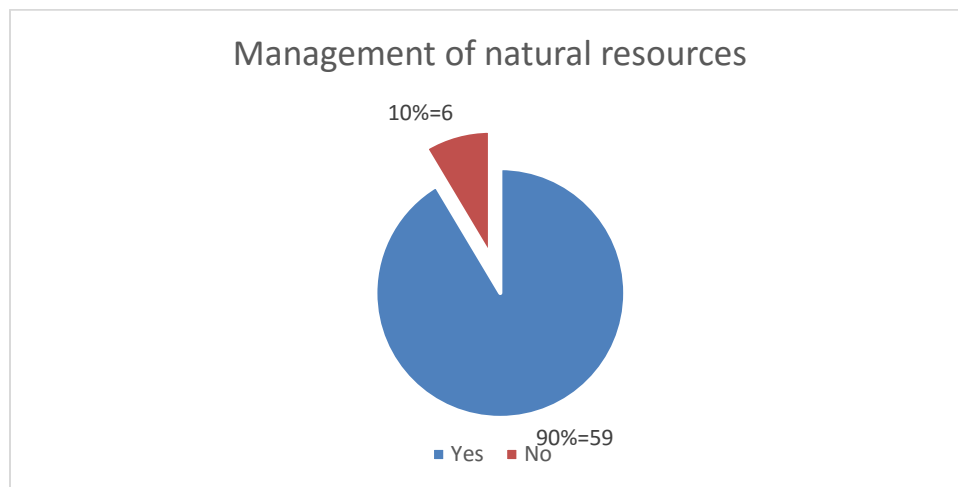


Figure 4. 2: Management of natural resources

Source: Field Work, 2018





Participants to the research acknowledged explanations why it was indispensable to manage the natural resource to consist of: for tourist fascination which will in return yield revenue aimed at growth and development, to aid reinstate the depleted natural resources both plant and animal species, it serves as a home of medication, it also provides sustenance, and finally to reinstate the lost potency of the lands. The answers from the participants are in consonance with Keizire and Mugenyi (2006, in Bando 2010) opinion that, natural resource management is necessitating for fiscal growth.

A participant hunter in Ducie CREMA remarked:

“The rainforest is one of the key natural resources in our society which is very imperative to us. As a hunter, there are seasons that I hunt and I don’t even hunt in the forest reserves, and there are some animals that I do not hunt, because some of the animals are more or less like domestic animals and it is even forbidden in this community to slay and feed from such animals. My only problem is group hunters from different communities who come into our forest reserves to hunt, I sometimes ask myself how the forest reserves would be suppose hunters from this community engages in what others(hunters) from different communities comes to do inside our forest?”

Another respondent from Bulenga also said and I quote:

“..... it is good to preserve and manage natural resources effectively not only for our generation but the next generation, but the way and manner illegal mining (galamsey) is rampant in this community, all our forest reserve and water bodies will be destroying sooner or later. And my

question is, if we continue embracing illegal mining and damaging our forest reserves, what are we going to feed on and our generation to come? And am very sure our bad rainfall pattern in this particular district and region at last is as a result of our inability to conserve and effectively manage our forest reserves”.

This show and confirm how CREMA community memberships and other participants had comprehended the significance of preserving natural resources in the CREMA for sustainable usage, because responses emphasized that when resources are conserved and managed efficiently the lives of the people will improve.

4.5 Human Activities that Leads to Exploitation of Natural Resources.

Decreasing natural resources inside and outside Community Resource Management Areas are main problem many governments face globally. Several factors are known to contribute to natural resource exploitation in CREMAs. Notable amongst the activities are as a result of human influences such as deforestation, illegal mining, over grazing, bush burning and population growth.

Mather, et al., (1998) has argued that almost half of the deforestation that has occurred in human history can be explained statistically in terms of population growth.

Table 4.3 depicts the rate at which these human activities destroys natural resources, 19 of the respondents representing 29% revealed that, deforestation or felling down of tree has been a major human activity that has exploited their natural setting, 16 of the respondents representing 25% also made known that, population growth has led to the exploits of their natural resource. In addition, 15 of the respondents representing 23%



said bush burning has been the major human activity for their natural resource exploitation, whereas 11 of the respondents representing 17% said illegal mining is also the major cause of their natural resource exploitation. And finally, 4 of the respondents representing 6% also said it was over grazing that causes depletion of their natural resources.

Table 4. 2 illustrates human activities that leads to exploitation of Natural Resources.

Human activities	Frequency	Percentage(%)
Population growth	19	29
Bush burning	16	25
Illegal mining	15	23
Over grazing	11	17
Sand winning	4	6
Grand Total	65	100

Source; Field work 2018

In an interview with an Environmental Protection official, he remarked and I quote;

“human activities like felling down of trees, bush burning illegal mining etc are the major cause of natural resources depletion and as such, if measures are not laid down, all our forest and resource reserves will be depleted in years to come and you and I should be part of this advocacy”.



In an interview with an official of the Wildlife Division, he made an interesting remark and I quote;

“This District is one of the blessed district in terms of natural resources in Ghana even though it is also the youngest. But exploitation of its natural resource is beyond imagination. All the community in Chakali is noted for one major exploitation practices, I can mention a few for your academic purpose. Bulenga is a community in Wa East District noted for illegal mining (galamsey) and the rate at which this activity is fast tracking, if it’s not controlled generation yet unborn will suffer the consequences”.

4.6 Measures in Place for Managing and Sustaining Natural Resources Use

Respondents acknowledged actions to ensure effective natural resource management.

These actions were identified as: strict adherence to laws if any, teaming up with the youth and agriculturalists in the societies to protect natural resources, formation and strengthening of anti-bush fire fighters to avert fire from dissemination (training), enlightening CREMA communities to comprehend the significance of natural resources, fencing of reserved zones to avoid easy contact to them, persistent schooling and increase of investigation inside natural resource zones in the societies.

An Officer from the Wildlife Division made this statement:





“There are bye-laws in all CREMA communities across the country with its punitive measures clearly spelt out but the extent to which these CREMA communities abuse it over’ here’ are exceedingly above imagination. Well it could be as a result of such bye-laws not been properly enforced. Without the proper enforcement of these laws, it will be extremely problematic to guarantee the protection and sustainability of the natural resources”.

A youth leader from Katua also said this in relation to the measures in place in the CREMA:

“..... because of training and awareness programmes by the Wildlife Division, we now know the importance of conserving and managing natural resources but most of our activities are inside the forest reserves and there are wild animals in there, we therefore plead with government and other N.G.Os to provide us with some incentives like motorbikes, covering boots, torchlights etc. to aid our daily operations. By so doing, we can effectively monitor our reserves during the day and night to prevent intruders, because our natural resources can one day serve as a potential tourist attraction site”.

Another respondent from Bulenga CREMA said that:

“To properly and effectively conserve and manage natural resources, all stakeholders must be actively involved and the issue of offenders going unpunished as a result of he/she been our own should be

abolish and ensure that right things are done and there is total participation, government should also empower the forestry commission with the requisite personnel and enough incentives to be able to function effectively”.

The respondents’ views support that of Sayer’s (2004) that community participation is a careful process of conveying composed the numerous features of natural reserve consumption into an edifice of ecological management to come across the expectations of those who exploit resources, supervises and those who have a stake in the resource. And therefore, when the laid down measures are effectively adhered to, it will prevent community members from exploiting the available natural resources.

4.7 Community Resource Management Area (CREMA) Stakeholder Analysis

The research came out with some fascinating revelations about the roles of various stakeholders in the Chakali CREMA (Table 4.2), since the respondents said that for safeguarding proper then active conservation and management of natural resources for sustainable living in these CREMA communities, it is imperative for all stakeholders to play active part. It was on this impression that, a respondent from Bulenga CREMA said that:

“In this community, our Chief and his elders serves as a tool for resolving Conflict of any kind. Before an issue will be out of hand and travel to the court or law enforcement agencies, unless all mechanisms laid down by the chief and his elders are exhausted. And it is very difficult for members of this community to flaunt on the orders of the chief and his subjects



(elders). Therefore, the chief and his elders can exercise such authorities by organizing extensive community meeting to educate the community on the need to conserve and manage our own resource for generational use, since they are unreservedly obeyed”.

Table 4. 3: Community Resources Management Area(CREMA) Stakeholder analysis

Stakeholders of CREMA Communities	Roles in managing and sustaining natural resource
Traditional leaders(chief and elders)	Land owners and Conflict Resolution Mechanisms
Wildlife Division officials	Provision of training and other protective equipment’s
Assembly members	Enactments of bye-laws
Unit Committee members	Mobilization of community members
Non-Governmental Organizations	Provision of Advocacy to community members and other stakeholders
Fire fighters	Training and education of firemen .
Environmental Protection Agency	Enforcement of environmental laws and protection of the environment.

Source: field work (2018)

In an interview with another respondent from Ducie, he said that:

“Our community is noted as one of the indiscipline in respect to bush burning. Our youth mostly do not engage themselves in any



trade so they set fires into our forest reserve and hunt for games in such reserves. But with the help of these firemen by the Wildlife Division, there has been thorough education and that mentality of the youth have minimized. I therefore, encourage other administrative units and non-administrative units to spearhead such training of more fire fighters in our community to fight against bush burning preserve our forest”.

With the role of the Assembly members in the Chakali CREMA, a respondent from Bulenga made this shocking revelation:

“ Boss, I don’t want to hear that name, assembly what? These are the same people hiding behind scenes and supporting illegal mining (galamsey) in this community because of their own selfish interest. I think they don’t even know the main aim of going to the assembly. Instead of them to have facilitated the enactment of bye-laws to curtail this menace, they go to the assembly and do absolutely nothing about it. But meanwhile, we have entrusted in them such responsibilities but only God know. Even look at our road? Boss I beg I don’t want to talk again”.



So therefore, responses from the respondents in some of the CREMA communities indicates that, some Assembly Members are not up to their roles and responsibilities entrusted by the people to represent them at the District Assembly.

It was on this note that a respondent also said that:

“Our assembly member here is doing marvelous with respect to curtailing this problem. He has been sponsoring this CREMA group in this community in all their activities and actively taking part in almost all their activities which is good and encourage all community member’s participation”.

This confirms the roles and responsibilities as an Assembly Member.

With the role of the customary leaders on land ownership, 81% said they are aware lands in their community are owned and controlled by the Chiefs and 19% said land belongs to family heads (Tindana) (Figure 4.4).



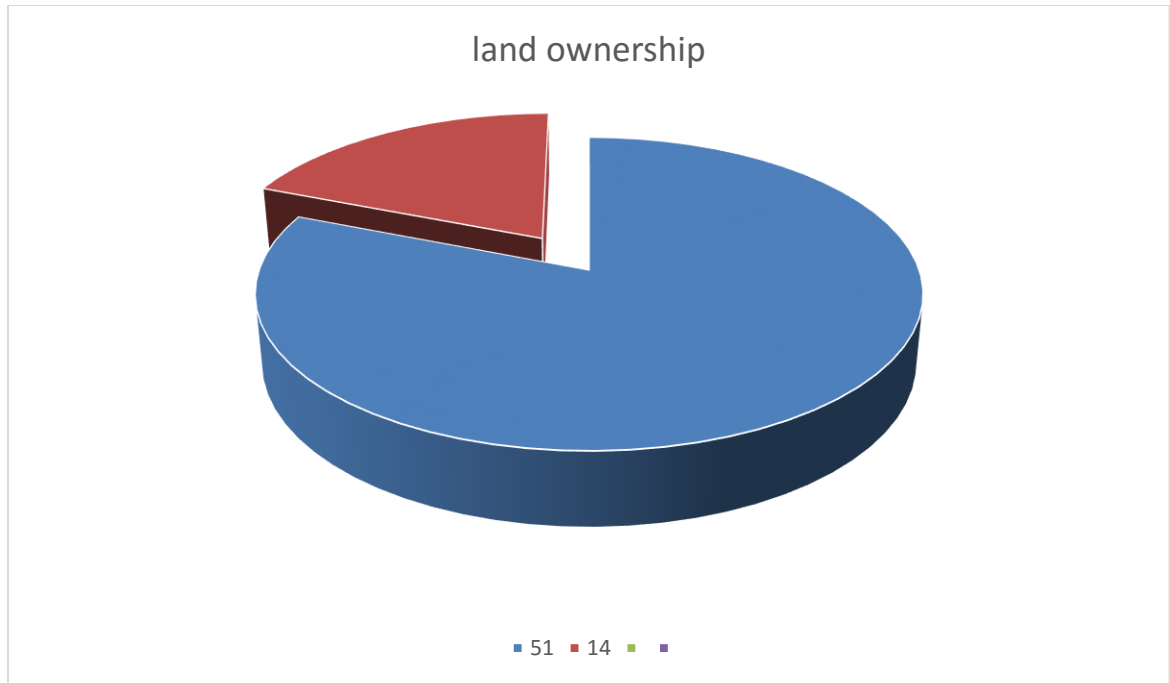


Figure 4. 3 Land ownership in the Chakali CREMA

Source: Field work 2018

In a discussion (interview) with a respondent on the role of chiefs as owners of the land, he remarked that:



“Traditionally, once a person is enskinned as a chief in our community, he automatically become the owner of all the lands. Even though some family heads own land. It usage, sales and lease are now determined by the chief and his subjects(elders)”.

On the role of the Unit Committee members, a respondent during an interview, said and I quote

“In this community, our unit committee members are doing very well in terms

of mobilizing we the youth for community work, but it seems their functions are only limited to community mobilization because aside that I don't normally see them in other matters of relevance in the community".

Another respondent from Tissa CREMA had this to say:

"I am a Unit Committee member coupled as a voluntary CREMA member, this is because if we the unit committee members do not actively take part in the CREMA activities, the community at large mostly the youth will feel reluctant in doing so. Therefore, I perform my functions both as a unit committee member and as a CREMA member Because I love to serve my people in every capacity".

On the role of the community members in protecting natural resources, 65% representing 41 of the respondents realized the need to protect natural resources not only for immediate use but for the generation to come, and 35% representing 24 of the respondents said due to the nature of their jobs, they are only available on the weekends and even though they have interest in the need to protect their own resources but work will not permit that. Figure 4.5 further elucidates the role of community members play in protecting natural resources.



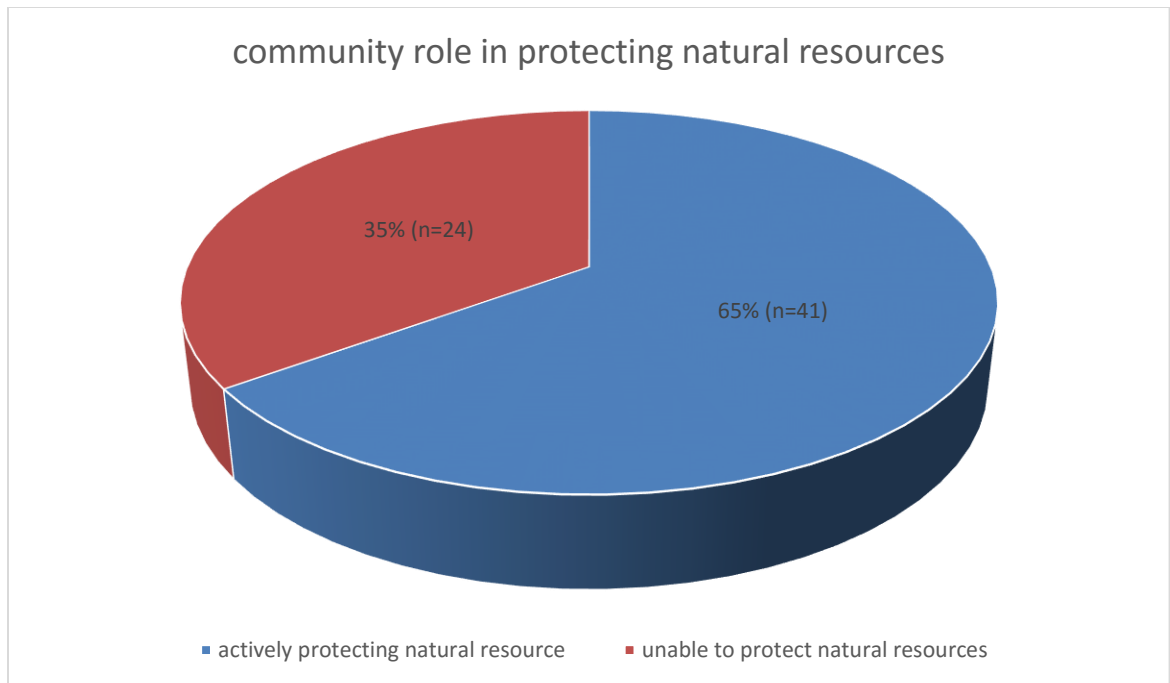


Figure 4. 4 Community role in protecting natural resources

Source: Field work 2018

This also reaffirms Armitage (2005) that some community-centered natural resource management systems execute superior than others due to communal active participation and existence of successful principles designed by institutions.



In relation to the role wildlife Division play in protecting natural resource, a respondent from Katua said that:

“As for this Wildlife Division Officials, they have been doing all their possible Best to help in protecting our natural resources but, due to the activities of other stakeholders like the Chiefs, elders, Assembly members and Unit Committee members, they find it difficult to operate. Once they get hold of

an offender, the above mentioned person(s) will intervene and plead on the person's behalf and the person is left unpunished. So to me, the wildlife division is doing extremely well in protecting our natural resources".

Finally, on Non-Governmental Organizations role as stakeholders in protecting natural resources, 95% of the respondents representing 61, said that advocacy programmes by USAID and ADVANCE Ghana aimed towards resource conservation are simply superb just that such donors are not stationed in the Chakali CREMA and often at times are left in the hands of untrusted community members. The remaining 5% of the respondents representing 4, also said, even when the NGOs are stationed in the community they see no essence of protecting what God has given them to feed on. Therefore, they don't see the need for any NGOs intervention (Figure 4.6).

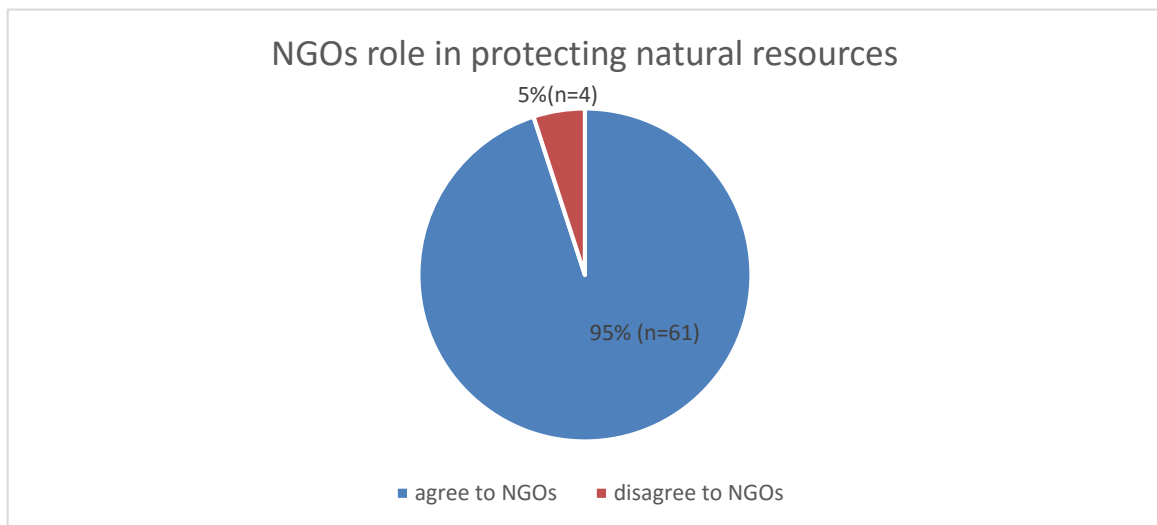


Figure 4. 5 **Role of NGOs in natural resource management**

Source: Field work 2018

This is in line with what Gibson et al. (2005) said that consistent observation and authorizing of rules or law implementation are an essential condition for successful resource management. Participants' reactions lingered in contrast with Bacho (2001) that the key stakeholders are individuals inside identified communal or demarcated terrestrial zones that are keen and ready to care the reason of assignment of CREMA.

4.8 Conclusion

From above analysis, it is worth noting that community members or respondents were aware of the activities of CREMA, understand what constitute natural resource, the need to protect such resources for sustainable livelihood. Also, community members had no other alternative livelihood to depend upon and as a result, they solely depend on the farm lands for survival. It was also pointed out from the study that, major shareholders play a critical part in ensuring effective management of their forest reserves and consequently such roles were outlined.



CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This study was focused on a how to manage natural reserves for ecological living in countryside dwellers resource management Areas in the Wa East District. This chapter hence gives an outline of the investigation with ends dependent on the consequences of the examination and proposals for the way forward for policy formulation and implementations within the CREMA communities and the Wa East District.

5.2 Major Results in Summary

As the study remained focused on just how to manage natural reserves for sustainable livelihood. Based on this main research objective, sub research objectives were developed, that is to assess community member's dependence on natural resource. In furtherance to the above objectives is to explore ways by which natural resources management can sustain livelihoods in the CREMA communities, and, finally, to scrutinize the part of stakeholders in natural resource management in CREMA communities.

To achieve these objectives, the study adopted qualitative research design using 4 Chakali communities in the Wa East District namely Tissa, Bulenga, Ducie and Katua a total sample of 65 respondents of which both interviews and questionnaires were administered.

The study revealed the following findings:





First and foremost, the research discovered that 29 respondents representing 45% were without formal education, 12 respondents representing 18% had acquired elementary education (primary and Junior High School), 11 respondents, representing 17% had S.H.S education, 20% representing 13 of the respondents also had Tertiary education.

Secondly, it was established after the research work that, maximum percentage of the respondents understood and knew of CREMA activities, even though their level of education was low.

It was also found from the study some natural resources as land, forest, wildlife, water, rocks, soil, mountains, trees, animals, and minerals especially gold are the major natural resources in the Chakali.

The study further came to the knowledge that 100% of the respondents knew what constitute natural resources and that human beings cannot live without them, and this finding was in toeing the line with those of (Keizire and Mugenyi, 2006).

Moreover, it was ascertained from the study that; community members solely rest on on natural resources such as land, animals, trees, gold, aquatic bodies etc. for livelihood. Respondents made it known that not only farmers depend on natural resources but workers from other sector also depends either through direct and indirect consumption of farm produce and other animal species.

Supportively, respondents made mention of social happenings that are destructively distressing the CREMA. Participants acknowledged such social activities to comprise: population growth, illegal mining, sand winning, over-grazing, and so on.

From the results of this study, the findings showed that continuous farming has been the main practice of farmers in the community and the community members do not allow the land to regain its fertility (fallow period).

Respondents made it known in the findings that, in other manage natural resource to sustain lives and for generational use, community members should actively participate in activities of the CREMA.

Finally, the study also made some revelations about stakeholders and their respective roles in natural resource management.

5.3 Conclusions

Stemming from the above discussion, it can be concluded that some aspects of human activities like over dependence of natural resource, since it is believed that man can never live without natural resources every activity of human beings depends on these natural resources. Using the views of the respondents, this study revealed that natural resources are very necessary in human lives and God has blessed these study areas or communities with much resource.

On the other note, the results clearly depict that natural resource exploitation has declined extremely upon the introduction of CREMA. This was demonstrated by the decrease in resource exploitation inside the Chakali Resource Reserve. The decline in natural resource exploitation was primarily due to the partnership formed between CREMA executives, members and local community members. This was made known through interviews with the wildlife officer. Even though, the officer confirmed decline in the exploitation of natural resource in the Chakali communities, some negative practices still



prevail and needs to be eliminated completely.

Finally, to effectively and efficiently and manage natural resources, it is imperative for all and major stakeholders to play their respective roles.

5.4 Recommendations

The study came out with the following recommendations ;

First and foremost, government and other Non Governmental Organizations should institute alternative livelihood programs to the community members in a form of trade and industries to avoid the over dependence and exploitation of natural resources. Thus, provision of adequate financial and training support to Community Resource Management Areas to support other livelihood programmes.

Secondly, there should be regular education and training of both CREMA members, executives and all stakeholders by the forestry commission in charge of wild life on the need to conserve and manage the forest reserves. Training should focus on reserve management as well as local community members – to know and appreciate the importance of nature management.

Additionally, assembly and committee members should support in providing financial support and other incentives in the form protective gears to CREMA members in other to aid them move deeply into the forest zones. This can be done through writing of proposals to government agencies and other foreign aids.

The Department in charge of Environment and Resource Studies of University for Development Studies should factor it on its academic calendar for third year students on third trimester field practical programme to embark on outreach programs on the need to



conserve and manage forest reserves in Community Resource Management Areas and Upper West Region as a whole.

Moreso, community members should freely and willing to take up conservation measures irrespective of their job roles. As help for woodland preservation has been driven by the conviction that timberland spread was in charge of good precipitation and as a solid wellspring of fuel wood (Arjunana, et al., 2006).

Moreover, government should know that the human resource capacity in some districts are low as compared to others and should try to enhance it through formal classroom education, on-the-job training as well as through other academic programs designed in line with nature conservation and development.

Finally, stakeholders who are tangled in activities leading to the exploitation of natural resources should be punished and even be removed from their respective positions they occupy, and this should be backed by laws.



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APPENDICES

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QUESTIONNAIRE ON: MANAGING NATURAL RESOURCES FOR SUSTAINABLE LIVELIHOODS, A STUDY OF THE CHAKALI COMMUNITY RESOURCE MANAGEMENT AREA (CREMA) IN WA EAST DISTRICT.

Dear Sir/Madam, this questionnaire is designed to help me collect data on managing natural resources for sustainable livelihoods, a study of the Chakali community resources management area (CREMA) in the Wa East District. You are assured that your responses would be treated confidentially and used for only academic purposes.

Please tick where appropriate and answer all the questions to the level of your understanding.

APPENDIX A

SECTION A

DEMOGRAPHIC DATA OF RESPONDENTS

1. What is the name of your community?

Bulenga []

Tissa []

Katua []

Ducie []

2. Sex



Male [] Female []

3. What is your highest level of formal education?

Tertiary []

Senior High []

Junior High []

Primary []

No formal education []

Others specify.....

SECTION B

UNDERSTANDING OF NATURAL RESOURCE AND COMMUNITY

DEPENDENCE

4. What is your understanding of natural resource?

.....
.....
.....

5. List out some available natural resources you know exist in this community.

.....
.....
.....
.....
.....



6. Who owns natural resources in this community?

.....

.....

7. How dependent are the community members on natural resources listed in Q5?

Natural Resources	Dependency (Frequency)	Total

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SECTION C



HUMAN ACTIVITIES THAT LEADS TO EXPLOITATION OF NATURAL RESOURCES.

8. What are some of the activities that leads to exploitation of natural resources?

Human Activities that exploit natural resource	Frequency	Total

9. How severe are the above stated human activities that leads to exploitation of natural resource?

Human Activities that exploit natural resource	Frequency/ Severity	Total



SECTION D MEASURES IN PLACE FOR MANAGING NATURAL RESOURCES.

10. What are some of the measures in place for conserving and managing natural resources?

Measures in place for Resource Management	Frequency	Total

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11. How effective are these measures in conserving and managing natural resources?

Measures in place for Resource Management	Frequency/effectiveness	Total

SECTION E STAKEHOLDERS AND THEIR ROLE IN CONSERVING AND MANAGING NATURAL RESOURCES.

12. List the stakeholders in Community Resource Management Areas?

.....

.....

.....

.....

.....

What roles do these stakeholders play in terms of natural resource management?

Stakeholders	Role(s)	Total

13. How effective are the roles of the above stated stakeholders?

Stakeholders	Effectiveness of roles	Frequency	Total



Thank you for your responses and cooperation.

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APPENDIX B

This is to guide the researcher to conduct a successful interview to help get information on the topic managing natural resources for sustainable livelihoods, a study of the Chakali community resources management area in the Wa East District. Answer to the question are purposely for academic purposes and will be treated with the utmost confidentiality.



1. What is your understanding of natural resources?
2. List out the natural resources that exist in this community
3. Who owns the natural resources in the community?
4. Are there laws regulating the use of the natural resources in your community?
5. How effective are these laws?
6. List out the negative environmental practices that are been carried out in the Community?
7. What are the cause of these negative practices you have listed?
8. What measures have been put in place to ensure that there is effective management and sustainable use of the natural resources?
9. How effective are these measures?
10. Suggest measures that can be adopted to control the negative environmental practices

11. Suggest measures by which the natural resources can be conserved for sustainable use
12. Who are the major stakeholders in managing resources in this community?
13. What role(s) do the stakeholders play in ensuring management of natural resource?



APPENDIX C



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