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Access to fishing grounds and adaptive strategies

The case of Chorkor and Nungua Fishing Communities of Greater Accra Ghana

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DECLARATION

I hereby declare that, this thesis is the result of my own original research and that no part of it has been submitted anywhere for else for any purpose. All references have been duly acknowledged and I therefore bear a sole responsibility for any shortcomings.

Nicholas Sobang Badidaamet

I hereby certify that this thesis was supervised in accordance with the procedures laid down by the University of Tromso, Faculty of Biosciences, Fisheries and Economics

Professor Johnsen Jahn Petter

Supervisor

DEDICATION

This thesis id dedicated to my mother, Madam Stella Kupock and my brother, Mr. Yinzee Sobang for their love, care and support and encouragement.

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May the good Lord bless us all

ABSTRACT

Artisanal fisheries are increasingly been accepted as the panacea for exploiting marine resources in costal Ghana. However evidence mustered over the years indicate that the local fisher-folk who are engaged in small scale fisheries hardly get full participation in making decision governing these resources. The current study examine the factors that constrain fishers participation in decision making and how this impact on their livelihood adaptation strategies. With the combination of the Livelihood Approach and the Intuitional analysis framework, data was collected by interviewing key informants from Chorkor and Nungua fishing communities of Greater Accra, Ghana. Document analysis and observation were also employed in the data collection process. Data was analysed using Miles and Huberman (1994) approaches to data analysis. Findings indicate that, the effective participation of rural fisher-folk in making decisions on access to fishing grounds and other livelihood adaptation strategies is a complex task due to the institutional gap between the formal government and the traditional chiefs of the fishing communities. Further analysis affirmed that the type of decision making chain (top-down approach) pertaining to access, does not promote the effective participation of local fishers since policies are passed down from the top government officials. It was also clear that the fisher-folk are not represented in the Fisheries commission due to that, they are not abreast with the kind of policies that the commission institute regarding access. Pertaining to the vulnerability context, results indicate that although the fisher-folk are vulnerable, a significant number of them had devised several coping strategies out of their current situation of declining catches. Institutions play a major role in fisheries governance however, findings show that the main legislative instrument, Fisheries Act 2002 (Act 625), governing the fisheries sector and the sector ministry have no provision on access to fisheries resources. Out of the discussions of the findings, the study recommends for the development of institutional structures that make it possible to effectively integrate the local fisher-folk in the fisheries commission where major decision and policies are made. Furthermore, using existing viable community customs and traditions to manage local resources have a higher propensity of success because they already have the legitimacy, support and commitment of those they represent. Finally, government should to commit itself to effectively decentralizing the act of decision-making process so as to adequately empower local fisher-folk in implementing their own management objectives. This could immensely improve their livelihood adaptation strategies.

Key Words: Access to fishing grounds, livelihoods, adaptations, institutional framework

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Acronyms and abbreviations

AMA	Accra Metropolitan Assembly
CBFMC	Community-Based Fisheries Management Committee
CF	Chief Fisherman
DA	District Assembly
DACF	District/Municipal Assembly Common Fund
DCE	District Chief Executives
DFID	Department for International Development
DoF	Department of Fisheries
EEZ	Exclusive Economic Zone
ERP	Economic Recovery Programme
FC	Fisheries Commission
ESRP	Emergency Social Relief Programme
FAO	Food and Agriculture Organisation of United Nations
FSCBP	Fisheries Subsector Capacity Building Project
GDP	Gross Domestic Product
GoG	Government of Ghana
GSS	Ghana Statistical Service
HRMD	Human Resource Management and Development
IEZ	Inshore Exclusion Zone
LEKMA	Ledzokuku-Krowor Municipal Assembly
IMF	International Monetary Fund
MOFA	Ministry of Food and Agriculture
MCS	Monitoring, Control and Surveillance

Acronyms and abbreviations

MDA	Ministries, Departments and Agencies
MLGRD	Ministry of local Government and Rural Development
NGO	Non Governmental Organisation
PHC	Population and Housing Census
NAFAG	National Fisheries Association of Ghana
NDC	National Democratic Congress
NICFC	National Inland Canoe Fishermen's Council
NRCD	National Redemption Council Decree
NPRP	National Poverty Reduction Programme
PNDC	Provisional National Defence Council
PIP	Policies Institutions and Processes
PSI	President's Special Initiative
SFC	State Fishing Cooperation
SL	Sustainable Livelihood
SLA	Sustainable Livelihood Approach
UK	United Kingdom
UNDP	United Nation Development Program

CHAPTER ONE

INTRODUCTION

This chapter presents the general introduction and organization of the study, the problem statement, the objectives of the study as well as it significance/importance.

1.1 BACKGROUND INFORMATION

Fishing has been a major source of food for humanity and a provider of employment and economic benefits since ancient times. However, there have been huge changes in the sector over the last 50 years due to a strong emphasis on growth in production and a focus on industrializing and modernizing fishing fleets. Albeit fishing is still an important element of locally based economies for a large number of households across the developing world, it has become an increasingly dynamic sector of the world industry.

In many African countries, fish is still generally considered as a cheap source of animal protein, affordable to poor population groups, however, the contributions that fisheries make to poverty reduction is becoming threatened due to increasing scarcity (World Fish Center, 2005) and insufficient attention being paid to the local features and demands of small-scale fisheries and fishermen (Lindqvist and Molsa 1992:192)

The importance of fisheries for subsistence and economic development varies throughout West Africa. For instance, fisheries in Ghana are enormously important in relation to livelihoods, with an estimated 10% of the population directly (as fishers and processors) or indirectly (as traders, canoe carvers, or premix fuel sellers) dependent on fishing (Akyeampong 2007). It therefore plays a major role in poverty alleviation (Mensah et al.2006).

1.2 PROBLEMS AND CHALLENGES IN GHANA'S FISHERIES MANAGEMENT

Artisanal fisheries is increasingly been accepted as the panacea for exploiting marine resources in costal Ghana. Ghana has a long fishing history and together with Senegal, it has the largest fishing industry in West Africa. As has been reiterated by Odotei (1991) and Haakonsen (1992), reports from old European travel provide evidence that Ghanaians (Fantes' in particular) were already fishing at sea before 1471. The contemporary Ghanaian fishing sector consists of marine fisheries, inland fisheries (which takes place mostly on lake Volta), and aquaculture. The marine sector according to Mensah et al. (2006) is the most important, providing 80% of domestic supply while the artisanal fisheries which is also the most important subsector within the marine fisheries, contribute 60-70% of the marine fish output. Fishing has

been an important source of living for the people settling along the coast (Mensah, 2010). The role of fishing in national development, both from a poverty point of view and from a national economic perspective, poses some interesting topical issues for Ghana's development agenda. According to the Interim Poverty Reduction Strategy Paper (2000-2002) issued by the Ghana ministry of Finance, the government of Ghana overall strategy (fostered and encouraged by both the World Bank and IMF) is to produce a middle income country by the year 2020. This is to be achieved through the modernization and accelerated growth of the agricultural sector, of which fisheries is a major key component (GoG, 2010:1)

Fishing makes up of about 5% of Ghana's agricultural GDP. Eighty-five percent of the national catch comes from the sea while inland waters account for the other 15%. About 75% of total national production is consumed domestically and a further 35,000 tons is imported to meet this demand (Kraan, 2009). Fish is the country's largest non-traditional export earner, accounting for about US$17 million (World Bank, 1995:4). According to recent statistics, fishing activity accounted for an estimated 3% - 4.5% of GDP of the country in the year 2010. (Gorden & Pulis 2010). According to them, fish capture, marketing, processing and associated services constitute a significant source of livelihoods in coastal areas and along lakes and rivers.

Poverty in Ghana is overwhelming a rural and coastal phenomenon which afflicts about two-thirds of Ghanaians who are predominantly rural dwellers. In the most recent times, various poverty alleviating schemes, such as Emergency Social Relief Programme (ESRP), National Poverty Reduction Programme (NPRP), the institution of the District/Municipal Assembly Common Fund (DACF), the Decentralization Programme of government and others have been instituted to target resources at the poorest of the poor in the society, however, most of these projects are either abrogated in their embryonic state or do not stand the test of time. Despite these advances in rural development efforts, it is pertinent to indicate that; small-scale fishers in Chorkor and Nungua are still faced with the same issues of poverty and difficulties irrespective of the water body they fish in.

Evidenced mustered over the years on previous projects indicate that, the distribution of wealth is a function of access to wealth-enabling resources, as reiterated by Bennett et al. (2002). Assets are seen as means of making a living among coastal households and they give meaning to their world. Assets such as natural, human, physical, financial and social all contribute to enhance the world being of mankind. The distribution of wealth and the traditional power structure is a major element at the community level. Fishing communities are not homogenous,

and egalitarian units, but a heterogeneous group of villagers bond together under the leadership of a common chief where power alliance and political struggles are daily phenomena. Wealth in fishing communities like Chorkor and Nungua are represented by access to the means of production, thus ownership of nets, canoes or smokers raises some fishers and fish mammies into a category far above others that have to sell their labor. In some communities power (access) is held by family units sometimes based on matrilineal lines (Ninsin 1991:102).

The Ghanaian Fisheries structure has two main arms of governance thus the governmental (formal) institutions and the traditional institutions. The central government wing consists of the main government institutions (MOFA, Ministry of Justice, Ministry of Lands and Forestry) at the National, Regional, District and the town council levels. The traditional arm consists of the National and Regional house of chiefs, the traditional councils and the chief fisherman. There seems to exist a huge gap between these two arms in terms of policy making regarding access to fishing grounds. Although the traditional arm is closer to the fishermen at the local level, most of the decisions regarding access to fishing grounds are determined by the national government. This top-down approach governing access to fishing grounds in Ghana terms to promulgate misunderstandings between the two arms of governance. It creates a gap between the governing system and the system to be governed thereby not promoting effective communication between the two systems. The problem is far more convoluted and visible in developing communities like Chorkor and Nungua and according to Pomeroy & Williams (1994), fisheries managers now recognize that a fishery cannot be managed effectively without the cooperation of fishers in making laws and regulations work. Official government intervention affects access and ownership of these fishing grounds. This research explores the relationship between the different arms of the government structure and how this gap impacts access to fishing grounds.

The sector stands a greater chance of enhancing rural livelihood through the livelihood approach, which aims at searching for more effective methods to support people and communities in ways that are more meaningful to their daily lives and needs, as opposed to ready-made interventionist instruments (Appendini 2001:24). This research therefore seeks to examine the vulnerabilities and adaptive strategies of rural fisher-folk and how local management systems at the community level determine access to fishing grounds. It will also investigate the extent to which local fishermen participate in decision-making and possible ways of arresting conflicts resulting from access. It will document instances of conflicts arising

in small scale fisheries, particularly in Chorkor and Nungua, as a result of competition in fishing area, competing fleets, by-catch and the type of fishing gear used.

1.3 RESEARCH OBJECTIVES

A lot of development interventions aimed at rural livelihoods and fisheries research often focus less on local participation from the commencement to the finishing of such interventions (Konadu-Agyemang, 2004, see Oware, 2012). Meanwhile in most cases, they are seen as the direct beneficiaries of such interventions and yet they are less involved. As has been contended by Ellis and Allison (2004), the livelihoods of fishermen without access to fishing grounds or resources will often be more vulnerable because, they have difficulty in obtaining food, accumulating other assets and recuperating after natural/market shocks and other misfortunes. Access to fishing grounds according to them can be the basis for building assets that permits the individual fishermen and households to construct their own exit routes out of poverty, lessen the vulnerability of the poor to food security and livelihoods collapse, improves the quality of sustainability of natural resources that constitute key assets in rural livelihoods and widens peoples options thereby reducing reliance on particular natural resource (Ellis and Allison 2004).

Generally, my study aims at assessing the challenges facing the artisanal fisheries in Chorkor and Nungua communities of Costal Accra in relations to access to fishing grounds and local participation in decision-making. The main objective is to clarify whether or not the gap between the formal and traditional governance structure can be the cause for conflict in access to fishing grounds. The study will address the following specific sub-objectives:

- To examine how local fishers are able to access their assets
- Who are the participants in decision making regarding access
- To examine the vulnerabilities and adoptive strategies of rural fisher-folk
- To investigate the factors that constrain fishers participation in decision making

1.4 SPECIFIC RESEARCH QUESTIONS

If these two communities and Ghana as a whole can reduce poverty among coastal and inland communities in West Africa through the active participation of the rural fisherman in decision-making pertaining to accessing fishing grounds, then the following research questions will have to be answered.

- What is the importance of access to fishing grounds for the fishing population in the Greater Accra?
- How is the decision making system for access to fishing grounds organized?
- What kind of institutional Challenges does this system meet?
- Does the absence of local participation in determining access to their livelihood assets create conflicts?
- How is Access and vulnerability related to each other?
- What are the main adoptive strategies of the rural fisher-folk and how can they be realized?

1.5 JUSTIFICATION AND RELEVANCE

The significance of this study is to ensure that increase decentralization and the community involvement in the decision-making of costal artisanal fisheries would ensure a fairer representation of community interest. As contended by Allison and Ellis, (2001) the livelihood approach provides a search for more effective methods to support people and communities in ways that are more meaningful to their daily lives and needs. Using this approach, the findings of the research will provide the basis for the formulation of policies by individuals, government officials, NGOs, the fisheries commission and the general public. Policies formulated would focus on the encouragement of greater local participation in decision-making in the sector through the livelihood approach since they bear the brunt of problems associated with its development.

This research will address the social problem of declining catches through improved fisheries governance. Understanding the strength and workings of the sector is imperative for developing good governance for the fisheries sector.

The findings of this research will provide some necessary steps and strategies towards encouraging and promoting better decision-making on access to fishing grounds by artisanal fishers in both Chorkor and Nungua communities.

Furthermore, the study will provide an appropriate assessment on the benefits of community participation in the organization and management of costal artisanal fisheries. This could be seen as one of the best ways for facilitating effective rural development that could ultimately help alleviate rural poverty and enhance rural livelihoods.

Due to lack of knowledge and little statistics in the sector very little has been written about the topic, hence this study will serve as the key to unlocking the potentials of the municipality. Social science research in the area of fisheries management in West Africa is scarce and few studies address the local features and demands of small-scale fisheries and fishermen (Lindqvist & Mölsä 1992: 192).

The study will therefore stimulate and complement scientific research on the importance of involving the local fishermen in every aspect of the decision-making process pertaining to the accessing of fishing grounds and other livelihood assets. This initiative could unveil exits routes for the artisanal fisherman out of poverty.

1.6 ORGANIZATION OF THE STUDY

The study is structured in to six chapters. Each chapter has subdivisions dealing with various aspects of the study. The present chapter gives a general introduction, research objectives and questions as well as the significance of the study. The subsequent chapters two and three outlines the principles and concept of the livelihood and the methodological approaches used in the study as well as a detailed background information of the research areas respectively. Chapter four is dedicated to the Ghanaian fisheries sector, policies and institutional framework as well as the general management issues. Chapter five presents the research findings, discussions and analysis. Chapter six gives a general summary, drawing conclusions and giving the necessary recommendations.

CHAPTER TWO

CONCEPTUAL AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION

This chapter gives an overview of the conceptual and theoretical framework of the Livelihood approach to fisheries management. It also conceptualizes the governability framework for assessing the effective management of the Ghanaian small scale fisheries.

2.2 THEORY OF THE TRAGEDY OF THE COMMONS

The Ghanaian Artisanal fishing industry is characterized by an open-access regime. In this regime, the individual receives all of the economic benefits accruing from the fisheries. The resulting stock depletion is shared among all resource users and this eventually results in the tragedy of the commons (Hardin 1968,:1244). Garrett Hardin's theory of the tragedy of the commons is one of the most cited publications of recent times, and is also among the most influential theories for ecologists and environmental policy researchers. His theory was developed based on the findings of Gordon (1954) model on Bio-economic equilibrium which states that, the consequences of open access systems are that, fishermen will continue to enter the fishery sector as long as revenues minus costs remain above zero, until ultimately the net revenue of the entire fleet is zero thus the bio-economic equilibrium (Gordon, 1954). Gordon, whose model was developed ten years before Hardin also argued that at this equilibrium the resource is depleted as far as economics will allow and fishermen will move to alternative fisheries, resulting in the sequential depletion of fish stocks. Hardin in his theory, therefor drew a conclusion that there is a tragedy as each man is locked into a system that compels him to increase his herd without limit, thus in a world that is limited. Drawing from these theories, it is therefore of no doubt that a situation where by too many fishermen turn to chase too few fishes, could eventually lead to conflicts over access to these resources. With so many years after Hardin's theory, many open-access resources have indeed resulted in tragic levels of overuse and sometimes destruction.

Many scholars and public officials have relied upon the conventional analysis to justify the need for centralized control of all common-pool resources through the creation of National legislation where the administrative responsibilities for managing natural resources have been turned over to centralized agencies. However, it is pathetic to note that despite this fact,

innumerable studies have demonstrated that users of natural resource have overcome the social dilemmas of Hardin's theory by crafting institutions to govern their own resources. Institutions alone, however, are not enough and still do not hold the final key to this problem, because in most cases, institutions in themselves cause conflicts.

The sustainable livelihood approach, which is prominent in recent development, seeks for a greater involvement of all stakeholders with specific sets of guiding principles and an analytical framework for fisheries management (Neiland & Be´ne´ C 2004). These set of operational principles aim at reducing poverty and vulnerability in communities engaged in small-scale fishing, their assets and access to fishing grounds, fish processing and trading (Stirrat, 2004). The main idea is to build stakeholder capacity to improve poor people's access to natural resources through the application of sustainable livelihood approaches.

2.3 THE LIVELIHOOD APPROACH TO FISHERIES MANAGEMENT

The concept of "livelihoods" has become increasingly popular in development thinking as a way of conceptualizing the economic activities poor people undertake in their totalities (Michelle & Ruth, 2002). The term as Ellis & Allison (2004) puts it does not only capture what people do in order to make a living, but the risk factors that they must consider in managing their resources, and the institutional and policy context that either helps or hinders them in their pursuit of a viable or improving living.

Ashley and Carney (1999) contend that the Sustainable livelihoods approaches have evolved from three decades of changing perspectives on poverty, how poor people construct their lives, and the importance of structural and institutional issues. But what does the new entry of this approach into the development lexicon actually mean?

2.3.1 The Basic Livelihood Framework

The livelihoods framework brings together assets and activities as well as illustrates the interactions between them. The sustainable livelihoods conceptual framework has been used by a growing number of research and applied development organizations, including the Department for International Development (DfID) of the United Kingdom (one of its most ardent supporters), the United Nations Development Program (UNDP), as well as nongovernmental organizations (NGOs) such as CARE and Oxfam (DfID 1997; Carney et al. 1999). The basic livelihoods approach or framework is illustrated in Figure 2.1. The framework is a kind of development objective and an approach to poverty eradication based on core principles of people-centered, participatory and sustainable activities. Sustainable Livelihood

(SL) approach according to Allison & Ellis (2001) is also an analytical framework that provides a way of understanding the factors that influence the ability of people to achieve SL in a particular circumstance.

In the livelihoods approach, resources are referred to as 'assets' or 'capitals' and are often categorized between five or more different asset types owned or accessed by family members. Another future of the SL approach is that, it regards the awareness of asset and access statues of poor rural fishermen to fishing grounds as fundamental to understanding of the options open to them. One of its basic tenets as proposed by Moser (1998) is that management policies pertaining to rural livelihood should be concern with raising the asset and access statutes of the poor. The approach looks positively at what is possible, rather than negatively at how desperate things are. As articulated by Moser (1998: p.1) it seeks "to identify what the poor have rather than what they do not have" and "[to] strengthen people's own inventive solutions, rather than substitute for, block or undermine them". This means identifying institutions that hamper and block people's ability to construct improved livelihoods by making use of their traditional structure of governance.

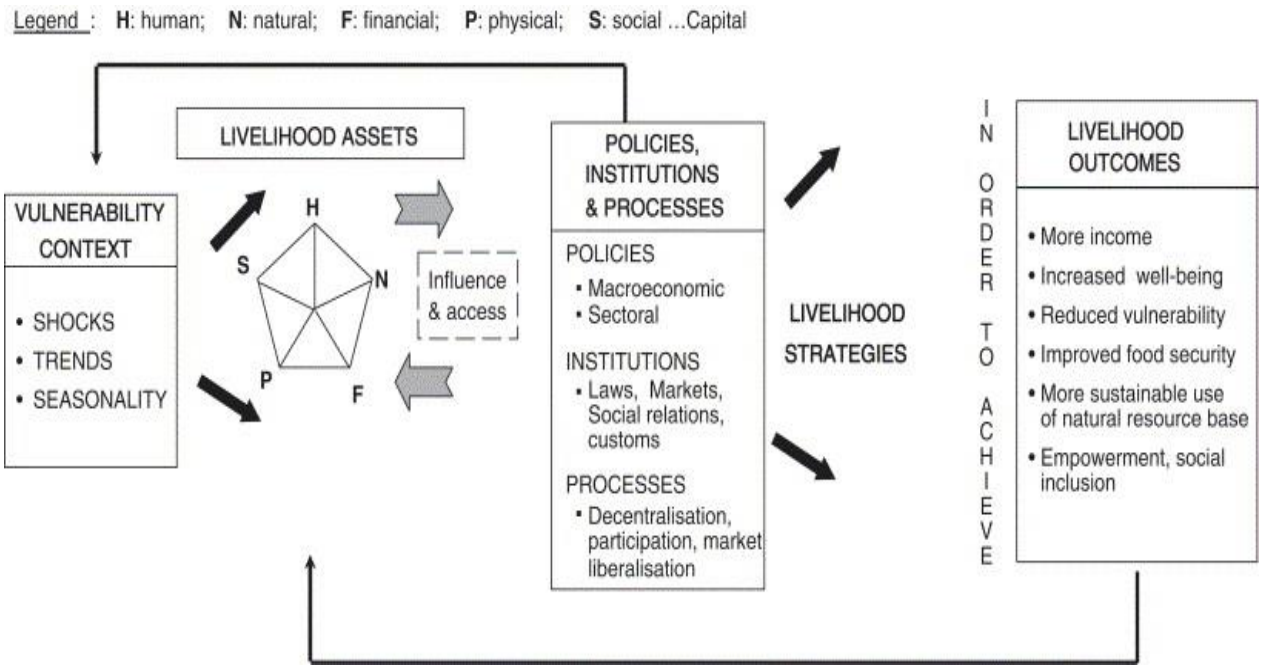


Figure 2.1: Showing the livelihood framework Approach (Source: DFID, 1999)

As illustrated in the livelihood framework, the things people do in pursuit of a living are referred to as livelihood 'activities' or assets. The risk factors that surround making a living are

summarized as the 'vulnerability context', and the structures associated with government (national and local), authority, laws and rights, democracy and participation are summarized as the 'policy and institutional context'. People's livelihood efforts, conducted within these contexts, result in outcomes: higher or lower material welfare, reduced or raised vulnerability to food insecurity, improving or degrading environmental resources. These, in turn, shape the livelihood outcomes. However, those outcomes are not necessarily the end point, as they feed back into the future asset base. The arrows show a kind of feedback within the framework.

From the framework, it is absolutely clear that Access to both assets/activities is either enabled or hindered by both the policy and institutional context and the vulnerability of the fisher folks.

According to Carney, (1998) and Bebbington, (1999), The livelihoods approach sets out to be people-centered and holistic, and to provide an integrated view of how people make a living within evolving social, institutional, political, economic and environmental contexts. It has proved to have considerable strengths, especially in recognizing or discovering the multiple and diverse character of livelihoods (Ellis, 1998; 2000). The main concern of this thesis is to address the prevalence of institutionalized blockages to improving livelihoods and how these blockage or gap between traditional and formal government system can inhibit fishers' access to fishing grounds.

2.3.2 The Vulnerability Context

The starting point of the framework is the vulnerability context within which people operate. Vulnerability here refers to situations that are outside people's control. They are usually negative but can also provide positive opportunities. This component encompasses three main external factors that may affect the livelihood assets of the rural fisherman.

The first factor talks about shocks which may include storm damages to shore facilities such as fishing boats, nets, fuel-price hikes and currency devaluations that affect the costs of fishing inputs and market prices for fishing products (Ellison & Beniot 2006). For instance, the theft or loss of a fishing net is obviously considered as a shock.

The second factor deal with trends beyond the control of the fishers household which might include decrease in catches (Atta Mills 2004), increase prices for fish and other factors unrelated to fisheries that nevertheless impact on fishing households, such as rising costs of food staples or medicines. In the Ghanaian context, it also explains the trends in migration of

fishers as a result of the migration of fish species form one coastal region to the other (Kraan 2009).

Seasonality which is the third factor refers to seasonal changes within the fishing seasons such as temporal closures, closed seasons, etc. These factors, to a greater extent, when addressed could assist in designing fisheries management policies with the full participation of the rural fishers since they bear the brunt of the problems.

2.3.3 Livelihood Assets of fisher households

The Livelihood activities of rural fishermen may be composed of a year-round or seasonal fishing where they target common resources such as the different fish species. Assets have been defined as: 'stocks of capital that can be utilized directly, or indirectly, to generate the means of survival of the household or to sustain its material well-being at differing levels above survival' (Ellis 2000: 31). As has been argued by DFID (1999) and CASE (2003), assets can be arranged in a particular sequence along with substituting each other. However, Ekins et al. (1992) noted that there is a limited scope for substitution. This is because of the unique quality of assets, particularly the natural assets. These assets could be used to develop the people's potential so that they can lead a fulfilling life (Ekins et al. 1992). In essence the assets are at the core of making a livelihood. These assets are often categorized between five or more different asset types owned or accessed by family members: human capital (skills/labour, education, health), physical capital (buildings, irrigation canals, roads, machines, fishing equipment), financial capital (money, savings, loan access), natural capital (fish species, water, trees etc.), and social capital (networks and associations) (Ellis (2003a; 2003b). From Figure 2.1, these five factors influences the access to fishers assets, of which fishing grounds, is an importunate factor among them. The ability to possess these factors, to a large extent, determines one's access to livelihood assets.

2.3.4 Policies Institutions and Process (PIP)

Policies, institutions, and processes affect how people use their assets in pursuit of different livelihood strategies. The box in figure 2.1 refers to both formal and informal institutions and organizations that shape livelihoods by influencing access to assets, livelihood strategies, vulnerability, and terms of exchange. PIP may occur at multiple levels, from the household to community, national, and even global level. The public and private sectors, civil society, and

community institutions may all be relevant considerations; laws as well as culture can also be included.

These three factors (PIP) are usually perceived as the heart of fisheries management. However, in fisheries management literature, the role of the state and market has received a lot more attention than the role of civil society. 'The community and its institutions are a central governance issue that is largely ignored in the state governance approach to fisheries' (Jentoft 2005: 151, see also Scott 1998 for an understanding of the limited knowledge of society available at state level). Another reason could also be that fish exceeds common boundaries thereby making governability a bit cumbersome. It is of no doubt that, society's cultural setup to a large extent determine the process of people's access to natural resources. These are usually stipulated in institutions which are the standardized ways of doing things. As stated by Jentoft (2004), 'Institutions tie us, as individuals, to society'. Institutions establish laws and regulations that govern the individuals' interactions. Power relations are embedded within institutional forms, making contestation over institutional practices, rules and norms always important. This is the more reason why Davis (1997:24) defined institutions as;

"the social cement which link stakeholders to access to capital of different kinds to the means of exercising power and so define the gateways through which they pass on the route to positive or negative [livelihood] adaptation"

Institutions could either be formal or traditional customs and other bye-laws enacted by the traditional chiefs to govern their people. Through policies, institutions and process, the livelihood framework recognizes the contributions of the rural people, whether poor or rich as actors, with assets and capabilities who act in pursuit of their own livelihood goals (Michelle & Ruth, 2002).

However it is worth nothing that, while this may seem obvious, in many cases the poor have been regarded as passive victims or recipients of government policies and external aid (Carney 2002; DfID 2001). Understanding how institution and process work in order to achieve sustainable livelihood is very crucial because they are perceived as the 'gateway' to sustainable livelihoods. As Carney, (1998) puts it, they sheds light on the social processes which underline livelihood sustainability.

2.3.5 Livelihood Strategies: Portfolios and Pathway

Livelihood Portfolios and Pathway as indicated in figure 2.1, refers to the range of options opened to the rural fisherman in order to achieve a livelihood outcome. Among these options

could include agricultural intensification/extensification, livelihood diversification and migration.

In the Ghanaian fisheries sector, mobility and migration is an important component of many fisher-folk livelihood strategies (both men in the catching sector, and women in the post-harvest sector) (Korenteng 2006). The phenomena of fisher migration within the West African Coast have been documented by Kraan (2009), Akyeampong (2007) and Ninsin (1991).

Livelihood diversification is a key element among the Ghanaian small scale fishers (Kraan 2009). It is seen more as a coping strategy during close seasons. Diversification aims at coping with temporary adversity or more permanent adaptation of livelihood activities, when other options are failing to provide a livelihood. Diversification as indicated by Ellis (1998) may involve developing a wide income earning portfolio to cover all types of shocks or stress jointly. The strategy may also involve focusing on developing responses to handle a particular type of common shock or stress through well-developed coping mechanisms. Adopting different livelihood portfolios by fishermen enable them to ameliorate problems associate with low catches in order to be able to take care of their households.

2.3.6 Livelihood Outcomes

The type of livelihood strategies adopted by the individual or household determines the outcome of such activities. As depicted in figure 2.1, livelihood outcomes could either be positive or negative. This explains the reason why all the other parts of the framework must come to play in order to achieve a positive or a sustainable livelihood outcome. A livelihood, according to Ellison & Beniot (2006), can only be considered sustainable when such an activity is able to maintain or improve the individual's standard of living related to well-being and income or other human development goals, reduce the individual or household vulnerability to external shocks and trends, and ensure their activities are compatible with maintaining the natural resource base: in this case the fish stocks.

Potential outcomes as indicated in the diagram could include conventional indicators such as income, food security, and sustainable use of natural resources. Outcomes can also include a strengthened asset base, reduced vulnerability, and improvements in other aspects of well-being such as health, self-esteem, sense of control, and even maintenance of cultural assets, and thus have a feedback effect on the vulnerability status and asset base.

2.4 THE LINK BETWEEN ACCESS AND CONFLICTS IN SMALL SCALE FISHERIES

In general, conflict emerges when 'the interests of two or more parties clash and at least one of the parties seeks to assert its interests at the expense of another party's interests (FAO, 1998). Usually, conflicts over access seems to been a major case among the local fishermen in both Chorkor and Nungua and the migrant fishermen from other neighbouring countries. Warner (2000) argues that, Conflicts of this type do not necessarily have to be neither violent nor highly disruptive; in fact many conflicts that arise as a result of differing interests are low-level, non-violent phenomena. According to Bennett-(2001), there are three main reasons that could account for conflicts between or among groups regarding access to fishing grounds. Conflict can arise as a function of social structure (the sociological perspective), as a function of power relations (the political perspective) or as a result of rational decision-making by individuals seeking to maximize their personal utility given a pool of scarce resources (the economic perspective).

In most cases of conflicts, there is usually the 'perception' that one group is gaining (or, in economic terms, maximizing their utility) at the expense of another in terms of access. It is however sad to note that in many countries, the policy regulating access to fishing grounds sometimes (or often) ignores the community level (Oware, 2012). But this differs a lot, for instance, in Japan where communities have a strong role. As has been argued by Jentoft, (2010), not only have fisheries managers failed to prevent fish populations from overexploitation, but in many instances they have even exacerbated the problems through mismanagement. It has therefore become necessary that resource users become more involved in the management process. By so doing, they could diversify their asset based through the access they acquire. With their full participation in the regulatory implementation and enforcement of management decisions, they stand a better chance of reducing conflicts in small scale fisheries.

It has also been elucidated by Bebbington (1999) that, access is, perhaps, the most critical resource if people are to build sustainable, poverty alleviating rural livelihoods. Therefore, in order for an effective management of small scale fisheries to reduce the problems associated with access to fishing grounds and conflicts, there is the need to examine the governability framework used in managing those fishing grounds as well as the legal legislation under which such grounds were established as guidelines in the management process.

2.5 FISHERIES MANAGEMENT AND GOVERNANCE

Governance according to Kooiman and Bavinck (2005:-, 7), is the aggregate of governing activities carried out by societal actors in response to public needs and visions. It is generally organized and routine, rarely harmonious but typically interactive. The term in recent years has become a key concept in academic debate. It became much popular when the World Bank introduced the term *good governance* to international development at the beginning of the 1990s (Almerigi, Bavinck, Chuenpagdee, & Fanning, 2013). Several researches are now advocating for interactive governance which they believe have a wider participation in governance from a normative as well as from a practical point of view because actors which usually include individuals, associations, firms, governmental agencies and international bodies are involved in the governing process. According to Kooiman et al. (2008), governability in the interactive governance perspective is "the overall capacity for governance of any societal entity or system"

As a concept, it is becoming increasingly important in science and policy. It is being used more and more often in relation to fisheries, replacing the concept management, which is seen as the more instrumental parts of governance (Johnsen 2013). As has been described by Kooiman and Bavinck (2005), governance is 'the whole of public as well as private interaction taken to solve societal problems and create societal opportunities.' This implies that, it includes the formulation and application of principles guiding those interactions. There is also the need to take in to consideration the institutions that enable them. Management is therefore part of governance and is understood in this thesis as all kinds of activities people deliberately undertake on a collective level to regulate fisheries (see Johnsen 2013). According to Kooiman and Bavinck (2005), governance consist of three orders, the first deals with the day-to-day affairs, the second refers to the institutional arrangement within which management takes place and the third comprises the principles and values of meta-governance such as rationality, responsiveness and performance.

Kraan's (2009) understanding of the difference between management and governance and how they both relate to space and time in contrast to Koooiman & Bavinck is that, managers can also be involved in making or changing institutional arrangement (second order governance). Thus, where Kooiman and Bavinck will see the dashed line in figure 2.2 between management and governance as the border for first order governance, Kran (2009) believes that, the second order governance is partly included the management box.

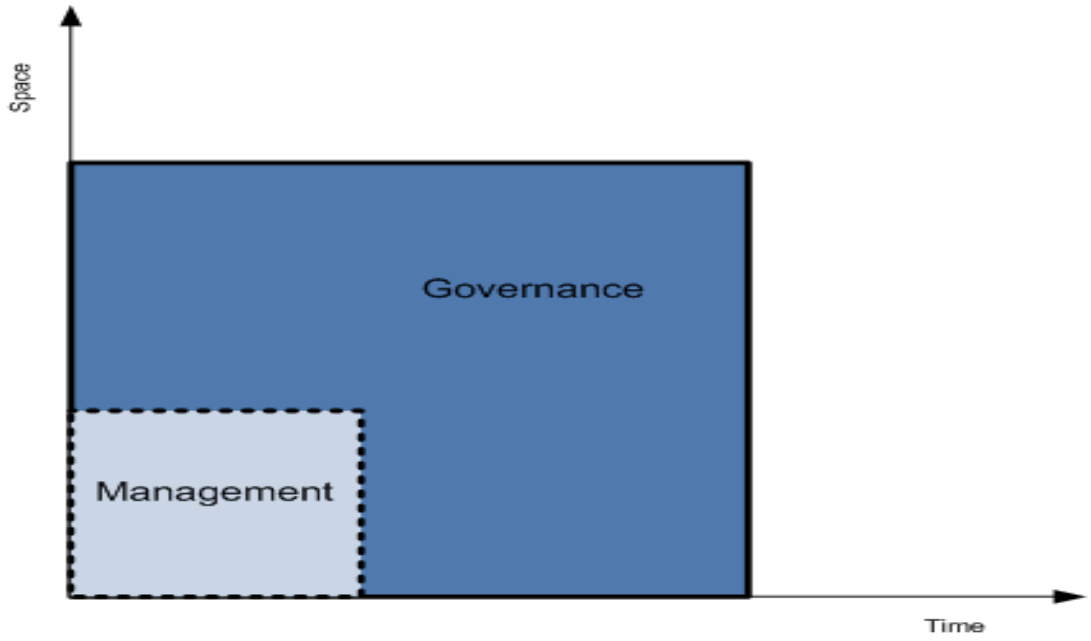


Figure 2.2. Management and governance

Source: Kraan (2009:5)

Jentoft (2006), defined governance as 'a broader concept, which invites a more reflexive, deliberative and value-rational methodology than the instrumental, means-end oriented management concept'. Governance is concerned with the goals one wishes to peruse and management with how to achieve those goals (Jentoft 2008).

Fisheries governance, albeit, includes access management, it sometimes encompass more than that. It is the totality of rules and regulations with regards to fisheries, aimed at reducing risk and creating opportunities for the inhabitants of its territory. In Jentoft (2012a) assessment of the governability framework, he categorically stated that government systems can be divided into the governance system and the systems to-be-governed. In this framework, the governing system includes the legal framework of laws and regulations that govern the particular system (Ministry of fisheries and aquaculture, Community Based fishery Management Committee (CBFMC), NGOs and other formal and informal institutions). It also explains how the different institutional systems interact within themselves.

The systems to-be-governed on the other hand include the Natural System (the different fish species such as Sardinellas, Anchovies, Tuna, Shrimps, Lobsters, cuttlefish), the Social System (SG) (the various stakeholders in the fishing industry such as Commercial fishermen, Small scale fishers, Migrant fishers, boat owners, Net owners, Canoe carvers, Fish processors (fish mongers), and Premix fuel Sales agents). But what is missing in the interactive perspective is

the lack of recognition that both sub-systems (the Governing System (GS) and the Social System to-be-governed) evolve together. When fishermen interact with managers they change the GS and vice versa.

2.6 IMPLICATIONS FOR THE STUDY

Fisheries in Ghana are enormously important in relation to livelihood and this call into question the foundation of fisheries management theory and practice. The legal framework for the Ghanaian fisheries management have two main arms of governance:- the traditional arm and the formal arm. Each of these Governance Systems has its own concepts on what management stands for and as Bromely (2008) indicates, concepts are, however, often misunderstood, thereby making the discussion even more complicated. From the above literature, Kraan (2009) and Kooiman & Bavinck (2005) tried to draw a line between management and governance. However, I believe that apart from managers playing the managerial role, they should be actively involved in creating the institutions (Governance). I feel that Governance begins from the people and since fishing is a livelihood activity, and being central to the survival of the fisher folks, they should be involved actively in both the management and governance of their livelihoods.

2.7 CONCEPTUAL FRAMEWORK

Conceptual framework is a set of ideas used to structure academic research. It is used to make conceptual distinctions and organize ideas. As contended by Miles & Huberman, (1994), conceptual framework could either be in a graphical or narrative form. It usually states the main issues to be studied thus the key factors, constructs or variables and the presumed relationships among them. Frameworks according to them can be rudimentary or elaborate, theory-driven or commonsensical, descriptive or casual (Miles & Huberman, 1994). A rudimentary descriptive conceptual framework was adopted for the study since it displays the catalogue of actors in the decision making process and the outcomes of such decision. One of the general objectives of the study was to assess whether the absence of local participation in determining access to their livelihood assets breed or procreate conflicts between local and migrant fishermen based on management decisions from stakeholders.

The framework adopted (figure 2.3) is typically a visual catalog of roles to be studied. There are four aspects of the study.

- The first aspect deals with the decision making body (Ministry of Fishery and Aquaculture, traditional chiefs, CBMC, Chief fishermen).
- The process and content of the decisions made are in the second aspect.
- The impact of such decisions on the users of the resource (boat and net owners, migrant fishers, fishmongers).
- Finally the outcomes (conflicts, improvement efforts, success or failure indicators).

The governing system is depicted by the two arms of government: - the decision making body consisting of the traditional chiefs, the CBMC and the chief fisherman on one hand and the Ministry of Fisheries and Aquaculture on the other hand. The process and the impact of the decisions made explicate the linkages and interactions between and within the various systems to-be-governed. Jentof (2007) argue that the governing system should be able to cope with the properties of the system to be governed thereby creating a kind of participatory and interactive communication between both systems. This study therefore wishes to bridge the gap between the more actor-oriented livelihoods approach and the more structure-oriented governance approach by using the concept of participation. By so doing, the fisher folks and their household would be seen as actors instead of passive recipients.

The framework to a large extent assisted the researcher in better addressing the problem. It specifies who and what will be studied. It also assumes some relationships, as indicated by the arrows.

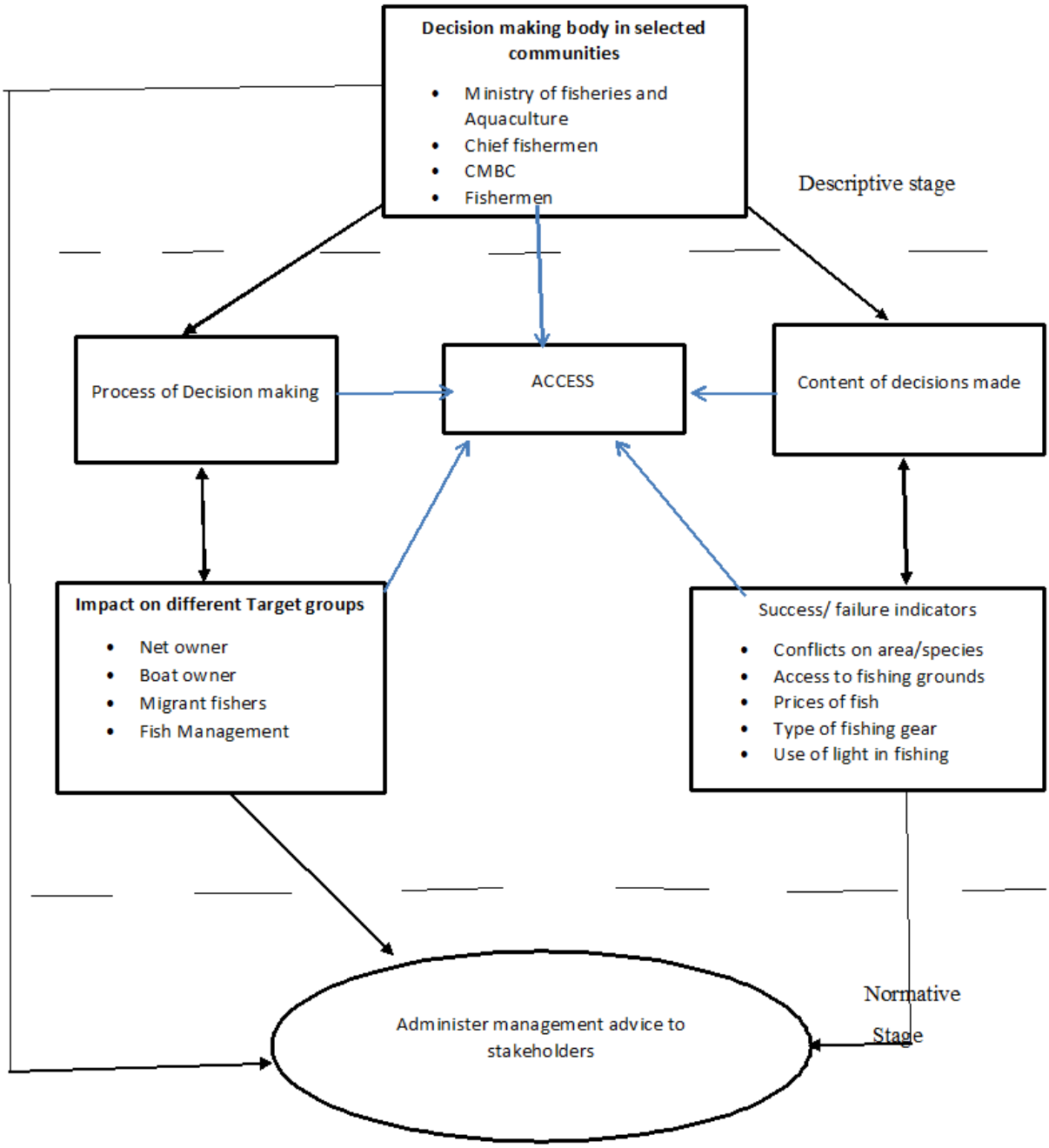


Figure 2.3: Conceptual framework.

Source: (Own construction)

For instance, it shows that, both the process and content of the decisions made would influence one another. The final outcome of the study is to assist the researcher in effectively administering management advice to the stakeholders.

2.7.1 The link between the livelihood Approach and the Institutional Analysis

Governability could better be analysed using the conceptual framework in figure 2.3, however, it is worth noting that, the concepts in the framework are better integrated when the sustainable livelihood approach is brought to play. The framework, therefore, handles the policies and institutional process that determines the success or failures of the livelihoods of the fisher-folk.

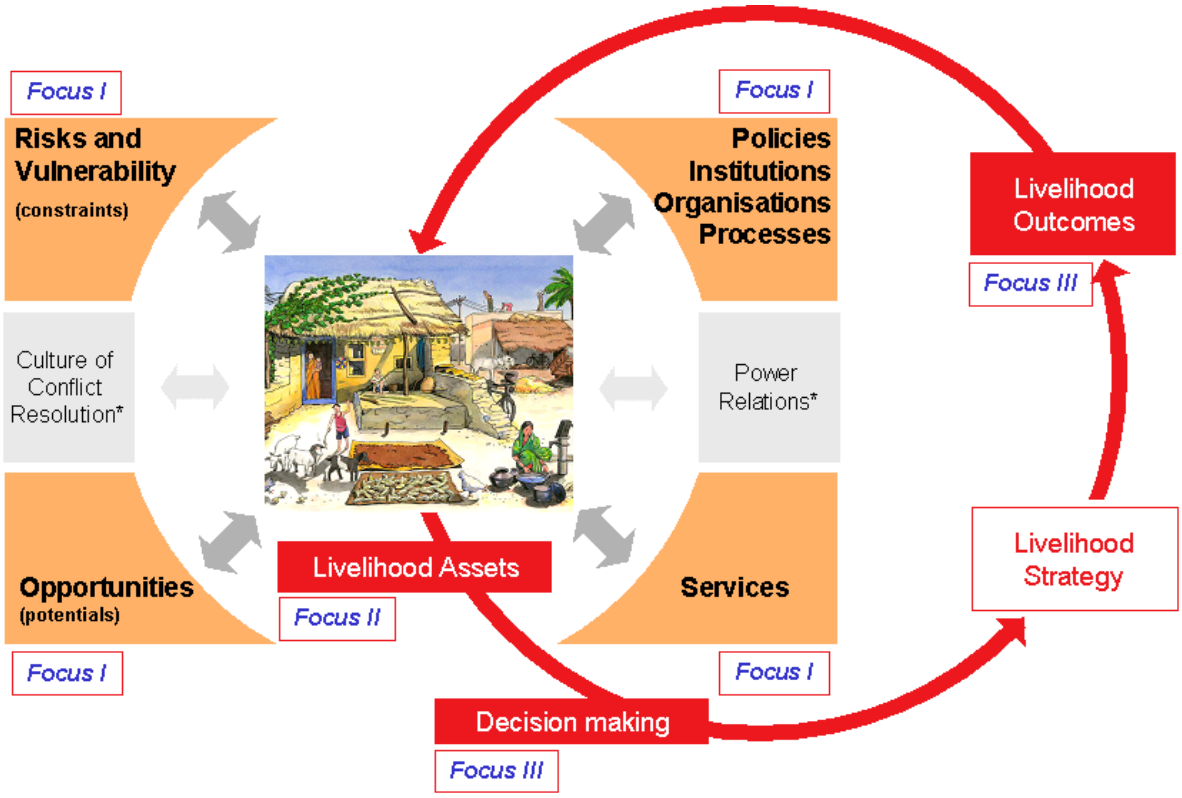


Figure 2.4: Showing the Livelihood Access framework with the conceptual aspect depicted in the circle adopted for data analysis

As indicated in figure 4, the framework put more emphasis on how institutions play a major role in determining access to livelihood assets. These structures and processes operate from the national levels through the village level and down to household level. The aim therefore is to address the institutional shortages in both the formal and traditional governance systems. This could enhance better access and community participation in making decisions, regarding their own livelihoods.

CHAPTER THREE

RESEARCH DESIGN AND ANALYTICAL MODELS

3.1 INTRODUCTION

In pursuit of making fishing grounds mores accessible to the rural fishermen thereby reducing conflicts, the design follow the inductive research strategy where analysis and generalizations were inductively drawn to relations between the facts (Blaikie, 2000). It allowed for short time frame to carry out the entire research process.

3.1.1 Diagrammatic Representation of the Research Process

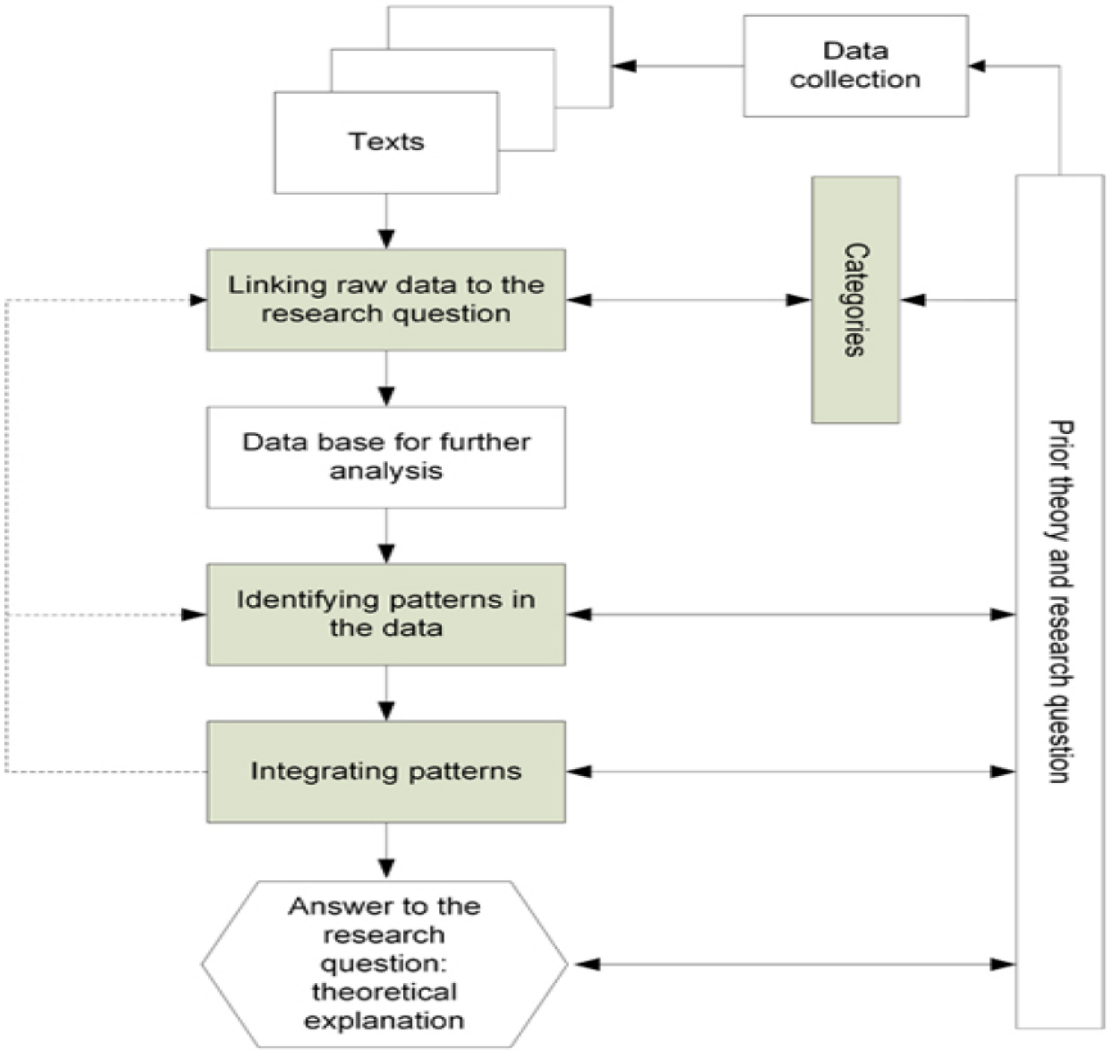


Figure 3.1: Showing the research process.

Source: Miller (2006:8)

The research process began with the data collections in the form of text written from the recordings made during the interviews. McNiff (2002) contends that, the method used to collect the data must always be appropriate to the type of the research being conducted and that, the method used must be able to collect data to answer the research questions and to achieve the research goals. The research adopted several data collection strategies and using Miles & Huberman, (1994) approach of qualitative data analysis, the data was later reduced and categorized and was linked to the conceptual framework and the research questions. For instance, assets were categorized into five main groups of capitals in Chapter five (5). The outcome of these categorization and linkages created further analysis.

The next step in the research process was to identify patterns in the data set taking in to consideration the research question and the framework. According to Miles & Huberman (1994), presenting narrative text in the form of field notes could also be supported using different forms of data displays. For this reason, the researcher used descriptive and Context charts and other explanatory figures. Patterns produced in the process were then integrated in order to answer the research questions. Finally conclusions and verifications were drawn based on the regularities, patterns and explanations. These conclusions were drawn while maintaining the openness and skepticism in the entire research process. For instance conclusions were drawn while maintaining the principles of the livelihood and the institutional analysis approaches.

3.2 POPULATION AND SAMPLING METHODS

The target population for the study includes representatives from the two fishing villages, their chiefs, chief fishermen, boat owners, net owners, migrant fishermen, fishmongers, assemblymen and some selected fishing households and participants from the Accra sub-metro. Purposive sampling method was used in the selection of the two communities as well as the main stakeholders since these were among the major fishing communities in the greater Accra Region with issues of local participation. The other respondents were randomly selected, but confirming that they were all engaged in fishing activities and were either members of the two communities or migrant fishers.

Table 3.1: Showing the number of respondents interviewed

Respondents	Number
Traditional chiefs	2
Chief fishermen	2
Boat owners	5
Net owners	5
Assemblymen	2
Fish Mongers	4
Total	20

Source: Own construction

3.2.1 Data Source

Both primary and secondary data were collected and used as the main sources of information. As human civilization develops, human societies need to understand more their environment, economies, policy and culture (Lawrence 2003). In the light of this, the secondary data was extracted from the related ministries and the fisheries commission, published journals and documents from the internet, maps and other forms of newspaper publications.

3.2.2 Research Instruments

3.2.2.1 ***Interview:*** this involves the act of collecting oral data from research respondents (Denscombi, 2001). According to Robson,

"interviewing as a research method typically involves you, as researcher, asking questions and hopefully, receiving answers from the people you are interviewing" (Robson, 2011; pp; 278).

Interviews could either be conducted through one to one or in a group setting (Robson, 2011). The use of interview has been regarded as the method of choice in qualitative research (Potter & Hepburn, 2005) and could be used as the primary tool in data collection or could be used together with other data gathering tools (Robson, 2011). There are different forms of interviews, ranging from fully structured, semi- structured and unstructured, however semi structured interview and unstructured interview are widely used in flexible designs as described by Miles and Huberman, (1994).

Using in-depth or informal conversational interviews (semi- structured), the strategy helped greatly in producing an illuminating and a rich data on the local management setup in those fishing villages. They were mainly administered to key informants such as the chief fishermen of the two villages, boat and net owners, some selected fishermen and their households, the assemblymen and some few stakeholders from the Accra Sub-metro. The interviews enabled assessment of the local management measures that could be used to promote more involvement of the local fishermen in the process of decision-making regarding access to fishing grounds, the causes and possible solutions to conflicts on fishing grounds, migration issues and the role of the central government and other NGOs in the sector.

Picture 3.1: Showing an interview with a boat owner in his residence at Chorkor (author)

3.2.2.2 ***Document analysis***: Documents such as fish records books, log books, reports, newspapers, and other materials from the Accra Metropolitan assembly were examined to gather evidence for the research. Document analysis was employed to gather evidence on what policies have been instituted regarding access to fishing grounds, the legal and regulatory frameworks governing the fisheries sector. This form of analysis was also done to muster

evidence on issues regarding conflicts between migrant and local fishermen as well as the state of the stock which is reported to be in a decline (Akyeampong, 2007).

3.2.2.3 ***Observation***: The two types of observations are participant and non-participant observations. While in participant observation the researcher takes part in the activities of the subject under investigation, he/she is only a spectator in the non-participant observation; that is, though present, he is not directly involved in the activities of the people who are being studied. In the current study, the researcher employed the non-participatory form of observation as a data collection strategy to complement the interviews and the document analysis described hitherto. The decision to use non-participatory observation is based on the fact the researcher had no fishing experience and could not take the risk of fishing. Observation is a highly skilled activity for which an extensive background knowledge and understanding is required, and also capacity for original thinking and the ability to spot significant events (Mulhall, 2003). Researchers use observation to gather information on non-verbal behaviours. As observation takes place over an extended period, researchers can develop more intimate and informal relationships with those they are observing, mostly in more natural environments, and this makes it superior over experiments and surreys. Observation, especially non-participant, also has the advantage of being free from any bias, subjectivity and idiosyncrasies because of its less reactive nature. Direct observation, unlike interviews, is more reliable and it helps discover whether people do what they say, or behave as they claim. During the course of the data collection, the researcher was privileged to observe some of the fishing activities, especially at the landing sites as fishermen returned from sea.

Because the researcher did not understand nor speak Ga; the language spoken by the participants at the community level, two students from the St Mary's Senior High School in Korle-bu were trained to assist in the translation from English to Ga and Vice Versa. The interviews were administered face-to-face to respondents in June and July 2013.

Trips to the fishing sites were usually made on Tuesdays since most fishers in Ghana do not go fishing on this day, except when there was the need to carry out some observations.

3.2.2.4 ***Photographs:*** using photographs, I was able to obtain a kind of pictorial evidence for the study as displayed in the pictures.

Picture 3.2: Showing an observation of the researcher at a Nungua landing site where fishermen are pulling their canoe from sea (In the background are other fishers preparing their gears for the next fishing activity).

3.2.3 Analytical approach/Data analysis

3.2.3.1 *Miles & Huberman (1994) Approach to Qualitative Data Analysis*

The analytical approach is an integral aspect that plays an important role in any research approach either quantitative or qualitative. Data analysis greatly impacts on the meaning derived from the data as well as the conclusions drawn from the data. Basically, inferential statistics were used since conclusions were drawn from the data that are subject to random variations. This was followed by Miles & Huberman, (1994) approach of analysing qualitative data. They believe that, data analysis consists of three concurrent flows of activity; thus **Data reduction, data display and conclusion-drawing/verification.** This approach helped the researcher in categorizing the main issues into various headings which were later deliberated extensively. Issues such as the kind of local management measures that exist in these fishing villages and other management initiatives that can be instituted to promote more involvement of the locals in the decision process of accessing their own fishing grounds were discussed.

3.2.3.2 ***Data reduction:*** Data reductions, refers to the process of selecting, focusing, simplifying, abstracting, and transforming the raw data that appears in edited field notes (Mile and Huberman1994). Data reduction is not separate from analysis. It is a part of analysis that shapes, sorts, focuses, discards, and organizes data in such a way that final conclusions can be drawn. Using the *Anticipatory data reduction*, methodological guides such as the conceptual framework (ideas in the form of a graphical structure with arrows showing relationships), research questions (these explain the agenda and what I seek to achieve in the study), and sampling and instrumentations (Decisions about how data will be collected thus interviews, observation, document collection, field note-taking, tape recording) were particularly relevant in the data collection process.

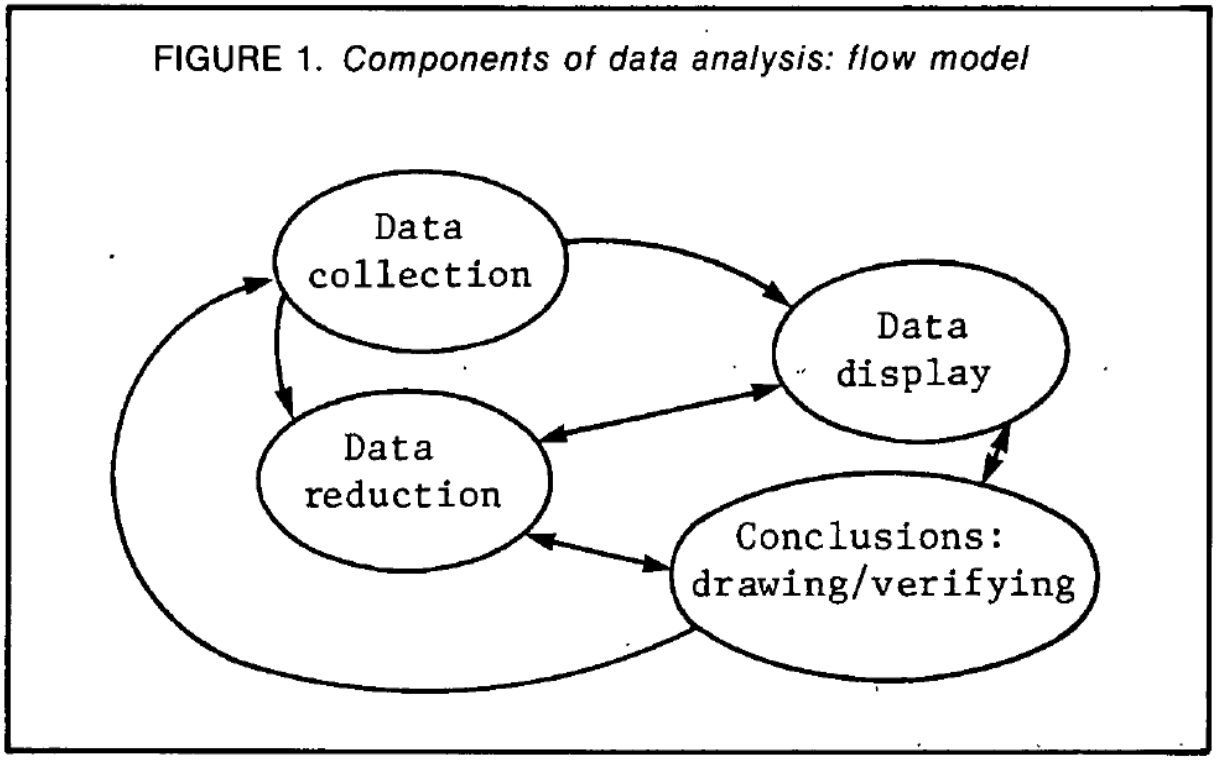


Figure 3.2: showing a flow chart of the three components of data analysis used in the study
Source: Miles & Huberman, (1994:12)

The structure of authority in the local communities and how this structure influence access to fishing grounds were described.

In order to arrive at explanations of social situations or processes, the researcher systematically reduced the complexity of the information generated in the qualitative data collection. Data complexity was reduced so as to find meaningful explanations through the linking of

conditions, effects, and mechanisms. This also assisted in the presentation of data in a form supportive of pattern recognition.

3.2.3.3 ***Data display****:* this is described as the second major flow in the activity of the data analysis. It is defined by Miles and Huberman (1994) as "an organized assembly of information that permits conclusion-drawing and action-taking". Data display generally proffers firsthand insights regarding the state of the analysis, and also indicates whether further analysis is warranted and necessary. Apart from using narrative text and quotations from respondents, descriptive and explanative figures (Miles & Huberman1994) were used to display the data.

3.2.3.4 ***Conclusion-drawing****:* this is an integral part of the data analysis activity. Right from the beginning of data collection and display, the researcher at this point begins to draw conclusion so as to decide what things mean, and to note regularities, patterns, explanations, possible configurations. Glaser (1992) states that "the competent researcher holds these conclusions lightly, maintaining openness and skepticism, but the conclusions are still there, inchoate and vague at first, then increasingly explicit and grounded". Since there will always be a flow of specific analysis tactics operating in, through and around the displays, particulars were subsumed into the general. Other conclusive approaches such as noting patterns or themes making, splitting variables were also invited, where necessary.

3.2.3.5 ***Conclusion verification:*** verification as a question in the field of research can never be avoided. It gives some kind of authenticity to the entire research process. This therefore makes the drawing of conclusions from any of the preceding tactics to be very evocative (Miles & Huberman1994) and was done based on the responses from the respondents.

Table 3.2: Showing the application of Miles & Huberman (1994) of data analysis.

Major principles	How and where applied in the study
1. The principle of data collection This principle indicates that; qualitative data usually appear in words rather than numbers. Data could be collected in a variety of ways such as interviews, observations, extracts from documents, tape recording etc.	This principle was applied in (Chapter 3) where interviews were carried out in the selected fishing communities. These interviews were tape recorded and later transcribed but they remain the exact words of respondents. They are no numbers but opinions of respondents. Example "*"We believe that, they are the most importunate issues affecting we the fishermen over here"* (quotation of a Chorkor Fisher)
2. The principle of Data reduction It indicates the need to reduce raw data from the field into workable strata	This was applied in (Chapter 5). For instance, data gathered on the different livelihood assets were reduced to five categories of capitals; Physical, Human, Social, Natural and Financial capitals.
3. Data display principle This principle talks about the use of explanatory figures for an easy understanding of data or issues discussed in the study.	This was also applied in (Chapter 4 and 5) where fish out-puts and sources of conflicts where displayed in tables and charts respectively. Example, tables 6, 7 and figure 14.
4. Conclusion/verification The principle of drawing conclusions/verifications indicates meanings that the research draws from the displayed data, and testing such meanings using the concepts and framework in the methodology.	This was applied in (Chapter 5 and 6) where the results were verified from the livelihood and institutional analysis frameworks. For instance, several instances of angry confrontation between local and migrant fishers were translated into, "sources of conflict." (Figure 8) and so on.

Source (own construction)

3.3 LIMITATIONS AND ETHICAL CONSIDERATIONS

Consent was sought from respondents/discussants before taking interviews however. The research process, however, posed a lot of difficulties to the researcher due to the woefully inadequate time frame for the data collection. Financial constraints also played a part since the study focused on just small percentage of the population by just considering two fishing villages and making generalizations. The general scarcity of information/documented data base on the two study areas hence I was unable to acquire enough reference materials to provide support for the project work. Albeit I presented an introductory letter which stated clearly the mission of the study, one fisherman noted '*you have been coming around every year asking us series of questions yet you don't assist us in any form'.* They apparently gave me socially desirable responses while others just hurriedly guided me to tick answers without listening to the interpretation. Some respondents also complained of not having enough time for me which might be biased. My inability to speak fluently in the local Ga dialect thereby using translators to a large extend might have influenced the results

However the above constraints were managed to make the study a successful one. I convinced the respondents that the study was purely an academic work in order to clear their doubts and possible expectations of interfering in the entire management process. Some of the interview questions were modified since some of the proposed respondents were not part of the chain process in the community. Finally I changed most of the time for my appointments to Tuesdays since this was considered a resting day for all the fishers. The research had to employ skilful means to squeeze the entire task through while marinating reasonable quality and reliability.

CHAPTER FOUR

THE FISHERY SECTOR IN GHANA

4.1 INTRODUCTION

The chapter gives an overview of the governance set up and the small scale fishery industry in Ghana as well as the profile of the study areas. It also outlines the immense contributions of small scale fisheries and how it serves as a source of livelihoods to coastal communities.

4.2 GEOGRAPHY AND POPULATION

4.2.1 Overview of the fisheries sector in Ghana.

The Ghanaian fishing industry dates backs several years even before the country attained independence in 1957. It was mainly practiced by the people living along of the coast. Ghana is located in the central part of the Eastern Central Atlantic, along the Gulf of Guinea, between Ivory Coast and Togo, and stretches from longitude 3º06'W to 1º10'E and between latitudes 4º30' and 11º6' (see Figure 4.1). The final results of the 2010 Population and Housing Census (PHC) showed that the total population of Ghana as at 26th September, 2010 was 24,658,823. The results indicated that Ghana's population increased by 30.4 percent over the 2000 population figure of 18,912,079. The recorded annual intercensal growth rate in 2010 was 2.5 percent as against 2.7 percent recorded in 2000 (GSS, 2010). Ghana lies in the tropical equatorial belt where average temperatures are between 25ºC and 35ºC and where climatic conditions change mainly due to the amount and distribution of rainfall. The country have two distinct wet seasons each year, a major one in May-June and a minor one in August-September (Mensah et al. 2006: 4). Ghana have about 310 beach landing sites interspersed with rocky shores, estuaries and lagoons with about 198 coastal fishing villages, as well as major ports where fish is landed (DoF 2003).

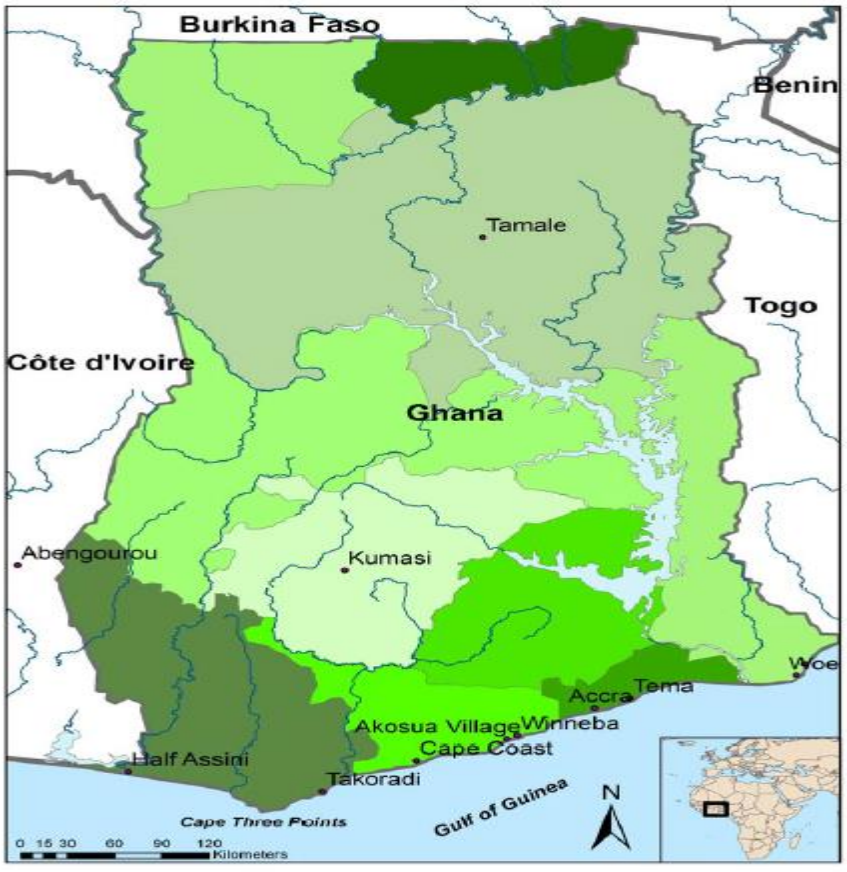
Table 4.1. Relevant characteristics of Ghana's coastal regions

Region	**Coastal Ethnic Groups**	**Coastline (km)**	**No. of fishermen**
Western	Nzema Ahanta	105 80	6,750 10,990
Central	Fante Awutu-Effutu	150 25	28,300 6,450
Greater Accra	Ga Dangbe	45 70	16,150 13,370
Volta	Anlo-Ewe	75	14,355

Source: Mensah et al. (2006:37)

The study is conducted in the greater Accra Region with one fishing village form each of the coastal ethnic groups.

Figure 1.1 Map of Ghana



Source: (Kraan 2009)

Figure 4.1: A map of Ghana showing the various coastal fishing towns

The country also have water bodies like Volta Lake which is one of the largest man-made lakes in the world. It extends from the Akosombo Dam in southeastern Ghana to the town of Yapei, 520 kilometers (325 mi.) to the north. There is also a smaller lake south of Akosombo extending some 25 miles to Akuse where there is a second smaller dam. The lake generates electricity, provides inland transportation and it is a potential source for irrigation and an important source of inland fish production.

Ghana abounds with water and around 10% of the entire land surface of the country is covered with water. Thus the potential for the fishing industry is immense. Marine fisheries in most parts of West Africa, even up to Angola, have been extensively influenced by Ghanaian fishing folk since the early 20th century. The increased fishing activity in the early 1900s caught the attention of the colonial Gold Coast[i] government in the 1930s when it commissioned surveys on the fishing industry culminating in the enactment of the first regulatory regime in 1946 with the Fisheries Ordinance Cap 165 (Fisheries Commission 2010). The need for effective management of the small scale fisheries became more prominent around 1970s leading to the establishment of the State Fishing Cooperation (SFC). However, concomitantly poor management of the state fishing corporation (SFC) contributed to its decline in the 1980s until it was divested by the state under the terms of the Economic Recovery Programme (ERP). The adoption of Exclusive Economic Zones (EEZs) by most coastal West African countries in the early 1980s was also problematic with most of these nations, specifically stopping Ghanaian boats from fishing in their waters. Despite these problems, the fishing industry generally grew over the period 1971-2009 with some foreign investment (Fisheries Commission 2010).

4.2.2 Fish Output

Fish output increased appreciably in the late 1960s, thus the marine fish caught between the year 1967-1972 increased from around 105,100 to 301,762 tonnes. In 1982, the yield composed of 199,100 tonnes of marine varieties and 35,000 tonnes of freshwater fish from Lake Volta. In the years 1988, 1991, 2001 and 2009 the fish catch was 302,900; 289,675; 352,722 and 317,446 tonnes respectively. The average fish catch in the year 2000-2010 was 326,000 tonnes. The general fish landing in the country is presented in figure 8 where it reached its peak in the mid 1990's. In the case of the country's fish stock; although poaching by foreign vessels was noted by Clark (1994) to have seriously depleted fish stocks in Ghana's 200 mile Exclusive Economic Zone, tuna stocks reportedly remained unaffected.

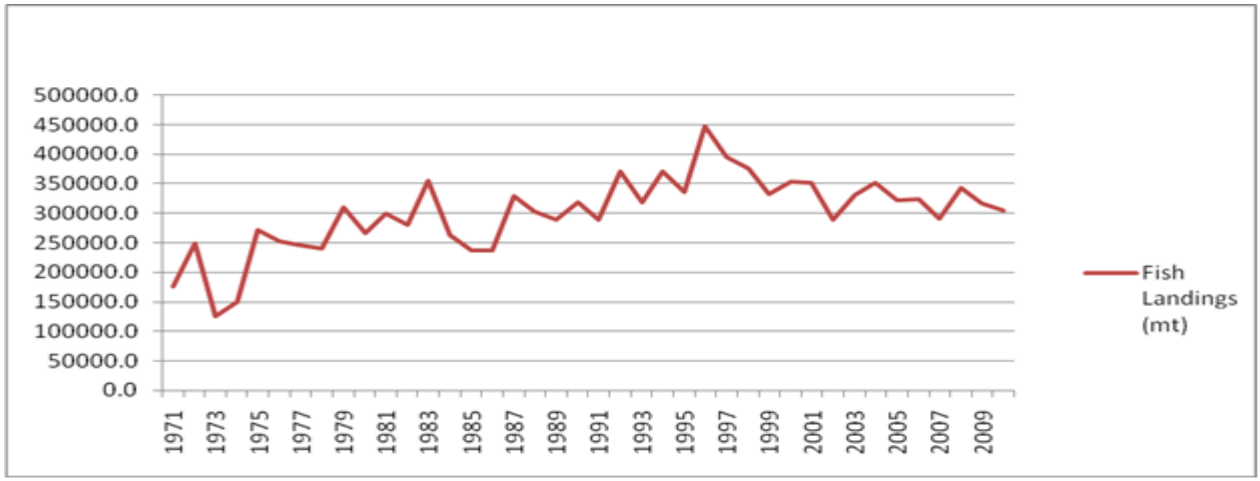


Figure 4.2: Fish Landings in Ghana 1971 – 2010 (tonnes)
Source: Data from Fisheries Commission

4.3 THE GOVERNING SYSTEM (GS)

4.3.1 Governance and Management setup in Ghana

Ghana is a multiparty constitutional democracy whereby the President is both head of state and head of government. The country experienced several military interventions after its independence in 1957 until 1992 when it was brought to constitutional democracy through the National Democratic Congress (NDC) under the leadership of Rawlings. However two main dominant political parties exist currently. It has 230-member Parliament who is elected for unlimited four-year terms. The main arms of Government are the Executive, Legislature and Judiciary each of which is independent of the other. Ghana is administratively subdivided into ten regions and 138 districts. The coastal regions are (from East to West) the Volta region, the Greater Accra Region, Central Region and Western region. These regions are subdivided into districts and these are in turn subdivided into areas. Regions are run by the Regional Coordinating Councils with the Presiding Member, Regional Minister and his deputies, two chiefs from the regional house of chiefs, and the regional heads of the decentralized ministries. The Districts are controlled by District Assemblies (DA) as prescribed in the Local Government Law of 1988 (PNDC Law 207), Chapter twenty of the 1992 Constitution and the Local Government Act of 1993 (Article 462) (Mensah et al. 2006: 47). The people in charge of the districts are the District Chief Executives (DCE) who are the main representatives of the Central Government in the district. The DA consists of the assemblymen of which two thirds are directly elected and one third appointed by the President in consultation with the chiefs and

interest groups in the district. The presiding member of the DA is chosen from the assembly members by a two-thirds majority (*Ibid.*). The DA has deliberative, legislative and executive powers and offers services to the communities via the decentralized departments at district level (such as the Ministry of Health, MOFA and Education). It may also have its own developmental programs organized via collected revenues (such as market tolls, basic tax and district border tax) (Mensah et al. 2006:48).

The coastal villages and towns are represented in the DA by their assemblymen. In Chorkor for instance, there is one assemblyman representing the Chorkor electoral area while Nungua have three each representing their respective electoral areas. These assemblymen also hold positions in the town council of the villages and towns. The town council is the lowest level governance organization of the decentralized Ghanaian state. Apart from the assemblymen and chair, the town council has chosen unit representatives (the earlier mentioned areas are subdivided in units), government appointees and extra representatives of the chief (as a link to the traditional governance structure) and of important economic groups (such as fishermen or farmers). Some members of the town council are chosen and others are appointed.

This governability framework used in Ghana is governed by the rule of law which is enshrined in its 1992 constitution. Most of the issues related to fisheries governance are all enshrined in this constitution.

Albeit fishing is still an important element of locally based economies for a large number of households across the developing world and has become an increasingly dynamic sector of the world industry, the need for government to formulate measures so as to protect and preserve these fisheries is very paramount for their sustainability.

Ghana became part of the UN Law of the Sea Convention and the FAO Compliance Law Agreement in 1993. The fisheries sector has over the years been regulated through fisheries Act 625 of 2002. The country has put in place a general legal fisheries governance framework. This framework encompasses institutions in the fishery sector and other management systems used in managing its entire fisheries sector.

4.3.2 The Legal framework

Fisheries management in Ghana has over the years been regulated by a number of laws and regulations. Parliament which is the legislative arm of government enact laws to govern the country. The management systems and regulations are reckoned by the Food and Agriculture Organizing FAO 2004 and 2012 reports. Table 4.2 shows the regulations and the years in which they were instituted.

Table 4.2: Showing the various fishery regulations and the year in which they were instituted

REGULATION	YEAR INSTITUTED
Fisheries Regulations LI364	1964
National Redemption Council Decree 87	1972
Fisheries (Amendment) Regulation	1977
AFRCD 30 of 1979 (Fisheries Regulations) and the accompanying regulation, Fisheries Regulation LI 1235	1979
Fisheries Regulation (LI 1294)	1984
PNDC Law 256	1991
Fisheries Commission Act 457	1993
The fisheries Act 625	2002

Source: FAO 2004

Major sections in the laws relate to the building and importation of motor fishing vessels; licensing of fishing craft; manning of motor fishing vessels; and MCS. The laws also address the prohibition of the use of explosives such as carbide and dynamite; gear restrictions; and prohibition of the landing of juvenile fish.

The current legislation governing the fisheries sector, Fisheries Act 625 of 2002, amends and consolidates existing laws on fisheries. It provides for regulation and management of the fisheries, the development of the fishing industry and the sustainable exploitation of the resources. It attempts to streamline legislation to respond directly to chronic and emerging issues and to conform to the national and international fishery resource development and management strategies.

Specifically, the act consolidates and strengthens the legislation establishing the Fisheries Commission to oversee the Fisheries Directorate, which becomes a secretariat with structures responsible for policy-making, administration and enforcement. Consistent with the current fisheries management and development strategies, the act provides:

- rules and regulations to control industrial, semi-industrial and artisanal fishing through registration and licensing;
- protection and promotion of artisanal and semi-industrial fisheries through extension services, technology transfer, exemptions, reserved areas for semi-industrial and artisanal fisheries, development of landing facilities, and cooperation among small-scale fish processors and marketers;
- establishment of fishing zones, closed seasons and fishing reserves;
- protection of gravid and juvenile lobsters and other crustacean, juvenile fish and marine mammals;
- protection of fisheries water from pollution;
- proactive MCS and enforcement through a special unit to work in collaboration with the Ghana Navy, Air Force, Ministry of Defense and Ministry of Justice for effective policing and prosecution of offenders;
- arrest, seizure, detention, fining, forfeitures and temporary bans for offending fishing vessels;
- promotion and licensing of aquaculture projects, ensuring that they conform to environmental laws and specified operational standards; and
- establishment of a fisheries development fund to help partially finance the execution of the fishery development and management strategy and enforce its rules and regulations.

It is worth noting at this point that, the main legislative instrument, Fisheries Act 2002 (Act 625), governing the fisheries sector and the sector ministry do not address how access to fishing grounds should be regulated. This therefore calls for the need to develop a new institutional structure that make it plausible to integrate the issue of access in the managing of Ghana's small scale fisheries.

4.3.3 Institutions in the Fishery Sector

Institutions are very crucial to the fishing industry and are an integral part of the Governing System, its structure and operation. When things do not work out as intended, and need

correction, institutions are what we invoke and are among the remedies we employ. Parsons regarded institutions as systems of norms that "regulate the relations of individuals to each other" and that define "what the relations of individuals ought to be (sited by Jentoft, 2004). In some cases, institutions may require that, members make some sacrifices even to the extent of risking their lives. Institutions can be classified into two main categories, thus formal and informal.

4.3.4 Formal Institutions

The Fishery Sector involves a variety of government and non-governmental institutions (NGOs). These are enumerated by FAO, 2004 as:

4.3.4.1 Executive organization

The ministry of fishery and Aquaculture of Ghana has a mission to promote sustainable and thriving fisheries enterprises through research, technology, development, extension and other support services to fishers, processors and traders and to fulfill its role in ensuring food security and poverty reduction (FAO, 2012). As far as fisheries are concerned the Directorate of Fisheries of the Ministry of Fisheries and Agriculture (MoFA) (at the national level) is the most important governmental organization. The legal framework is embodied in the Fisheries Law of 1991 (PNDCL 256) together with the Fisheries Commission Act 457 of 1993, and within the 2002 updated Fisheries Act (Act 625, 2002).

The objectives of the Ministry of Fisheries are:

- To prepare and keep under continual review plans for the management and development of Fisheries in waters under the Jurisdiction of Ghana.
- To ensure availability and adequate supply of fish from captured fisheries for the local and export markets.
- To provide technical support and facilitate financial assistance to fishers, fish processors and marketers.
- To facilitate effective and efficient inputs distribution system.
- To coordinate and collaborate with other Ministries, Departments and Agencies (MDAs) for the enforcement of Fisheries Laws, Regulations and Bye-Laws.
- To promote local, sub-regional and international co-operation in Fisheries Management and Development.

- To ensure that plans are built to improve on the Human Resources capacity of the Ministry to enhance service delivery.
- To ensure the availability of timely, reliable data and information on the fisheries sector.
- To co-ordinate and collaborate with MDAs and NGOs for poverty reduction production and value chain in the fishing industry.
- To achieve the above objections, the Ministry will continue to peruse policies aimed at:
    - Increasing Fish production consistent with the long term sustainability of the resources, for domestic consumption and for exports;
    - Reduce harvest losses and the adding values to end products of fisheries for increased income to users and for the generation of foreign exchange to the nation;
    - Intensifying Monitoring, Control and Surveillance (MCS) activities to ensure responsible fishing; and
    - Liaising with the Ministry of Trade, Industry, Private Sector Development and President's Special Initiative (PSI) to sensitize businessmen to invest in aquaculture as a business/industry.

The key functions of the Ministry of Fisheries are:

- Facilitate the formulation and implementation of appropriate policies in support of a sustainable fishing industry.
- Initiate, Coordinate, monitors and evaluate national programmes/projects in the fishing industry.
- Generate social economic data as basis for improving the Human capacity of the fishing industry.
- Ensure the implementation of Fisheries laws and regulation.
- Collaborate with HRMD in skill development of fisheries staff and Collaborate with sub-regional and International organization in the study and Management of shared fisheries resources.
- Play a facilitating role inputs acquisition and marketing of produce to fishers, fish farmers, fish processors and traders.
- Provide a technical support to fishermen, fish farmers, fish processors and traders on
- Improved fisheries practices, efficient utilization and management of fisheries resources. (FAO, 2007)

4.3.4.2 Fisheries Commission

Fisheries are regulated through Fisheries Act 625 of 2002. Through the Act, a Fisheries Commission has been established, which is mandated to manage the fisheries of Ghana. The objective of the Fisheries Commission is to regulate and manage the utilization of the fishery resources of Ghana and coordinate the policies in relation to them (FAO, 2012). It shall also ensure that fisheries resources are exploited on a sustainable basis, settle disputes and conflicts among operators, advise government on all matters related to fisheries, and advocate on issues to protect, promote and develop the fishing industry (FAO, 2004). The Minister of Fisheries has ministerial responsibility over the Fisheries Commission. Table 4.3 shows the various organizations represented in the Fisheries Commission and their respective functions.

Table 4.3: Showing organizations in the Fisheries commission and their respective functions.

Organization	**Functions**
Ministry of Local Government, Rural Development and Environment (MLGRD)	• In consultation with the Minister, control and co-ordinate the importation of fresh and frozen fish. • In collaboration with District Assemblies with fishing communities; ensure the enforcement of the fishery laws including by-laws made by the relevant District Assemblies (Act 625 of the Parliament of the Republic of Ghana, Fisheries Act, 2002).
Ministry of Defense	• Collaborate with the Ghana Marine Fishing Officers to ensure the monitoring, control and surveillance of fishery waters.
Water Research Institute	• Collaborate with the Marine fishery Research Institute to carry out research and survey work for the

	assessment of stock of fishery resources.
Ghana Marine Fishing Officers Association	• Collaborate with the Ministry of Defense to ensure the Monitoring, Control and surveillance (MCS) activities within the waters of the country.
Ministry of Transportation	• Ensure effective transportation of fish resources more in and outside the country.
Ghana Irrigation Development Authority	• Prepare and keep under continual review plans for the management and development of fisheries in waters under the jurisdiction of Ghana. • Ensure the proper conservation of the fishery resources through the prevention of overfishing.
National Fisheries Association of Ghana (NAFAG)	• Make recommendations to the Minister on granting of licenses for fishing. • Promote develop and protect the fishing industry in Ghana and in particular, protect the interest of its members. • Collect and distribute statistics and information of any kind which affect or could affect members of the association.

Source: FAO, 2004

4.3.4.3 *Department/Directorate of Fisheries*

The Department of Fisheries (DoF) works as the implementation secretariat of the Fisheries Commission, as stipulated by the Fisheries Act 625 of 2002. It is divided into five divisions: Marine Fisheries Division, Inland Fisheries Division, Marine Fisheries Research Division, Monitoring, Control and Surveillance Division, Finance and Administration Division. It fulfills this role by preparing fishery resource management plans, developing regulations for the fishing industry, organizing MCS for the national fishery resources and ensuring compliance with national fisheries law and Institutionalizing co-management concepts (FAO 2004).

The Department of Fisheries performs these functions through several mechanisms, including sea patrols, observer programmes, port and landing inspection, licensing, vessel registration, formation and enhancement of Community-Based Fisheries Management Committees (CBFMCs), statistics gathering and analysis and consensus building. The MCS division of the DOF was established under the Fisheries Subsector Capacity Building Project (FSCBP). The mandate of the Division is to enforce the Fisheries Laws.

The MCS Division, with the collaboration of the Ghana Navy, undertakes sea patrols to exclude industrial fishing vessels from the 30 meters Inshore Exclusion Zone (IEZ), reserved for artisanal fisheries. The Division also handles out quayside inspection of industrial vessels at the fishing ports of Tema and Takoradi, checking for valid fishing licenses, legality of fishing gear, skipper's certificate, log book and crew composition, and effects similar supervision of the Lake Volta fisheries.

4.3.4.4 *The District Assemblies*

As enumerated in FAO (2004) country report, the District Assembly is Operating under PNDC Law 327 of 1993, the Ministry of local Government and Rural Development (MLGRD) is the key institution with responsibility for facilitating the establishment and development of a vibrant and well-resourced decentralized system of local government. MLGRD is responsible for managing fishers, fish processors and fishery resources at district and sub-district levels. Recently, the District Assemblies in collaboration with DOF, have been mandated to facilitate fishery resource management by helping in forming and sustaining CBFMCs, cooperating with the DoF and the MCS units to provide legal and financial support to the CBFMCs and approving levies proposed by the CBFMCs. However these roles are inadequately carried out.

4.3.4.5 *Other institutions*

Other institutions that contribute to the management of fisheries resources in Ghana include, the Volta River Authority, NGOs, such as Friends of the Earth and the Adventist Development and Relief Agency, Private commercial entities, such as the Agricultural Development Bank, Rural Banks, and Continental Christian Trader (a dealer in fishing nets) and Fisher associations, such as the National Inland Canoe Fishermen's Council (NICFC), Ghana National Canoe Fishermen's Council (GNCFC), Ghana National Association of Farmers and Fishermen, and Ghana Co-operative Fisheries Association.

4.3.5 Informal Institutions

4.3.5.1 Community-Based Fisheries Management Committees

At the community level, there is the Community Based fishery Management Committee (CBFMC). This committee is chaired by the chief fisherman who is elected by the fishers (Kraan 2009). His duty is to foresee the sustainability of the fishery by ensuring that the rules and regulations governing the fishery are properly followed. He does this in consultation with other village chiefs and boat owners. The chief's court is the highest judiciary body in the village and deals with the settlement of disputes between local fishers and migrants if they cannot be solved at lower levels (Overå 2001:14).

The principal responsibility of the CBFMCs is to enforce national fisheries laws at community level, as well as to enact and enforce their own by-laws to the same end. During CBFMCs meetings, different opinions from representatives of these communities regarding the management of the fishery are relayed to the ministry of fisheries through the local government to the district assemblies.

The ministry of fisheries over the years tried to pursue a partnership of co-management in other to increase local involvement in resource use decision-making so as to engender ownership among stakeholders and commitment in implementing regulatory mechanisms, however, this has never been successfully.

4.4.5.2 *The Chief Fisherman*

The institution of the chief fisherman is very important in Ghanaian fisheries. According to Von Benda, having the authority to alienate, exclude and manage and exploit property is 'one of the most salient elements of power through which people can be subordinated at all levels of socio-political organization' (Von Benda Beckman 1995: 318), sited in Kraan (2009). The role of the chief fisherman is very prominent in these two coastal communities.

The chief fisherman is one of the sub-chiefs of the village chief. He chairs the fisheries committee which advises the chief on fisheries matters. All fisheries matters are first handled by the chief fisherman. He fulfils a liaising role between the fishermen and higher level organizations. In those coastal villages where fishermen have been fishing for centuries (mostly in Fante and Effutu coastal communities) a chief fisherman assisted the chief with the settling of all fisheries matters. In these communities his role is a hereditary function. However, Overa (2001), states that, the person is elected by the fishermen and must be an exceptionally experienced, wise and respected fisherman' (Overå 2001: 15). The chief fisherman works with a council of elders and they settle disputes between fishermen, processors and fish traders. He coordinates rescue operations in the event of accidents at sea (Bannerman 1998) and collects revenue from fines of fishermen breaking rules and receives token fees of fisher migrants who come to fish on his beach.

A typical governance structure focusing on fisheries governance in the Ghanaian setting has been documented by Kraan (2009). This sketch gives a detail explanation on how the government structure in Ghana functions even at the village level. In figure 4.3, there are shaded and non-shaded elements; round forms, triangular shapes and square blocks. The shaded figures are traditional or hybrid (a mixture of Government of Ghana and traditional) organizations and the non-shaded figures are organizations related to the Government of Ghana (GoG). These does not include the triangular shapes which represent non-governmental organizations (NGOs). The round figures in the structure represent social roles, thus; agencies comprising an individual such as the chief fisherman while the square blocks epitomize organizations such as councils, departments and ministries. Kraan also made used of different colours which shows the levels at which the various organization operates and also, the darker the colour, the higher the level. She depicts seven different levels. The first is the sub-village level (the chief fisherman, CBFMC, Net owners, fishermen and fish processors. The second describe the village level (Town council, chief's court and the traditional council). The district

level which is the third encapsulates the Traditional council of the traditional state while the fourth depicts the DAs and MOFA offices at the district level. The fifth describe the regional level where we have the Regional House of chiefs, the Regional government and MOFA regional offices in each of the ten regions. The national level talks about the National House of chiefs, the National government and the various fisheries related ministries while the international level on the other hand shows the country's links with the international world where it shares a couple of agreement with.

Arrows and lines are used to show the main connections and lines of contact. There are three levels of thickness used for the arrows in the scheme. The thickest grey arrow is used to show a cluster of connections between levels. The black arrow is used when organizations at different levels can be connected directly. The thin dashed arrows are used to show relevant horizontal connections. The thin lines are used to connect a certain organization or role to another, and the thin arrows are used to connect an organization or role to a relevant other organization or role.

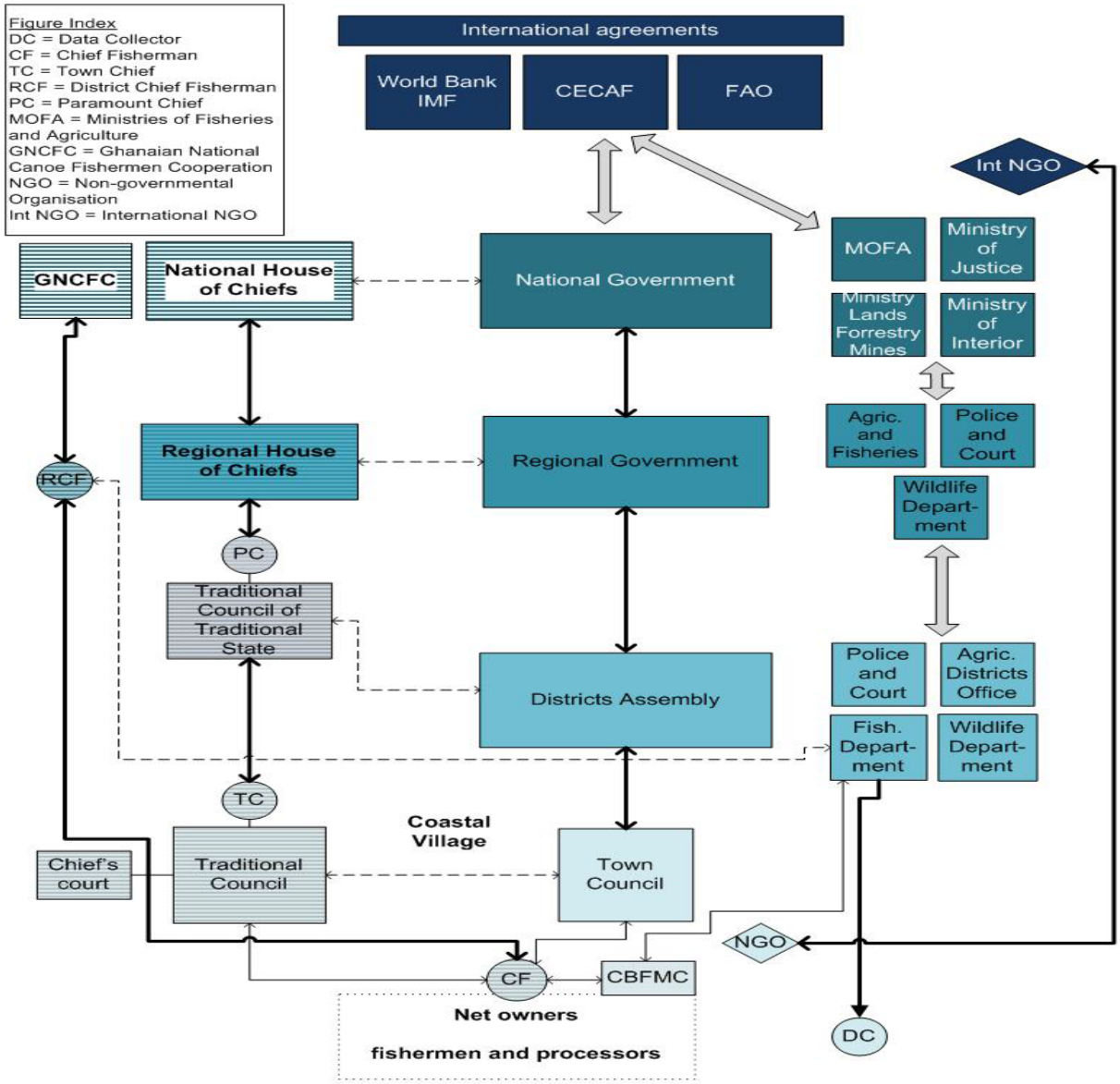


Figure 4.3: showing a sketch of the Ghanaian fisheries governance structure.
Source: Kraan, (2009)

In summary, although each of these formal and informal institutions and organizations clearly states a connection between them, the reality on the ground seems to be different. The link between the traditional arm and the formal government arm is missing. Most of the policies regarding access are determined at the top and passed to the traditional arm. However, the traditional arm seems to be closer to both the local and migrant fishermen and yet they wait for orders from above. This makes management a bit cumbersome since the rural folks are not actively involved in such decision making process (Percy Oware, 2012). At the coastal village level, the local and the traditional government through the chiefs and the chief fisherman should

be given the absolute power to determine the access to fishing grounds with little influence from the top since they are directly involved in such activities.

4.4 THE SYSTEMS TO-BE-GOVERNED (GS)

The system to-be-governed include the Natural and Social systems in the marine fishery subsector (the different fish species and the social actors). The natural system in this component describes the mixed fish species in the fishery. According to Addo & Marshal (2000), the major species are sardinella, tuna, shrimps, lobsters and cuttlefish. In 2000, tuna accounted for 40,710 tonnes of the 53,060 tonnes of exported fish in total (Mensah et al.2006: 10). These provide the main protein in the diet of most coastal communities especially among the Ga and Dangbe. The Social system on the other hand is composed of stakeholder groups in terms of their demographic profile, their organization, vested interests, property and access rights, and political orientation. In the Social System, the fishery encounters three main active stakeholders thus: the commercial fishers, the small scale fishers and the migrant fishers. The other passive stakeholders such as Boat owners, Net owners, Canoe carvers, Fish processors (fish mongers), and Premix fuel sellers provide these major ones with the necessary items to fish. Although the issue of migrant fishers has been a recent development, it has become so important due to the decline in catches as well as the belief that fishes migrate hence the need to keep moving from one coastal village to the other.

4.4.1 Ghana's Marine fishery subsector

The contemporary Ghanaian fishing sector consists of marine fisheries, inland fisheries and aquaculture. However, Amador et al., 2006 classified the sector in to four main categories namely artisanal (canoe), semi-industrial (inshore), industrial, and tuna fishery.

4.4.2 Fleet Structure

The marine and inland fisheries have had a wide variety of vessels and every four years or so the Fisheries Commission performs a census of the fleet structure. As indicated in Table 4.4, operational fishing vessels in 2000 were dominated by canoes (97%) and around 58% were motorized canoes. Whereas industrial fishers and tuna vessels together made up about 0.9% of

the total number of operational boats (11,542). Across the period 1996-2009, semi-industrial motor boats showed the most variation compared to other boats.

Table 4.4 Shares of operational fishing vessels in Ghana (% Share of Fleet)

Vessel Type	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Inshore	1.88	1.74	1.49	2.26	2.19	2.08	2.20	2.00	2.08	1.96
Industrial	0.52	0.44	0.46	0.46	0.48	0.42	0.57	0.53	0.50	0.53
Shrimpers	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00
Tuna vessels	0.38	0.32	0.35	0.36	0.32	0.23	0.28	0.29	0.29	0.29
Tuna carriers	0.03	0.04	0.05	0.00	0.02	0.02	0.02	0.02	0.02	0.02
Canoes	97.15	97.43	97.63	96.90	96.97	97.24	96.92	97.16	97.12	97.20
Motorized Canoes	57.98	51.31	51.41	51.03	55.36	55.52	55.33	55.47	55.44	55.49

Source: Fisheries Commission

Ghana's fish catch based on the different vessel types is presented in table 4.5, where traditional canoes scored the highest fish catch followed by industrial boats, which concentrate on tuna capture, and semi-industrial vessels.

Table 4.5: Fish catch according to vessel type (tonnes)

	2000	2002	2004	2005	2006	2007	2008	2009	2010
Canoe		200769	267909	218871	231680	187088	254133	226755	198152
Purse seine	7216	4974	5487	6718	8382	8787	5244	10843	8529
Semi-industrial Trawlers	1451	2810	843	872	1494	1220	895	1204	1293
Industrial vessels(Ghana waters)	15454	13899	14010	12494	17419	19892	18289	20836	18859
Tuna vessels	53255	66046	62741	82225	63252	72355	64093	66470	77875

Source: Fisheries Commission of Ghana

4.4.2.1 *Semi-industrial:*

This was introduced as a means to develop the Ghanaian fishing sector. It came along with the introduction of the outboard motors. The fleet consists of approximately 230 locally built wooden vessels fitted with inboard engines of up to 400 hp and have lengths ranging between

8 and 37 m. Vessels with lengths less than 12 m are referred to as small-sized while those between 12 and 22 m are referred to as medium sized vessels. The main gears used in the semi-industrial fleet are the purse-seine and bottom trawlers due to the multipurpose nature of the vessels. By dint of benefit of the gears they use, this fleet targets both pelagic and demersal fishes. The small-sized trawlers target grey triggerfish (*Balistes capriscus*), while the others exploit sea breams (mainly *Pagellus bellottii*, *Pagrus caeruleostictus* and *Dentex canariensis*), snappers (*Lutjanus fulgens* and *L. goreensis*), red mullet (*Pseudupeneus prayensis),* cassava fish (*Pseudotolithus senegalensis*), burrito (*Brachydeuterus auritus*) and groupers (*Epinephelus aeneus*) (FAO, 2010). The vessels use ice for preserving fish at sea and a fishing trip usually varied between 3 and 5 days. The semi-industrial or inshore sector operates from Tema, Winneba, Apam, Mumford, Elmina, Sekondi, Takoradi and Axim – places with harbour or semi-harbour facilities (Koranteng, 2000)

The number of inshore vessels for the period of 2000-2009 is presented in table 4.6, where the number of inshore vessels increased from 236 to 268 in the ten year time.

Table 4.6: Semi-Industrial or Inshore Vessel Numbers

	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Inshore vessels	236	244	231	283	316	293	267	259	267	268
Operational vessels	167	178	152	233	253	240	255	231	240	226

Source: Fisheries Commission of Ghana

4.4.2.2 Industrial sector

The industrial fleet is currently made up of 48 trawlers, 7 pair trawlers, 2 shrimpers, 26 tuna bait boats and 10 tuna purse seiners. They use big trawlers which operate from Tema and Takoradi where there are deep water ports. Trawlers are normally over 35 m in length and have engines of over 600 hp, while the shrimpers are up to 30 m in length with engines of over 350 hp. Originally, the trawlers fished off the west and south-west coast of Africa particularly in the area from Sierra Leone to Mauritania and also in the Angola to Namibia area (Mensah et al, 2006). However, these vessels in recent times have been forced out of these waters by the enforcement of the 200 nautical mile EEZ Law by these countries. The trawlers and shrimpers exploit demersal and semi-pelagic species such as cuttlefish, sea breams, groupers, snappers, soles and cassava fish for export. As deep-sea vessels, these trawlers are required by law are

to operate in waters deeper than 30 m depth (Fisheries Act 625 2002). The industrial fleet like the semi-industrial have freezing facilities for preserving fish at sea and can stay for months at sea. It is reported by FAO (2012) that, the industrial fleet has undergone a radical expansion in numbers since 1984 when the policy of the Government of Ghana targeted industrial fishing as a mechanism for promoting non-traditional exports.

4.4.2.3 The Tuna Fishery

The tuna fishing vessels catch mainly yellowfin tuna (*Thunnus albacares*), skipjack tuna (*Katsuwonus pelamis*) and bigeye tuna (*Thunnus obesus*). They used different forms of gears such as pole and lines. Finegold et al. (2010), documents that, before 1973, the Tuna fishery was operated mainly by foreign fleets, but now, they are operated on joint venture basis, with Ghanaian owners having at least 50 percent of the shares, as required by the Fisheries Act 625 of 2002 (FAO, 2004). Most of the tuna are exported with a little for the local market.

4.4.2.4 Artisanal Sector

The Artisanal sector can be described as the most diverse sector in terms of the gear and vessel used. The main fishing craft used is the dugout canoe carved out of a single trunk of wood, symmetrical in shape, double ended and ranging in size from 3 to 18 meters in length and 0.5-1.8 meters in width (Ferrais 1997: 449). The gear used by the artisanal fishermen can be classified into five groups: purse seine nets (39.8 percent), drifting gill nets (2.9 percent), set nets (29.7 percent), hook and lines (11.9 percent) and beach seines (8.9 percent) (Ferrais 1997: 450). Besides these, fishermen also use cast nets and traps (Mensah et al. 2006: 17). The various different artisanal gears target different resources: the artisanal purse seines and beach seines are exploiting mainly small pelagic. Purse seines are used to exploit adult sardinellas and chub mackerel during the upwelling periods, when these species move into coastal waters to spawn.

During the non-upwelling periods, anchovies and juvenile sardinellas in coastal waters are targeted with this gear. Beach seines are operated from the beach and exploit adult sardinellas, during the upwelling periods and anchovies and juvenile sardinellas during the non-upwelling periods. The sector is officially allocated an exclusive zone for fishing up to the 30 meter-depth-line from the coast, within which the semi-industrial sector cannot come (Bortei-Doku 2002: 334).

Table 4.7: A comparison between artisanal, industrial and semi industrial fisheries (Ghana Fisheries Commission (MFRD 2004: 9)

fleet	2003	2004	2005
canoes			13,000
inshore vessels	172	151	348
industrial trawlers	54	67	75
shrimpers	6	4	5
tuna	36	35	36

Source (Ghana Fisheries Commission 2004)

The artisanal sector accounts for about 90 percent of total landings of the small pelagic resources. It is the most important sub-sector in marine fisheries, contributing 60-70 percent of the marine fish output (Mensah et al. 2006). From table 4.7, in 2005, there were approximately 13.000 canoes. The artisanal landing sites are further estimated to have accounted for 200,769 MT of fish, equivalent to 69% of total marine fish output in 2002 (FAO, 2004). The people involved in this sector are mainly the local inhabitants and migrant fishermen from neighbouring regions and countries.

4.5 LOCAL AND MIGRANT FISHERS

Migration is a major characteristic of artisanal fisheries in Ghana as well as in other West African countries such as Senegal, Liberia, Benin and Nigeria. It is a major part of the social system to be governed. It has been the subject of increased interest on the part of researchers. Ghanaian migrations have been recorded from the beginning of the 20th century (Chauveau 1991). It has been explained as a livelihood strategy and in some cases as a result of vulnerability and also as an outcome of the negotiation for livelihood space of the both the Chorkor and Nungua fishers of Greater Accra.

Migration became necessary due two main reasons: the movement of fish species due to upwelling and declining catches. As has been emphasized by Bortei-Doku (2002: 331), the high mobility of fishermen in the sub-region is as a result that marine resources are shared between countries and this thus has implications for fisheries governance. Migrants fishers in most case are never refused fishing however, they are made to pay a small token in the form of a fee to fish on waters that does not belong to them.

Migration is shown to have a strong influence on the diversity of actors in the small scale fishing industry. It results in a kind of collective action based on ethnicity which has implications in the allocation of access to fishing grounds. Migration also have the ability to influence government systems (Kraan 2009)

The Ghanaian migrant fishers have immensely influenced the artisanal sector in West African by introducing their technology to other West African countries. Migration has also been seen as a livelihood strategy linked to fishing among the coastal villages and this has been in the form of livelihood space; where they work (fish, live safely and use the facilities), another is space within the fishing sector and space where fishers are accepted (Kraan, 2009).

Picture 4.1: Showing a canoe leaving for migration to Ivory Coast. Source: Kraan (2008)

4.6 SMALL-SCALE FISHERIES AS A SOURCE OF LIVELIHOOD TO COASTAL COMMUNITIES

As defined by Allison & Ellis (2001: 379), livelihood, is 'the activities, the assets and the access to these assets mediated by institutions, organizations, and social relations (policy and

institutional context) and affected by external factors (trends and shocks), that together determine the living gained by the individual or household with effects on livelihood security and environmental sustainability'. In view of their definition, it can be deduced that, Access to both assets and activities, is enabled by the policy and institutional context and affected by external factors (vulnerability context). By their approach, a livelihood, is made of up three main components thus: the activities that people engage themselves in in order to make a living, the various risks they undertake in making those decisions (vulnerability context) and the governance structures or institutions that either enhance or hinder their access to resources and other activities (policy and institutional context).

Small-scale fishing or artisanal fishing ranges from sedentary to migrant fishers or communities, from part-time to full-time fishing activity, from subsistence to commercial fishing, from non-advanced and non-differentiated to highly differentiated and specialized form of fishing. The FAO (2003) country report is of the view that the activities of the small-scale fishing communities are often aimed at supplying fish and fishing products to local and domestic markets and also for household consumption. The small-scale fishing sector in both Chorkor and Nungua, provide both direct and indirect employment to most of its inhabitants. According to the MOFA (2010) annual report, Ghana's local fishing industry employs between 1.5 to 2million people a year. This is one industry employing about 8% of the population. It is an industry that is not to be taken lightly not only because it creates employment for a good chunk of the populist but also because it contributes to food supply and food security for the rest of the people. Besides it also contribute positively towards economic growth and poverty alleviation.

4.7 BACKGROUND INFORMATION OF STUDY AREAS

The study is conducted in two fishing communities of the Greater Accra Region of Ghana. The reason for the choice of these two communities is the fact that they are fishing communities who in recent times have directly been affected by issues regarding their livelihood strategies and involvement in taking decision on the management of their fisheries. This to a large extent, breeds conflicts between the governing system and the system to be governed among fishers theselves. Chorkor and Nungua are two long established centres of artisanal fisheries dating back to the 18th century (AMA 2010). The artisanal fishing communities represent a traditionally and culturally imbedded way of life. The main economic activity in these two

communities is fishing; however the inability to regulate the different users of the resource promulgates conflicts between the local and migrant fishermen on one hand and the central government on the other. This to a large extent has necessitated this study in order to unearth the main challenges behind access to the main fishing grounds of such communities. Fishing activity are usually done my men, the women on the other hand engage themselves in fish mongering whereby they buy the fish from the fishermen, smoke them and later sell to the market women. This is a common practice especially in Chorkor. It has been contended by Boohene & Peprah (2011) that, although it is not a taboo for women to fish, it is hardly uncommon to see such cases in these communities.

Chorkor and Nungua artisanal fishers live in communities that are well organized according to certain structures. Each coastal town is headed by a chief who is also the head of the traditional council. There is also a town council headed by a chairperson, participated by assemblymen who represent the village at the higher level district's assembly.

With this structured and well organized management system, one would have expected a good communication link between the government of Ghana and the traditional government(s) but in reality, the local fishers through their traditional government have over the years, expressed non-involvement in taking decision pertaining to access on their fishing grounds. My research was performed at the local level within the two coastal towns where a lot of governing takes place through the local governments, which are connected to traditional government.

4.7.1 Profile/ Socio-economic demography of Chorkor

Chorkor is a fishing village and a neighbourhood in the Accra Metropolitan Assembly, a district in the Greater Accra Region of Ghana. The '*Chorkor oven'* got its name from here. Chorkor is a densely populated community. Ga-Dangme is the largest ethnic group in Chorkor, followed by Akan. Accra which is the capital of the greater Accra Region is one of the fastest growing cities in Africa with an annual growth rate of 4.3% (GSS 2010). It is estimated to accommodate about 4.3 million people including daily influx population of 1 million who commute to the city for various socio-economic activities.

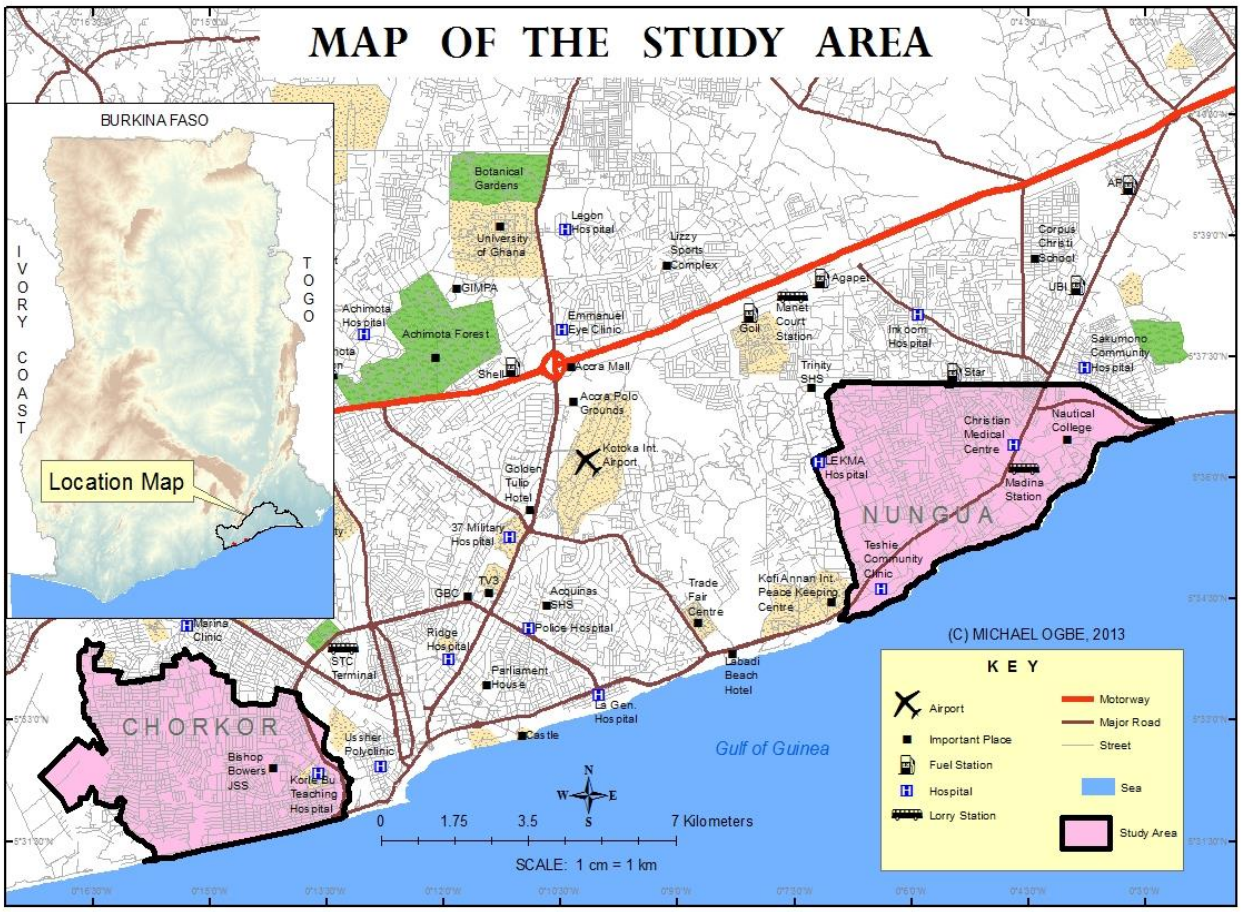


Figure 4.4: Showing a map of the study areas.

The Accra metropolitan assembly with its capital as Accra has a land area of about 173sq and is bordered to the north by Ga West Municipal Assembly, to the south by the Gulf of Guinea, East and West by the Ledzokuku –Krowor and Ga South municipal assemblies respectively. There are several ethnic groups in Accra but the indigenous residents are the Ga Adangbe's who are believed were mainly fishermen and have first settled in James Town (AMA 2012, 2010). AMA's unemployment rate is around 12.2% and poverty is on the increase. Whereas national poverty decreased from 39.5% in 1998/99 to 28.5% in 2005/6, that of AMA increased from 4.4%to 10.6% within the same period. Artisanal fishing especially along the coast of Accra has over the years served as a major source of employment to the people of Chorkor, and its environs.

Chorkor Electoral Area is located in the Ablekuma-south constituency which is part of the Accra Metropolis. Chorkor shares borders with Korlebu Electoral Area to the north, Korle Gonno Electoral Area and Mamprobi Electoral Area to the East and West respectively.

4.7.2 Profile/ Socio-economic demography of Nungua

Nungua which is the second study area is located in the Krowor Constituency of the Ledzokuku-Krowor Municipal Assembly (LEKMA). The LEKMA which has its capital as Nungua forms part of the sixteen (16) municipalities and districts in the Greater Accra Region. It is a relatively new district as compared to Chorkor. It was established on 1st November, 2007 and inaugurated on 29th February, 2008 under the Legislative Instrument (LI 1865) out of the merger of Teshie and Nungua sub-metros (LEKMA, 2010). The Municipality shares boundaries with La Dade-Kotopon Municipal to the west, Tema Metropolitan to the east, to the north with Ashaiman municipal and to the South with the Gulf of Guinea.

According to the 2010 population and housing census, the district has a population of 227,932 inhabitants. Out of this number, 109,108 (47.9%) and 118,747(52.1%) are males and females respectively. The core mission of the Municipality is to 'To improve livelihoods and provide adequate socioeconomic infrastructure in an equitable and sustainable manner for the people of the Municipality through effective stakeholder collaboration within a secure, decentralized system of governance and sound environmental management' (LEKMA 2010). It is in line with this that, the assembly at the beginning of 2014 registered and embossed 121 canoes operating within the Ledzokuku-Krowor Municipality to enable the Assembly to have a database of the fishing sector in order to initiate better solutions to problems confronting fishermen in the area. These measures are geared towards creating an enabling environment for addressing issues affecting the sector as well as helping to reduce problems hindering the conveyance of premix fuel to the area.

Due to the closeness of the District to the Atlantic Ocean with a coastline stretching over 37 kilometers, the District therefore has a vast expanse of fish potential. Most of the residents are engaged in marine fishing along the coast- line. Fishing as one of the major economic activities in the district has led to the concentration of small-scale fish related industries especially smoking of fish in and around the whole Nungua area.

In summary, these two fishing communities are managed by the government through the district assemblies under the decentralization programme.

http://www.ghanadistricts.com/news/?read=52091 accessed on 15th April 2014

Although fishers under this form of management system are supposed to be consulted by the government before regulations regarding access to fishing grounds are implemented and enforced, fishers still see themselves as passive participants instead of active involvement. Due to the already established and recognized traditional structures/institutions in the traditional government, it stance a better chance of managing the fisheries of its own people. They could be given the mandate to design, implement and enforce laws and regulations with advice from the formal government thereby installing a sense of ownership over the resource which makes the community more responsible for long-term sustainability of resources (Robert& Meryl, 1994).

CHAPTER FIVE

RESEARCH FINDINGS AND DISCUSSIONS

5.1 INTRODUCTION

This chapter of the thesis presents the research findings and interpretation of data collected using semi-structured interviews, observations, photographs and document analysis. As mentioned previously, data was collected from boat and net owners, chief fishermen, local fishermen, migrant fishermen, assemblymen and some fish mongers. The analysis with its interpretations of data was done based on the responses from these respondents.

5.1.1 Overview of research findings and Interpretations

The Research findings were based on the livelihood Access Framework indicated in figure 5.1.

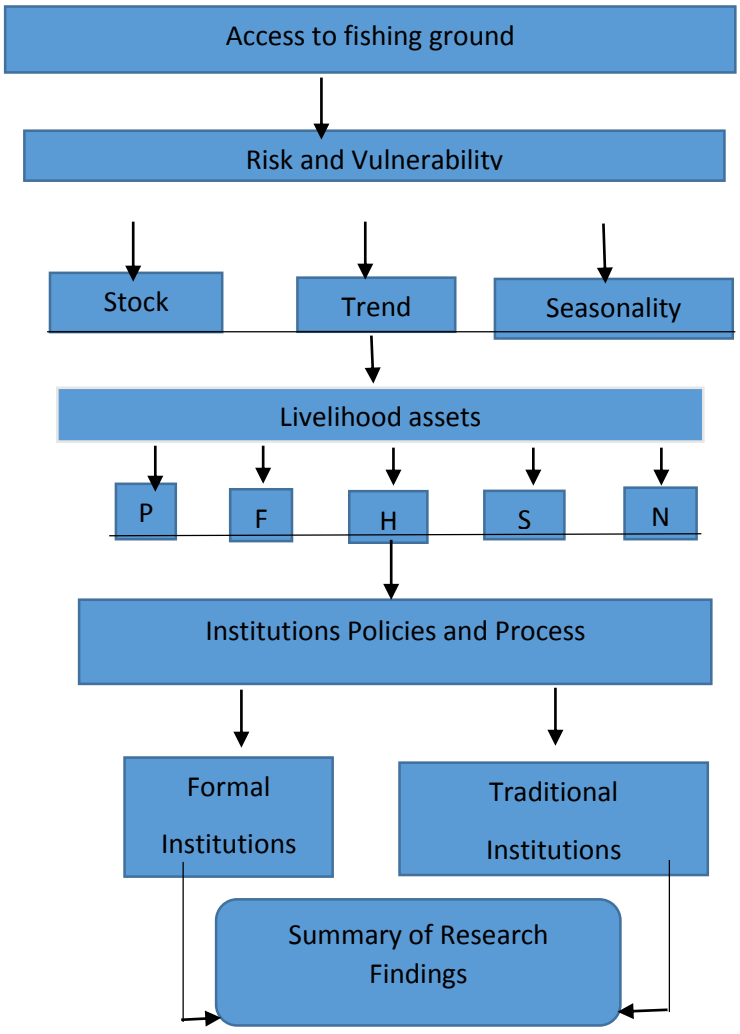


Figure 5.1: Showing the Livelihood Access framework adopted for data analysis

Emphasis were placed on the *risks and vulnerability* of the fisher folks, their *livelihood assets*, the *policies, institutions and organizational processes* (both the formal and informal government structure of the Ghanaian fisheries management system) that either enable or hinder the ability of fishermen to transform their livelihood assets to livelihood outcomes and the *livelihood strategies* opened to the rural fisherman in order to achieve a livelihood outcome.

Using the livelihood Approach, the findings were presented in three sections. The first section of the interviews was focused on the vulnerability of the fishers in both Chorkor and Nungua communities in terms of the daily challenges they encounter in the fishery industry. The idea was to enable the researcher to assess the constraints (shock, trends and seasonality) that makes them vulnerable in attaining livelihood assets.

The second section was to address the livelihood assets of the two communities and how fishermen are able to acquire access to these assets. Access is a key issue for sustainable livelihoods, due to this, finding out who have access and who do not, is very essential. It was also to demonstrate the many difficulties people face in gaining access to household and community assets and how this constrains their adaptive strategies to cope with the declining fish catches. In other words, not only possession, but mobilization of household and community assets is a critical factor influencing people's access to fishing grounds.

The third section addresses the institutions, policies and process that influence the access to livelihood assets of the fishing communities. Who are the participants in decision making regarding access and to what extent do the local people participate in decision making regarding their access to assets (Fishing grounds and other livelihood assets)? In this perspective, Traditional authority or actors (traditional chiefs and chief fishermen) are the potential driving force for improving access to fishing grounds, but they are often constrained by politics from the formal government structure. It discusses the fisheries management setup that regulates access to fishing grounds as well as explores the power relations in the local fisheries.

The fourth sections also addresses some of the livelihood strategies such as migrations and livelihood diversifications adopted by individuals and household as a form of Short- and long-term measures to ensure survival. These have been distinguished by Ellis (1998) as ‘coping’ and ‘adaptive’, strategies respectively and since the fisheries are without migrants, section four was dedicated to migrant fishing. The aim was to discover how migrant fishers acquire permission to stay and access fishing grounds belonging to local communities. Their position

in local settlements as well as the meaning /importance for the sending settlements were discussed.

5.1.2 Vulnerability context of selected communities

In order to identify and gain a better understanding of the vulnerability of the rural fishermen, some selected key informants such as fishermen and their households, the chief fisherman and the traditional chiefs of both Chorkor and Nungua fishing villages were interviewed. Apart from these interviews, I was fortunate to be part of some of their community meetings where I obtained an overview of their strengths, constraints, institutions and widely held priorities for action. The questions spanned from their adoptive strategies towards vulnerability and how these prevent or enable them in their quest to achieve access to a livelihood asset.

When asked how fishers respond to vulnerability concerns such as shocks, adverse trends and unfavorable seasonal patterns that can affect their livelihoods, the chief fisherman of Nungua contended that;

"Apart from fishing, some of us cultivate food crops such as yam, cassava, maize etc, however, the unpredictable nature of our rain fall system sometimes do not give us good yield. In such times, we move in to fishing" (chief fisherman of Nungua)

Furthermore, participants also mentioned that shocks such as storms sometimes cause a lot of damage to their boats. It is absolutely clear that, Shocks in the form of the damage of an outboard motor or a fishing boat could destroy the assets of such household, thereby rendering it vulnerable. It was also espoused by respondents that natural disasters (heavy rains and cyclones) can also have significant impacts on natural resources or environmental sustainability on which fishermen livelihood heavily relies. Illness of household members, and poor catches were all cited by most of the respondents as shocks that they often find themselves in. Poor fishermen are especially vulnerable as shocks can force them to liquidate assets. A household member from Nungua, lamented how he sold his outboard motor

"The last fishing season was really bad for me, my net entangled and the crew could not pull it out due to that I lost the net, this affected me financially since the nets are very expensive and may require an entire savings of a fishing season to purchase one, I eventually sold my outboard motor but I hope to get one this coming season" (a household member from Nungua)

A major factor that was recorded by all the respondents as trends which often make them vulnerable was the increase in the price of the premix fuel. This is a heavily subsidized product

used by fishermen for the outboard motors that run their boats. The assemblyman in trying to throw more light on the premix fuel reiterated that;

"Since the inception of the premix fuel in 1990, the allocation, distribution and sale of premix fuel, has been challenged by numerous problems. The original idea was to ensure the timely availability of the product to the fishers at an affordable price. It was also to empower the fisher groups to run the premix fuel sale point at the landing beaches and the proceeds to be used in developing their communities and themselves, however just after some few years, the situation has not been the same. There has been a proliferation of premix fuel sale points owned by individuals rather than the fisher groups as was proposed".

As part of responds on the impact of trends, respondents also mentioned the issue of conflicts between local and migrant fishers. This factor has been discussed extensively in the literature. Participants also contended that, growing populations within the fishing communities could also contribute to a reduction in individual access to natural resources. As migrant fisher households access to local natural resources declines, they are forced to use less sustainable resources.

The final factor which often makes small scale fishers vulnerable is the seasonality of fishing seasons. It is a major pressure that the poor have to keep up with. Fishing is not practice throughout the year among the communities of Chorkor and Nungua. The seasonal migration of fishermen along the coast of West African was expressed by respondents as a situation that makes them vulnerable. Migrating with the crew from one country to the other in search of fish as explained by most of the migrant fisher-folk comes with a lot of financial burden and preparedness. These they said, were augmented by poverty which makes them incapacitated sometimes in every endeavour of their daily activities.

All the participants interviewed admitted that Poverty inhibits them from recovering from these vulnerability shocks, trends and seasonality. This affirms the literature on 'social exclusion' (Béné 2003) that the poor and vulnerable are not well taken into account by sector-based organizations. The findings revealed that the rural fisher-folk, particularly in Nungua, lacks the requisite knowledge to diversify their livelihood strategies in order to overcome the vulnerability dilemma as compared to their counterparts in Chorkor

5.1.3 Livelihood assets of fishermen

Local and migrant fishermen represent 70% of the total resource users in the two villages thereby making their views and contributions very prominent due to this, a section of the interview was conducted with these groups so as to gain an understanding on the livelihood assets at their disposal. As indicated by Scoones, (1998), people require a range of assets to achieve positive livelihood outcomes. The sustainable livelihoods framework draws attention to five types of capital upon which fishermen livelihood depends. These different combinations and components of livelihood assets such as physical, human, natural and social assets are required for fishermen to engage in fishing activities. The presence or absence of various components of these assets can facilitate or hinder, respectively, the likelihood success. elusive

5.1.4 The capital asset pentagon

As indicated in figure 5.2, the diagram gives a clear picture of the various forms of livelihood assets that fishermen either have or do not. The ability to access these assets was brought to play during the interviews. The capital pentagon is interconnected such that the lack of one could directly or indirectly have an effect on the other. For instance from the data gathered, all the respondents affirmed that their inability to acquire the expensive beach seine nets (financial capital) tends to affect their social relations since they are not able to honor the demands of such groups.

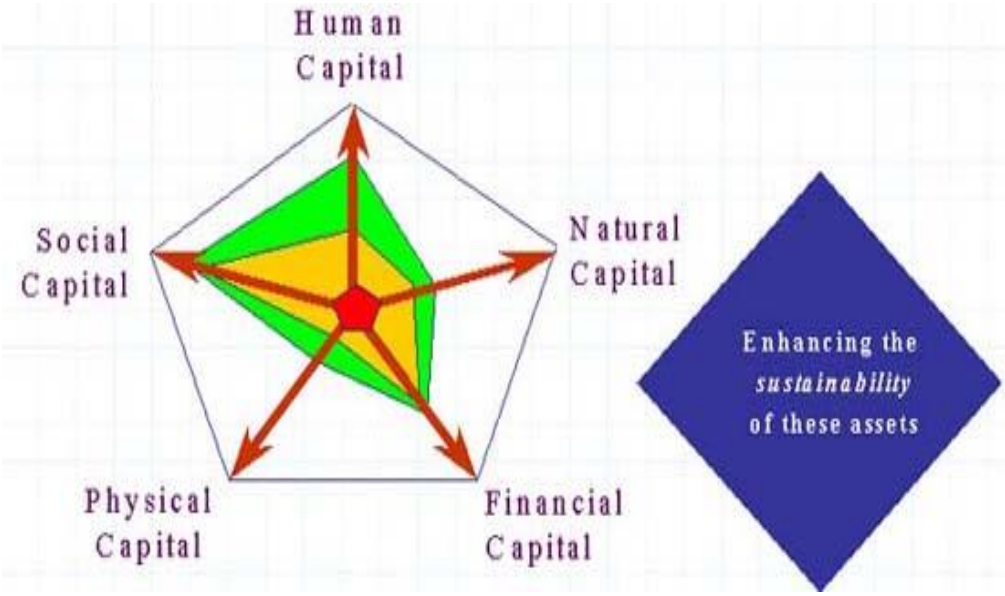


Figure 5.2: Showing the Livelihood Assets Pentagon

5.1.4.1 Physical/Financial Capital

Among the selected communities, respondents were interviewed on their educational level, the reasons that motivated them to take fishing as an occupation, their assets (number of nets, boat or outboard motors) and their experience and longevity in the industry amidst all the challenges. The aim was to find out how such factors, impact on their livelihood assets. Fishermen pointed to the fact that physical Assets such as boats and nets are very expensive and that such gears in most cases are always inherited. This implies being weak financially could determines the kind of fishing gear you can acquire which will also reflect on the kind of human or social capital. In Chorkor for instance, 70% of the respondents affirmed that most fishermen who had their own nets or canoe probably inherited them from their fathers or were jointly owned due to their expensive nature. When asked how many nets, boats and outboard motors they have, just a few could respond positively.

"I have one big canoe, one net and one outboard motor. All these gears with the exception of the outboard motor were handed to me by my father. Currently, all these gears are in use, none of them is dormant. In this community, it is very common to have both nets and boats that are jointly owned due to the expensive nature of the fishing gears. I used to have this canoe that was jointly owned, but due to conflicts and misunderstandings among we the owners, it has been dormant for some time now. The chief fisherman is making efforts to settle the matter" (Boat owner from Chorkor)

The major physical assets recorded by most of the local fishermen were the boats and nets; however, some of them also owned outboard motors which they rent to migrant fishers during the fishing season. The incomes generated from these activities are channel towards the upkeep of their families. A boat owner from the Nungua community reiterated how he assisted some migrant fishers from *Ningo Prampram* (an adjacent fishing village) with his boat when they encountered a problem with theirs.

Samples of the different mesh sizes that they make available to both local and migrant fishermen were displaced to the researcher.

Picture 5.1: Showing the different mesh sizes used by fishermen in Chorkor community

The fishmongers also belong to credit unions which provide them with capital to increase their business. Besides,some of such capital, as noted by the fishmongers, is also used to shield the households from external shocks.

5.1.4.2 Human Capital

Households with larger numbers tend to have more human capital since they often used family labour. The head of a crew in Chorkor stated that, they often recruited as and when the need arise. He reiterated how the entire activity takes place

"A fisherman with a net is unable to fish alone, the more hands he has, the better because the sooner the net comes in, the fewer the fish that can escape. Although most of these hands are needed to do the pulling, some are also needed to perform other tasks, which require some additional skills. You would need paddlers and a helmsman who knew how to set the net, when to go and where to go. One would need experienced swimmers who can guide the net ashore and dive if the net gets stuck. One would need some supervisors who understand the movement of the net in the water, the habits of the fish and the effect of the ocean on the net, and who know when to pull and when not to pull, when to cross, close the net and tie it together"

Throughout the data collecting, it was clear that having formal education did not contribute much in building the human capital of the fishermen. They had informal training from their fathers who virtually thought them how to fish. When asked how long they have been in the fishing, most of them were of the view that fishing is more or less '*a way of life'* for them.

"I have about 30years experience in fishing, I started fishing when I was just 12years, I used to follow my father to sea each time he sets out for fishing. He thought me all the techniques in fishing and how to behave at sea. Besides I also used to assist my uncles in carrying their nets to the shore each time they call on me. Through these adventures, I eventually learned out to fish"

A migrant fisherman in affirmative of the fact that most of them started fishing at a very tender age enumerated how he got in to the industry.

"I was born into fishing and it's been part of me since childhood. My father was a fisherman and he took us along each time he was going to fish. I never went to school due this, fishing is my only profession and I earn money from it to support myself and siblings"

Having crew members who have long experience in fishing contribute immensely to higher catches. These fishers have acquired a lot of knowledge through their long experience. When asked the kind of mesh size specification that are currently in used by fishermen in the Chorkor area, a participant among the association of net owners had this to say.

"although all the local fishermen in this community have equal rights in terms of the gear (net) to use it does requires some knowledge on the mesh size to be used in a particular season. although there are no specifications in usage, we have different mesh sizes with 1inch mesh size, 2inch, and 2 ½ inches. Having great knowledge on these mesh sizes will determine your success in the sea". (Interview with a net owner in Chorkor)

Apart from seeing fishing as *a way of life*, other respondents particularly from the households had other reasons more than just a way of life. They enumerated other reasons such as the lack of other livelihood alternatives, inability to venture in to fishing due to the capital intensive nature and whole lot of others.

5.1.4.3 Social Capital

The social assets, among others, according to discussants consist of networks, social relations, common rules, norms and sanctions, and associations which are used to pursue livelihood objectives. Respondents were interviewed to find out if one needed to know an influential

person in the society before such a person could be given access to fishing ground. It was mostly the migrant fishers who responded positively and saw social status as an important asset. This affirms Pretty (2002) argument that the notion of social assets embodies the idea that social bonds and social norms are needed for sustainable livelihoods. Participants noted that most of the fishermen developed Social assets by networking and connecting with other fishermen to be able to access institutions. The data further revealed that, the accumulation of social assets among fishermen depended on whether one is on a permanent migration or temporal. For instance, fishermen who migrated from other coastal villages such as Ningo PramPram and had permanently settled in receiving villages such as Nungua had more connections than those who were just on temporal migration.

Fishmongers and the migrant fishers acquire social asset through obtaining membership of groups such as the Fishmongers Association and the Local Fisherman parliament respectively. Fishermen also asserted that they formed local cooperative organization to assist each other in times of need. These unions give them a kind of social protection and as the saying goes "united we stand, divided we fall". Individual fishermen and fishmongers who join such cooperatives have the unique opportunity of recovering from the vulnerability context. Consequently participants were asked to indicate any association (s) in which they belong. It was found from the chief fisherman of Chorkor through the community fishers register that about 70% of the fishermen belong to the fishers' parliament while the fishmongers also recorded about 60% belonging to cooperatives and other credit unions. The associations mentioned include Ghana National Canoe Council, Ghana Inshore Fisheries Association, Chorkor and Nungua Community Based Fisheries Management Committee (CBFMC), Chorkor and Nungua Fish Mongers Associations, religious organizations and Ghana Private Road Transport Union.

5.1.2 Policies, Institutions and Processes

These refer to the legislative processes which determine the manner in which livelihoods are pursued. These structures and processes operate from the formal fisheries governance levels down to household level (the fisherman). Views of the local fishermen indicate that transforming structures and processes have a lot of influence on the terms of exchange between various assets. They dictate the results of the livelihoods strategies as well as create the assets; determine who gets access to fishing grounds, when and how; and influence the rate at which

the assets could be accumulated. Addressing these PIP issues as an entry point for development provides a powerful way of helping the poor and marginalized in the long term.

Furthermore, an understanding of natural resource management dynamics requires an appreciation that institutions governing access to natural resources are sites of social interaction, negotiation and contestation. This confirms Bebbington (1999) argument that, there should be no distinction between access and the resources themselves because access is the most important resource determining the capacity of people to build sustainable poverty alleviating rural livelihoods.

The assemblymen for the two communities and the respondent from the Accra Sub-metro, on behave of the fisheries commission acknowledged the fact that the assembly is now recognizing that, determining access to fishing grounds and other fish resources cannot be managed effectively without the co-operation and participation of members of the fishing communities. They reiterated how the assemblies are making effort through the decentralization programs to institute co-management measures.

5.2 WEAKNESS IN THE GOVERNING SYSTEM BASED ON MATERIAL AND RESEARCH FINDINGS

In order to promote the effective management of a system, the governing system could explore a more interactive governance approach. Interactive governance advocates wide participation in governance from a normative as well as from a practical point of view because actors which usually include individuals, associations, firms, governmental agencies and international bodies are involved in the governing process (Kooiman et al. 2008). However, this seems to be the opposite as much as the management of Chorkor and Nungua Fisheries is concern.

To begin with, albeit, the legal Act of the Ghanaian Fisheries stipulates rules and regulations that should govern access to fishing grounds as well as stating the limits of the industrial, semi-industrial and the artisanal fisheries, there is still the lack of enforcement in achieving such objectives. For instance, the act calls for the establishment of fishing zones and close seasons (Act 625 of 2002). It was however, noted by respondents that, the fisher-folk do not comply with these rules. The reason for the noncompliance, is that, there are no alternative livelihoods/copping strategies to hold to during such closed seasons. The monitoring, control and surveillance of the EEZ and the enforcement of the relevant fisheries laws are weak, making it difficult to assess the level of illegal fishing and therefore the catch by foreign vessels

(Atta-Mills et al. 2004), coupled with the communication gap between the implementers of such policies and the users of the resources.

The Executive Organization through the Ministry of Fisheries also has its share of the problem. One of their main objectives is to collaborate with the local fishermen in enforcing laws and taking major decision regarding the entire management of the artisanal fisheries (Kraan 2009). The local fishermen, however, are seen as the receivers of such instructions instead of part taking actively in the formulations of such laws. The ministry is to collaborate with the local fishermen through the district assembly at the formal hand and with the traditional chiefs who are at the grass-root level in order to improve fisheries practices. The gap between the traditional arm of government and the formal governing system does not auger well for an effective governance system. This has resulted in illegal fishing practices such the use of light in fishing which breeds conflicts between semi-industrial and artisanal fishers.

The fisheries commission is to ensure the effective management and sustainability of the fisheries of Ghana as well as the settlement of disputes among local fishermen. According to Kraan (2009), the commission should carry out this task in consultation with the traditional chiefs and the chief fishermen of the various fishing villages, however, due to the communication gap between the district assembly and the traditional council of chiefs, views from the local fisherman hardly get to through to the top.

At the district level, the Ministry of Local Government and Rural Development (MLGRD) is responsible for managing fishers, fish processors and other fishery resources. This huge role requires a full collaboration with the chiefs' council, which is closer to the fishermen and also has authority at the village level for an effective management decisions, however, this seems to be overlooked. The assembly is mandated to get down to the grass-roots and ensure that the CBFMCs are sustained as stated in the PNDC law 327 of 1993 (AMA, 2010).

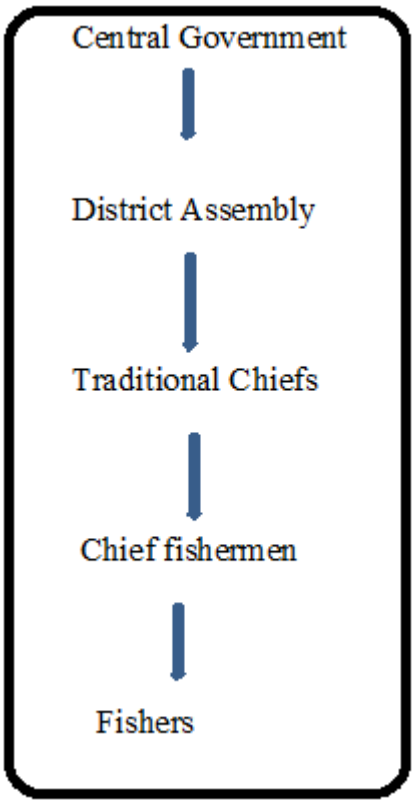
In summary, what is importunate now, given the case of these two communities, is the creation of a more dynamic and practicing link between the formal and the traditional forms of governments. This could be done using the capacities and interests of the local fishers and their authority to complement the enabling legislation which has been provided by the state already. Robert & Meryl (1994) contend that, if the gap is bridged between the formal and traditional government, resource conflicts could be diminished thereby promoting better resource

management where fishers and other user groups are more involved in the management of the resource.

5.3 THE ROLE OF INFORMAL TRADITIONAL INSTITUTIONS (WHO ARE THE ACTORS AND PROCESS IN THE DECISION MAKING CHAIN? AND TO WHAT EXTENT DO LOCAL FISHERMEN PARTICIPATE IN DECISION MAKING?

In order to address the process of decision making regarding access to fishing grounds in the selected communities, the chiefs, the assemblymen and the chief fishermen were interviewed. From the framework, such stakeholders are seen as the main policy makers at the local level. The interviews conducted revealed five main chain actors in the decision making process namely: the central government, the district assembly, the traditional chiefs, the chief fishermen and the fishers. This chain did not affirm what Appendeni (2001) and Robert & Meryl (1994) indicated, regarding the application of the livelihood approach, and the idea of giving a higher priority to the fishers in terms of their involvement respectively. This is because the chain neglects the views of the rural fishers which has been the trend in most of the poverty alleviation programs in Ghana (Percy Oware, 2012; see also Konadu-Agyemang, 2004).

The findings from the field revealed that in the chain of decision making, the chief fishermen and his fishers are at the bottom. This clearly indicate that the results does not fit the process of the rural livelihood approach which seeks for an active participation of fishers in the decision making process.



Source: Own construction

Figure 5.3: A diagram showing the various actors in the decision making process in the selected communities.

Raakjorr Nielsen et al., (2002) argue that, the top-down system, though, when correctly implemented, could provide a quick and effective management of natural resources. Contrary to the above assertion, the respondent; the fisher-folk, in the current study viewed the top-down approach as being distant, impersonal and extremely bureaucratic, thereby over ruling the powers of the traditional government (chiefs and council of elders). Although the process in the structure of the decision making does not give room for interactions between fishers and the central government, it was clear from the respondents that fishers who had stronger ties with traditional chiefs could bypass the chief fisher to get their issues resolved. In the same vine, a chief fisherman could also bypass the traditional chief to the District assembly. This is also reflected in the social and financial capitals of such fishing households, which in tend determines their ability to influence authority.

5.3.1 Responsibilities of Chain Actors

This section describes and discusses the roles and responsibilities performed by the actors in the chain of decision making. As seen in figure 5.3, the central government is considered as

the first stakeholder. They promulgate policies and other decisions pertaining to access to fishing grounds. These are then passed to the fishers through the district assembly. There is no direct interaction or relations between fishers and the central government as stated in Kraan (2009). The traditional chief, the chief fishermen and some of the fishers often organized monthly meetings where they merely receive instructions from the central government through the district assembly (the assemblymen).

According to the traditional council, meetings are organized once in a month however, emergency meetings crops up as and when necessary. There are 20 and 25 landing sites in Chorkor and Nungua respectively, each of which is managed by a chief fisherman. During decision making, the national government is represented through the assemblymen of the electoral areas in the sub-metro. When asked about the kind of decision-making process in Chorkor, this is what the chief fisherman had to say

"*During decision making, all the chief fishermen for the 20 landing sites are present with the overall chief fisherman. Also in this process, the chief of the community and his council are involved in the decision making process. The representative from the Accra sub-metro (central government) hands us with instructions as to how the fishery should be managed.*

(Chief fisherman of Chorkor)

The chief fisherman also reiterated that, each landing site has its own landing site chief fisherman with about 70 fishermen under his supervision. Each of these groups makes their own decisions which are later carried by the overall chief fisherman to their monthly meetings. However, during the monthly meeting, the government representatives sometimes overturn their views.

Apart from the monthly meetings, the assemblymen and the chief fishermen meet to deliberate on management issues. There is also the Fishermen Parliament at the local level where fishermen (crew, boat and net owners) meet to discuss management issues. These meeting are usually organized at the beach site and on Tuesdays: "no fishing day".

Drawing conclusions from the process of decision-making at the village level, it is very clear that, the local people have strong traditional rules that govern them and these rules are completely complied by most of the fishermen. Furthermore the participants indicated that, informal and customary community-based management strategies are already in existence in the two communities which the government could use as a way of bridging the communication gap. With the adoption of a more interactive governance approach, the government could create

stronger ties or connections with the traditional council of chiefs so that, they could co-manage the fisheries. When the local fishermen fully participate in the planning and implementation of management decisions, they tend to cultivate a stronger commitment to comply with the management strategy and sustainable resource use as were advocated by most of the respondents.

Furthermore, participants' responses again support the principles of the livelihood approach in the sense that it facilitates the decentralization of responsibilities away from the government and to allow almost total control for the management of the resource by the communities; whereby they define their own needs, goals and aspirations and decisions affecting their well-being. One of the chiefs from Nungua when asked if the community when given the chance could effectively managed their own resource. He contends;

" *we ultimately rely on the resource for our livelihood and have the greatest incentive to ensure that it is managed correctly and sustained, besides my council of elders and the fishermen will be more committed and supportive of regulations if we feel some sort of ownership of the fish resource and have a say in the design and implementation of management regulations"* (Chief of Nungua)

It is, however, sad to note that so many years of successive top-down management, have frequently by-passed the communities, and has often resulted in the marginalisation and erosion of the traditional structures that form the building blocks for the formation of CBFM.

5.3.2 Management Objectives in fishing communities

Artisanal fisheries over the years have had different concerns regarding the effective management of such fisheries. Chorkor and Nungua fishing villages are no exception to these concerns. In order to address the main management objectives in these two fishing villages, respondents such as the traditional chiefs, the assemblymen and the chief fishermen were interviewed. The idea was to ascertain the reasons for such objectives, how they are defined and where they come from. All three respondents at Nungua affirmed that, there is in practice the open access regime to fishing grounds. Ghanaian regulations prescribe that nets may not have mesh sizes which are smaller than one inch. However, in practice a lot of nets have mesh sizes of 3/8 inches. Across the country the mesh sizes of the cod end of the beach seine nets range between five and 25mm (25mm is rare). The reason why beach seine fishermen are not

easily convinced to comply is that they are mainly interested in catching anchovy, for which a small mesh size is needed. Data revealed that, fishing regulations such as input and output regulation were virtually nonexistence in both villages. The chief of Chorkor in his responds to the main regulatory activities in the landing site, stated that the situation looked very disconsolate.

"Although at the national level, we are often reminded on regulations in the legal framework of the fisheries act, we at the village level hardly enforce them. There is less fishing regulations over here, we do not have limits in terms of size of gear, or times spend at sea. The only regulation that I can confidently recall is the fact that, we don't fish on Tuesdays which is dedicated to our gods". (Stated by the chief of Chorkor)

The assemblyman of Nungua electoral area also asserted that, although input regulations such as the type of gear, has several advantages in protecting juvenile stocks, it is sad to note that, they hardly adhere to them. Respondents recalled some of the few fishing regulations that are in practices.

"……. landings take place at the main landing sites where the market women and other fishmongers come around to purchase the fish. This has always been strictly adhered to by all fishermen. However, the time to fish mostly depends on the crew and the sea currents and other weather conditions. Tuesdays are closed for both local and migrant fishermen in this community, most of them use the day to med their nets and prepare for the following day….."
(Stated by the assemblyman of Nungua Electoral area)

Decisions makers at the village level usually involving the CBFMC headed by the chief fisherman and council of elders with representatives for the various landing sites. These decision makers usually meet during CBFMC forums where management objectives are made. The content of such decisions determines the success or failures within the fishery as encapsulated in the conceptual framework. It is absolutely clear that, both the process and content of the decisions made has a direct bearing on each other. Management objectives distinguished in both fishing villages were analogous. Respondents maintain that, their fisheries in recent times are experiencing a drastic stock decline so they try to set objectives by themselves so as to mammies the current situations.

Five (5) major objectives were enumerated by most of the respondents;-They seek to enforce regulatory measures such as mesh size regulations, time spend at sea and prevent bad fishing practices such as the use of light in fishing. Regarding fishing regulations at the community level, participants contended that, the legal framework of the fisheries Acts, document some fishing regulations, however, the problem has to do with the enforcement. This therefore explain the weakness on the part of the Fisheries Commission to regulate, and manage the utilization of the fishery resource.

"*Agreed management regulations are not fully respected because either there is a poor MCS capable of punishing free riders or the regulations have not obtained sufficient support and legitimacy by all resource users*." (Stated by the assemblyman of Nungua)

The use of light to induce fish is a bad practice that has been engaged by some fishermen especially the semi-industrial fleets. This lightning according to the respondents kills both juvenile and matured fish stock. Generally, responses indicated, that the government had done little in addressing this problem despite the numerous promises it had made to them.

They further reiterated that, the existence of conflicts and misunderstanding among local and migrant fishermen regarding access and rights to fishing grounds has been a major problem, hence, their objective is to see to it that such issues are curtailed. They look forward to a situation whereby both local and migrant fishermen, will cooperate with each other and handle misunderstandings before they escalate to serious conflicts.

The process of securing loans from financial institutions to enable fishermen acquire new fishing gear was recorded by most of the respondents as one of their major management objective. With better fishing gear, they are sure of better catches thereby meeting household's needs as well as the needs of the market. When asked why these objectives, the chief fisherman of Chorkor had this to say.

"We believe that, they are the most importunate issues affecting we the fishermen over here"

These objectives according to respondents were defined by the fishermen and other stakeholders in the fishing villages however due to politics from the central government they hardly, are able to put them to fruition.

5.3.3 Impact of management decision on target groups

Participants were selected from both local and migrant fishermen to address the impact of management decisions that has the potential of escalating into conflicts between the migrant and resident fisher-folk in the fishing villages. In assessing the challenges facing access to fishing grounds, we had general questions about the resource users and the source of conflicts. The aim was to find out the motives of management decisions on access and to assess if the users are fully involved during the enactment of such decisions. This to some extent gives a priori idea of a possible relationship. During the data collection, respondents demonstrated that, there was a huge gap between management decisions and local participation which eventually leads to conflicts.

The permanent migrant fishermen were of the view that, after fully been accepted in the receiving community, they are still treated as migrants and that they are not involved in decision making. These according to them need to be revised. They claim their knowledge in migratory species is enormous which need to be brought to bear. They further stated that, they often sell their catch to the local women thereby creating a form of employment and livelihood for receiving communities.

The local fishermen on the other hand had problems with the entire top-down approach to management. Most of them argued that, management meetings should be opened to all the fishermen and that the top down approach of management is not helping them.

5.4 SOURCE OF CONFLICTS

The diagram bellow represents a conceptual ordered display on the main source of fisheries conflicts within the study areas

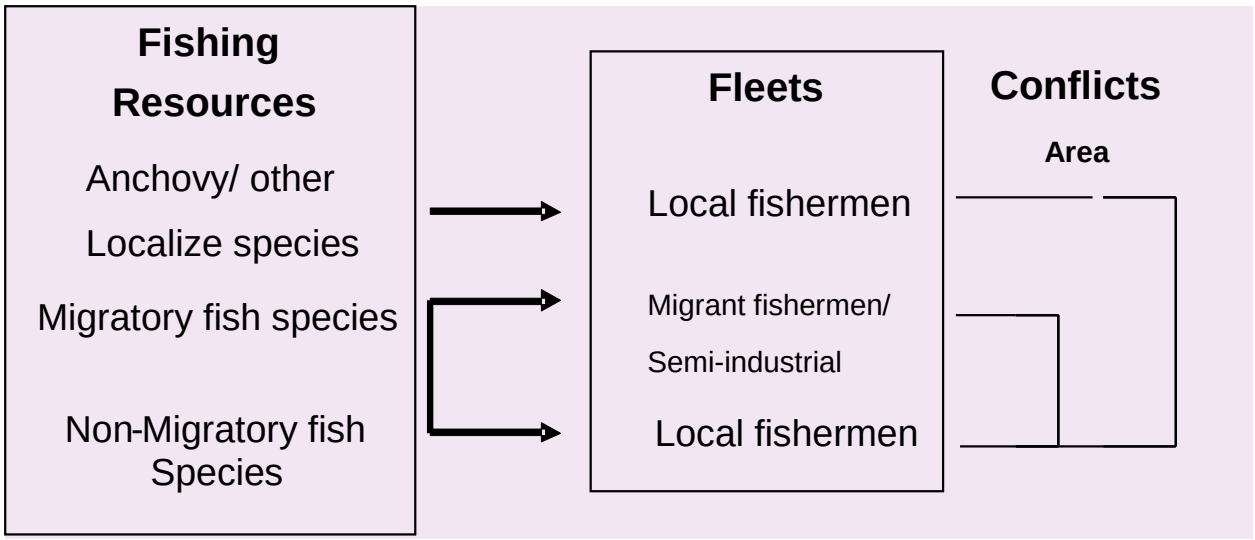


Figure 5.4: Conflicts between local and migrant fishermen from Chorkor and Nungua.

Source: (Own Construction)

The main source of conflict as indicated in the chart display, are between the local fishermen on one hand and the migrant/semi-industrial fleet on the other hand. Most respondents cited several instances where there have been clashes between the semi-industrial and the artisanal fleets in the two villages. However, there were few cases where conflicts were recorded among local fishers themselves regarding chasing the same shoal of fish and net entanglements. The resources in contention are the localized fish species and the migratory species. Common property resources often have problems in terms of controlling access as reported by participants. The physical nature of the resource is such that controlling access by potential users is a problem and may be very costly as has been confirmed by Bortei-Doku (2002) that high mobility of fishermen in the sub-region is as a result of the shared nature of marine resource between countries which has implications for fisheries governance.

"*migratory fish species like those I listed ……. sometimes present a lot of problems for we the chief fishermen to regulate the access to fishing them"* (chief fisherman of Nungua)

Respondents particularly the two chief fishermen from both villages, contended that, although the artisanal sector is officially allocated an exclusive zone for fishing up to the 30 meter-depth-line from the coast, within which the semi-industrial sector cannot come, this rule is hardly adhered to thereby breeding conflicts between the parties involved.

The major source of conflict between the local and migrant fishers as reported by the respondents has been the weakness in the Fisheries Act 625 of 2002, in stating clearly how access should be regulated. It also implies that the need for local fisher-folk to be able to come to terms and change the situation of independent to one of collective action so as to coordinate strategies to obtain greater joint benefits with migrants.

In Nungua, the fishermen reported clashes between fishermen of the same gear group (always from the same or close neighbouring communities) chasing the same shoal of fish (Personal interview with chief fisherman). Although Ghana has a number of norms that govern behavior at sea, one of which states that, the crew to spot a shoal of fish (usually small pelagic) first, is the crew that has the right to attempt to encircle that shoal with their net. Respondents, however, stated that disagreements over who saw the shoal first are frequent. Conflicts between different actors in the fishing economy are very common among the Ghanaian coastal fishermen. The most common being conflicts over price. Fishermen claimed that women traders do not offer a fair price for the catch while the women (mostly fish mongers) on the other hand also claimed fishermen are unrealistic about what the catch is worth. Although at first this appeared to be market competition rather than conflict, there were reports of some fishermen absconding to other villages in order to avoid credit repayments.

5.5 LIVELIHOOD STRATEGIES OF FISHING COMMUNITIES

The livelihoods of a large number of small and marginal fisher households are associated with fishing activities in the study areas. Although literature documented other livelihood strategies such as food crop cultivation and animal rearing, it was however prominent that both fishermen and their households were all engaged in fish related activities. For instance, fishmongers who are mainly the wives of the fishermen process the fish either by salting or smoking which are later sold at the market. Picture 5 shows a fishmonger with the Chorkor Oven.

Picture 5.2: Fishmonger with Chorkor oven in Jamestown near Chorkor

Other livelihood strategies that were outlined by respondents include the premix fuel sale agents and canoe carvers. Participants affirmed that the use of outboard motors with engines due to modernization in the fisheryby both local fishers and industrial fishers brought in the Premix fuel sale agents. They serve as middle men in the premix fuel trade and their role in recent times is in no small way contributing to the effective manning of the fishery. Those engaged in such activities asserted that, the activity was a kind of coping strategy towards the current decline in catches. They again asserted that they were once fishermen but now they had to diversify into the premix fuel business.

Canoe carving was also revealed as one of the livelihood strategies adopted by the fisher-folk respondents made statements such as;

"We have no choice than to do something else in order to earn a livelihood for our households.."

This clearly affirms to a large extent, that the fisher-folk in the selected communities have less adaptive livelihood strategies thereby making them more vulnerable to shocks, trends and seasonality.

5.5.1 Conclusion

Chapter five presented the research findings and discussions based on the responses gathered from the field. Findings revealed that the effective participation of rural fisher-folk in access to fishing grounds and other livelihood adaptive strategies is a complex task, that spans beyond the capability of a single institution. It requires strong will for equity, cooperation and collaboration between the central government and the traditional councils. Other community based institutions such as the CBFMO could only be effective if the Fisheries Commission gives them the mandate to management their assets. Besides, the commitment of the Fisheries Commission to enforce fishing regulations and operational ethical standards of the Ministry of Fisheries through the decentralization, could be realized only when the local actors are involved actively in the management process.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

This study sought to examine the challenges influencing access to fishing grounds using both the livelihood approach and the institutional analysis. The idea was to assess the institutional shortages in the Ghanaian Fisheries management structure and make possible recommendations that could enhance the effective participation of local fishermen in determining access to their livelihood assets. This section of the thesis presents recommendations, suggestions for future research and conclusions based on the findings of the study. These recommendations are developed to benefit the fisheries management sectors (it may be useful for the planning and implementations of decisions on access to fishing grounds and the need for full participation of the rural fisher-folk) and for future researchers.

6.2 CONCLUSIONS

6.2.1 Institutions

As been clearly stipulated in the initial chapters, the study sought to address the challenges influencing access to fishing grounds making use of the livelihood and the institutional framework approach to fisheries management. This was done by conducting a semi-structured interview to solicit the views of respondents (mainly the fisher-folk and their households, the traditional chiefs, assemblymen, fishmongers and chief fishermen).

The results from the discussions indicated that the type of decision making chain (top-down approach) pertaining to access, does not promote the effective participation of local fishers since policies are passed down from the top government officials. There is absolutely a lack of interactions within the chain. Such case does not confirm to the ideas of both the livelihood and governability approach to fisheries management. Furthermore, findings revealed that when local fisher-folk are actively involved in the process of decision making, it turns to reduce the administrative load on government, and also promote the effective realization of rural livelihoods.

6.2.2 The vulnerability context

On the vulnerability of the rural fisherman, the initial research expectation was that, the fisher-folk in the two fishing communities were extremely vulnerable to shocks, trends and seasonality. However, although vulnerability context was recorded, a significant number of fisher households had devised several coping strategies out of this context. The only responsibility now resting on the government is to ensure the sustainability of such strategies in order to free fishers from the poverty web. This could be done through the provision of financial capital to both fisher households and fishmongers to diversify these strategies.

6.2.3 The livelihood Assets

On the livelihood assets, particularly the natural and physical assets, poor people ability to gain access to them rest sole on the fisheries act. However, it is pathetic to note from the literature that, the main legislative instrument, Fisheries Act 2002 (Act 625), governing the fisheries sector and the sector ministry has no provision to ensure access to fisheries resources. Although the Fisheries Commission is the legislative body responsible for determining access at the village level through the CBFMC, fishermen vehemently noted that it is extremely difficult for an ordinary fisherman or a boat owner or a crew to get access to the fisheries commission. They also claimed the National Fisheries Association of Ghana (NAFAG), is only for the industrial fishermen. According to them, they are not represented in the commission due to that, they do not know the kind of policies that the commission institute regarding access. It also implies that policies that are instituted with little involvement of the artisanal fishermen will surely not stand the test of time since the main people who are affected by such laws, were not properly represented.

6.2.4 Sustainability

Besides, the above findings also show that, migration has been part of Ghanaian fisheries since the 1960s. For the effective sustainability of Ghana small scale coastal fisheries, geographical mobility is necessary to sustain catches on mobile or fluctuating fish stocks. Mobility can also be beneficial to stock conservation in that it enables fishers to move away from locally depleted resources. Besides, when small-scale fisher-folk are operating outside their home area, they are generally resident in and landing to other ports or beaches in the vicinity. This generally conveys economic benefits to the area they are visiting. Despite all these benefits of fisher migration, the Ministry of Fisheries has neither incorporated nor prioritized regulations on how

migrant fishers should acquire permission to fish along the coastal waters of Ghana. Due to this, it is left on the mercies of receiving fishing villages to determine how to handle such issues which could easily potentiate conflicts between local and migrant fishers. This therefore calls for the development of institutional structures that make it possible to effectively integrate and regulate migration for a better fisheries management.

Finally, to be able to ensure the complete local participation of the fisher-folk in determining the livelihood assets, it would therefore require the Ministry of Fisheries and Aquaculture at the national level and traditional authorities at the community level to rethink their priorities regarding fisheries management and to commit to effectively decentralizing the act of decision-making process so as to adequately empower local fisher-folk in implementing their management objectives. This could immensely improve their livelihood adaptive strategies.

6.3 RECOMMENDATIONS

To determine the challenges facing access to fishing grounds, participation in decision making is one critical factor in using both the livelihood and institutional analysis approaches to fisheries management. While there are no specific rules as to how this could be done, the current study has revealed some critical findings that could help in the usage of these two approaches. However, although the following recommendations which target both the government institutions are pertinent, the strengths of the communities will also be helpful.

6.3.1 Institutional recommendations

- Fisheries resources are often perceived as state resource where government has the ownership and exploitation rights to the resource. This approach is usually authoritarian, centralized and top-down as observed in the research findings. Evidence from literature indicates that, the approach has largely failed to result in a rational exploitation of fisheries resources (Thole & Dodman, 1996; Nathanael & Edirisinghe, 2002). However, as argued by Jentoft (2000), participation by the communities is only possible, if they share common 'management' interests and identify themselves with each other. Advancing from these arguments, the research recommends that government should ensure an active participation of the rural fishermen in the management of their own resources.

- Finding suggests that, the community based approach to fisheries management appear, to satisfy several different desirable goals. It places decision-making at a level that should ensure that local knowledge of the resource is brought into play; it ensures participation by fishing families themselves in decision-making processes as well as lifts the burden and cost of administrative functions on the part of government. Government should therefore endeavor to adopt this approach in managing the small scale fisheries in Ghana.

- One major challenge facing the fisheries Commission in managing Ghana's small scale fisheries resources is the recent increase in conflicts among fishermen as competition for a particular species intensifies. Such conflicts, as indicated in the findings, usually occur more often between canoe and tuna boat operators in inshore waters as they compete for the anchovies and juvenile sardines. As conflicts continue to escalate, this thesis recommend that one way of minimizing such conflicts might be to demarcate portions of the inshore waters for exclusive use of artisanal fishermen, as has been done in countries such as Thailand and Japan.

- The Ministry of Fisheries and Aquaculture should provide alternative livelihood activities for the rural fishermen. This could help address their vulnerability as well as raises the adaptive strategies as well as raise the opportunity income of fishing.

6.3.2 Recommendations for local Fisher-folk

- Findings revealed that, although fisher-folk do not have adequate access to infrastructure, finance and technology, due to the fact that they are very vulnerable, they, however are endowed with several features such as adaptability, flexible income-generating strategies, resilient resource management institutions, knowledge, skill and social capital which can be developed further for their livelihood improvement.

- Furthermore, the livelihood approach also reiterate the need to put more focus on building strong institutions, and concepts at the community levels, from the already existing traditional customs by so doing, the focus will be on the ability of groups of people to create and enforce rules by themselves. Using existing viable community

institutions to manage local resources have a higher propensity of success because they already have the legitimacy, support and commitment of those they represent.

- Finally, to facilitate greater involvement of traditional leaders and fishermen, they should make themselves available at all times so that, the Fisheries Department could regularly discuss with them the scientific basis for management regulations. Such interactions are necessary because the Department uses scientific information on fish stocks and habitat as a basis for its management strategies, while most artisanal fishermen believe traditional religious gods and practices influence the availability of fish.

6.3.3 Recommendations for Future Studies

It is recommended that for future studies of this nature, it is very important to increase the sample size to cover more than just two communities. This could enhance a better generalization of finding pertaining to access, conflicts and the livelihood strategies of the fisher households. It is also recommended that future studies examine the possibility of using both quantitative and qualitative research methods in the methodology.

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APPENDIX

Interview guide for boat owners and some selected fishermen

1. What is your name? (Informant no 1. Normally informants should be anonymous)
2. How old are you?
3. What is your ethnicity, your clan, your hometown?
4. Are you married? If yes, how many wives, how old, what do they do for a living, where do they live?
5. Do you have children? If yes, please indicate (per wife) their age and what they do (school, work)? Do they fish with you? Are they going to inherit your business?
6. What is your education?

7. How many years fishing experience?

8. Why did you become a fisherman?

How did you become a fisherman?

Recruitment through family?

How did you learn how to fish?

9. Main fishing methods?

10. Targeted species? Main reasons for the mentioned species?

11. Are you active skipper or crew member onboard the boats you own?

12. Do you (and your crew) collaborate with others when you fish? How?

13. How many nets (also dormant) do you have, how many boats, and how many outboard motors? If they are joint owned, please indicate with who if they are dormant please indicate why they are not used currently.

14. How did you become owner of this / these nets (built yourself or inherited)? Partly related to how they become fishermen?

15. Have you ever done other jobs? If yes, which? (or are you now also involved in other work, like farming?)
16. Who are your household members and what are the income deriving activities in the household?

17. How is vulnerability measured in this community?
18. How are government policies regarding access communicated to you?

19. What forms of organizations or cooperatives exist in this community?

20. Do you belong to any cooperation or organization? If yes, what benefits do you or your household derive from such groups

Interview guide for some selected opinion leaders

Importance of Access

1. What are the main fishing grounds? (Is it wide open areas with fish abundant over the whole area or do the fish congregate at certain locations for feeding or spawning?)
2. Does it require specific knowledge about the fishing grounds to fish where you fish?
3. Is there open access to these grounds?
4. How do the fishermen divide the ground between themselves?
5. Do some have option to set gear in specific positions?
6. Is it possible to limit the access to the fishing grounds?
7. What is the importance of access to the specific fishing grounds? Can you fish in other places? Does it require change in methods or knowledge to change fishing ground?
8. Do you know what is the state of the stock now and how was it 10yrs ago?
9. Where do you get knowledge about the stock situation? Does this knowledge influence your choice of fishing ground?
10. How does access to fishing grounds supports rural costal livelihoods?
11. How much do u earn from fishing monthly?
12. What is the boundary of this fishing community?
13. What do u think are the future challenges of open access?
14. How was access regulated 10yrs ago and how is it regulated now?
15. In your opinion, what role can the government and other NGOs play in promoting access to fishing grounds in this community?
16. Do you think social status (power) affect one's ability in accessing fishing grounds?
17. Do the earnings of fishermen determine their level of access to fishing grounds?
18. How are government policies regarding access communicated to you?

Fisheries management/NGOs contribution

1. What forms of management can be distinguished in this Nungua/Chorkor fishing community? (thus: restrictions on number of nets, how much you can fish, number of boats, time you can fish, areas where you can fish, places to land, etc. Is it local regulations or central (see 12)
2. Who are included and excluded in the process? You have to explain
3. What kind of decision-making process is there? You have to explain
4. And how does it take place; what are the regulating activities they undertake?
5. What objectives of management can be distinguished in the research location?
6. Why do they have these objectives? Who defines the objectives?
7. Where do these objectives come from, what is the Government view behind them?
8. Does the type of technology or gear, determine access to fishing ground?
9. Does one need to know somebody before he can be given access?
10. Are there specific NGOs or other organizations engaged in the welfare of fishers, if yes, list them the state the role they play?.
11. Are there any government interventions or regulations regarding access to fishing grounds?
12. What is the intensity of management in the research location? Control monitoring and surveillance, are these elements in place, who does it?
13. How important is it?
14. How is it supervised?
15. What are the amount of regulations and rules?
16. Where do these rules come from, who made them?
17. How do migrants get permission to stay and access to fishing grounds?
18. What position do they have in the sending settlement?
19. What is the meaning / importance of their migration for the sending settlement?

Interview guide for The Traditional chief and chief fishermen of Nungua community

1. What is the history of the Ga Nungua Community?
2. What are the boundaries of the Ga Nungua Community?
3. Who are the leaders of the Ga Nungua Community?
4. How are the Ga Nungua Community organized? Precedes
5. What is their position vis-à-vis the other ethnic groups along the coast?
6. How are government policies regarding access communicated to you?
7. What is vulnerability and how is it measured among the fishermen of this community?
8. What are the livelihood adaptive strategies of fishermen in this community?
9. Describe the local management system in this community?
10. What is your role in the fisheries? And how do you execute them?
11. Does the absence of local participation in determining access to their livelihood assets create conflicts?
12. How is Access and vulnerability related to each other?

Interview guide for The Traditional chief and chief fishermen of Chorkor community

1. What is the history of the Chorkor Community?
2. What are the boundaries of the Chorkor Community group?
3. Who are the leaders of the Chorkor Community?
4. How are the Chorkor Community organized?
5. What is their position vis-à-vis the other ethnical groups in Ghana?
6. What is vulnerability and how is it measured among the fishermen of this community?
7. What are the livelihood adaptation strategies of fishermen in this community?
8. How are government policies regarding access communicated to you?
9. Does the absence of local participation in determining access to their livelihood assets create conflicts?
10. How is Access and vulnerability related to each other?