

Poverty mitigation and Wealth creation through artisanal fisheries in Dzemeni area at Volta Lake, Ghana.

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University of Bergen, Norway. Spring, 2008.**



ABSTRACT

The study focused on the role of fisheries in wealth creation and poverty mitigation in the Dzemeni area, at the Volta Lake of Ghana. Three wealth groups were identified based on their value of asset possession, income earnings and productive capacities at the household level. The major source of livelihood is fisheries (involving fishing, fish mongering or fish trade in the local market). Other livelihoods are farming, making of fishing gears like canoes, basket and net traps, bamboo traps and ovens, repairing of damaged outboard motors; selling of other items like bags of charcoal, pepper, livestock; shop keeping; corn mill services and transport services. Investments in securing more assets, timely disposal of assets, increasing of household size were among the livelihood strategies employed by the rich to accumulate wealth. The poor respondents are more vulnerable to the effects of the seasonal fluctuations in fish catches than the rich respondents because they depend more on fishing as their livelihoods. Death of a prominent family member or the breadwinner of the family is among the factors that make members of the low strata poorer and more vulnerable. It was also discovered that children from poor households in the study area are more disadvantaged and vulnerable than other categories of people as they are mostly over exploited by the rich who foster them. This is due to their parent's inability to cater for them or secure a better future for them. The victims are mostly young boys and girls aged between 5 and 14years.

ACKNOWLEDGEMENTS

In writing the thesis, I have become indebted to some important people who assisted and encouraged me through out the writing process.

First of all, I thank God, almighty for sustaining me throughout the entire writing process.

My next appreciation goes to my academic supervisor, Prof. Ragnhild Overå for her kindness, guidance, and supervision throughout my studies in Bergen. Thank you for everything.

Again, I also appreciate the kindness and help of Prof. Tor Halfdan Aase and Prof. Peter Andersen of the Department of Geography.

I cannot forget of the Norwegian Government who financed my entire studies in Norway.

I sincerely thank my friends, Naa Ansaah-Ansah-Koi, Issac Ter-Ibinibe Sopelle and Owusu Koranchie Partric for their encouragement throughout my studies in Norway.

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LIST OF ABBREVIATIONS

CMI	Chr. Michelsen Institute
FAO	Food and Agriculture Organization
GSS	Ghana Statistical service
NGOs	Non Governmental Organizations
OECD	Organization for Economic Co-operation and Development
SLA	Sustainable Livelihoods Approach

UNDP

United Nations Development Program

WCED

World Commission on the Environment and Development

WELFARE

Well-being among Fisherfolks in African Research'

CHAPTER ONE: INTRODUCTION TO THE STUDY

1.1 introduction

Millions of people depend on fish worldwide as their source of protein which means that fisheries provide employment for many people as well. Dependence on fish for food and livelihood is highest in the developing nations of Africa, Asia and parts of Latin America (Getis, 2000:416). Fish also plays important roles in the nutrition and economy of some developed countries with well developed fishing industries like Norway, Iceland and Japan (ibid). Many households in West Africa living along the coast and inland areas dependant heavily on fisheries as their livelihood (Neiland and Bene 2004:3). These fishing communities have generally been classified among the poorest of the poor and are portrayed as one of the most disadvantaged segments of the society (ibid). In Ghana fish is identified as the cheapest and most vital source of animal protein in the diet of the people (Odotei, 1995:1). According to Odotei (1995:1), fish consumption in Ghana ranks among the highest in Africa with over 70% being produced locally by artisanal marine and inland fisheries. Artisanal fisheries (both marine and inland) is also the source of livelihood for more than 500,000 men and women involving fishermen, fish processors, fuel sellers, mechanics, transport operators, watchmen and porters (ibid). This means fisheries sustain many people and their families who depend on it as their livelihood. The fishery industry in Ghana is also one of the important sources of the nation's foreign exchange earnings. Fish is identified as Ghana's most important non-traditional export commodity, having Tuna as the most important fish for export (Koranteng *et al.* 2006:9).

In Ghana, small scale fishing communities have most of the dispositions of poverty that needs the attention of both experts in developments and academics interested in poverty issues. In this research, I will carefully look at importance of fisheries in household poverty mitigation and wealth creation. In this research the term household is applied to include all the people living in one house, and eat from the same cooking pot and who are under the care of one person, the household head. Members of a household may consist of a man (the head) with many wives and

their children, other relative and workers of the household head or a woman (head) without a husband and her children as well as other relatives and workers.

My inspiration to research into fisheries related issue began when I realized how my academic supervisor, Prof. Ragnhild Overå was well versed in Ghanaian coastal fisheries. I was finally inspired to settle on this particular study when my Academic Supervisor introduced me to an on-going fisheries project, 'Well-being among Fisherfolks in African Research' (WELFARE) at the Chr. Michelsen Institute (CMI) Bergen, Norway. My academic supervisor is one of the research team members of the WELFARE project which is funded by the Norwegian Research Council. The project aims to study poverty in small scale fisheries by analyzing the role of fisheries in poverty reduction and prevention.

1.2 Inland Fisheries in Ghana

In Ghana, inland fisheries consist of fisheries from lakes, rivers, dams, aquaculture, estuaries, lagoons and reservoirs. They add up greatly to the overall production, employment, food security, nutrition and foreign exchange earnings of the country (Koranteng *et al.* 2006:11). The inland fisheries in Ghana account for 16% of the yearly domestic fish catches having a potential yield of 65,000 tons (Odotei, 1995:55). Though the inland fisheries sector is small, it provides livelihood to thousands of Ghanaians.

The Volta Lake, for instance, serves as the major source of the inland fisheries in Ghana, making up of about 85% of inland fish production and it serves as a livelihood for about 80,000 fishermen and fish processors or traders (Koranteng *et al.* 2006:11). The formation of the Volta Lake which took place in 1964 covered and displaced communities and their farmlands. This made it possible for communities which did not live near the water or know much about fishing suddenly got closer to the vital fishery resource which they could exploit as their livelihood. This ended up in a 'fish rush' for such men and women. Consequently, fishing along the lake is practiced by migrants from which are of many different ethnic origins. They are the Ewes (Tongus and Anlos), Ga-Adangmes(mainly Adas and Ningos), Fantes and Efutus. Apart from the

Tongus all the groups mentioned are originally fishermen who have migrated from the coast. (Odotei: 56).

1.3 Nature of Small Scale Fisheries

The common narrative that has been associated with small scale fishers is that they are landless, unskilled, illiterates, and poor who are forced into fishing since there are no alternative opportunities available to them, therefore degrading the fisheries resources. Development narratives, according to Roe, (1991:288) can be described as story having a beginning, middle and end which is told about the out come of some events. There has been the assumption that fisheries are easy to enter but hard to get out of leading to overexploitation of resources as the fishers would do anything to catch the last fish because of their poverty (Ellis and Freeman, 2005:264). The common narrative about small scale fisheries is very difficult to turn down due to the inadequate research on the socio-economic role of small scale fisheries in the livelihoods of the less privileged societies (Bene 2003, 951). These narratives are just presented to exaggerate the out come of a course rather than what is actually happening in reality. Rural development is very uncertain and as a result practitioners, officials and policy makers try to simplify this uncertainty by using narratives with the aim of having their hearers to react (Roe, 1991:288). According to Roe, 1991, development narratives are used by their tellers to portray a situation not so much about what should be but what will be if the all the events are carried out as described. In most cases the narratives constructed about small scale fisheries ignores the importance of fisheries as a whole to the livelihood of those involved in it by refusing to present a picture of how the livelihood of the fishers would be without fishing.

Fishing activities are often determined by gender division of labour. Men mostly do the fishing while women are involved in fish processing and trade (Ellis and Freeman, 2005:265, Overå, 1998:8). It would be very strange to see a woman fishing in many small scale fishing societies. This gender division of labour is basically part of the norms in such societies.

Migration has long been one of the important characteristics of Ghanaian fisheries. The mobility of the Ghanaian fishermen has been a very old tradition within Ghana and beyond (Kraan, 2005:2, and Overå, 2001:1). For instance, the Ewe marine fisherman from the Volta Region can be found fishing in the Central or the Western Region and the other places (Kraan, 2005:2). According to Overå 2001, as early as the twentieth century, the Ghanaian canoe fisherman started migrating widely to West African coasts such as Mauritania to the North and Congo in order to fish in areas where fish were plentiful. Researches on marine fisheries in Ghana have revealed that fishermen migrate in order to accumulate wealth. For example, in Moree (a coastal fishing community in Ghana) the aim of the migrant fisherman is to invest the savings resulting from migration in their home town in order to improve the wellbeing of their matrilineage as well as their own personal reputation (ibid:1) Mobility of inland fishermen is also a common phenomenon in Ghana. The extent of occupational and geographical mobility within individuals, households, and other social groups of West Africa occurs to be some of the vital livelihood strategies. Professional mobility is very common among both full- time fishers and temporal fishers. (Jul-Larsen *et al.* 2003). This means that the fishermen switch or combine occupation according to opportunities at specific moments of time and also likely to move geographically to other places where they are most likely to find better catches and marketing opportunities.

1.3.1 Vulnerability and small scale fisheries.

Vulnerability is the “exposure to contingencies and stress, and difficulty in coping with them” (Chambers 1989:1 in (Bene, 2004:14). Fishing households in small scale fisheries are most often exposed to very high levels of vulnerability because of the highly risky nature of small scale fisheries (ibid). By this Bene means that people who depend on small scale fisheries as a livelihood are always faced with the possibility and the fear of losing all their assets including their lives anytime they fish or go to work due to the occurrences of natural disasters(flooding) and accidents in their occupation. In other words, the small scale fisher risks almost everything he has anytime he involves in fishing. Bene (2003) points out that vulnerability appears to be an important feature of small scale fisheries. According to Ellis and Freeman, (2002:267), the

following features of small scale fisheries make the fishing households vulnerable to poverty: high risk job, difficult manual labor job, and high incidence of theft.

In order to accurately measure vulnerability to poverty, it becomes important to understand the various dispositions of shocks and trends that explain why the livelihoods of people declined in the context of the local standard of well-being (Neiland and Bene, 2004:107). Factors like natural disaster, death, diseases, inappropriate livelihood strategy, and social network breakdowns may provide better understanding to vulnerability because they are dynamic (ibid). Irrespective of these high risks associated with small scale fisheries, many people still depend on small scale fisheries as their key source of income. This then suggests that small scale fisheries provide livelihoods to a greater number of people, including those who are poor. This however calls for the urgent need to increase our information precisely about the importance of small scale fisheries and also to broaden our understanding of the numerous ways through which small scale fisheries can contribute to poverty alleviation.

1.3.2 Poverty and small scale Fisheries

The kind of poverty and deprivation that is associated with small scale fishing households and societies have long been observed and reported but the complexities of their poverty is not well understood. For example, in the early 70s the Food and Agriculture Organization (FAO) stressed that “the people engaged in these activities and their families continue with few exceptions to live at the margin of subsistence and human dignity” (FAO, 1974 cited in (Neiland and Bene, 2004:62). This quotation from FAO was only trying to say that fishers are poor but did not suggest to us why the people are poor or how they became poor and even the reason why they are fishers.

The importance of any economic activity lies in its ability to provide satisfying incomes and capital that enhance opportunities or rights and the failure to do this will lead to poverty (Neiland and Bene, 2004:9). Humanity has always recognized the effects of poverty and has made several attempts by finding answers to: ‘what brings poverty?’ and ‘how can poverty be eliminated?’

Consequently, there are many definitions of poverty. Generally, all the various definitions of poverty belongs to one of the following groups: 'poverty is having less than an objectively defined, absolute minimum', this is the absolute definition of poverty; 'poverty is having less than others in society' form this category, poverty is defined in relative terms; and 'poverty is feeling you do not have enough to get along' this last group of definition defines poverty in absolute or relative terms (Hagenaars *et al.* 1988:212). In this study the term poverty is applied in the relative sense. According to the Nutrition-based poverty measures, lack of nutrition is an indication of poverty. (Neiland and Bene, 2004:9:10). The Basic needs and composite indicators are also measures of poverty. Development thinking in the 1970s claim that the lack of human needs such as adequate food, health, education, water, shelter, and transport are also a manifestation of poverty (ibid: 13) and the income-based measures of poverty (Head-count measures, poverty Gaps, Foster-Gree Thorbcke measures) try to measure poverty in terms of the number of households falling below the an conventional poverty line (Neiland and Bene, 2004:18).

About 800 million people living in the developing world do lack food to eat (FAO 1999, cited in Neiland and Bene, 2004:26). One billion children are known to be poor and 640 million of these children lack adequate shelter, 400 million lack potable water, 270 million do not have access to health services, it is recorded that 10.6 million children died in 2003 before age five (www.globalissues.org/TradeRelated/poverty.asp, Global issues Organization). Majority of such people live in the developing world.

The World Bank defines poverty in income terms charging that low incomes lead to inadequate food consumption, health, shelter and education (www.worldbank.org/poverty) and the United Nations Development Program (UNDP) on the other hand do not embrace this definition, choosing to emphasize the multi-dimensional nature of poverty, claiming that the poor are those who are vulnerable, marginalized socially, excluded from a sustainable livelihoods. (Neiland and Bene, 2004:26). According to the Organization for Economic Co-operation and Development (OECD) '*poverty encompasses different dimensions of deprivation that relates to human capabilities including consumption and food security, health, education, rights, voice, security and decent work*' (OECD 2001: 8). This multidimensional definition has gained approval in the

international community. It is now commonly recognized that the multi-dimensional disposition of poverty –inadequate public service provision, low level of education, politically poor organized communities, vulnerability-affects fishing communities as well (Bene, 2004:13). All these definitions point to the fact that poverty is a very complex issue and no one definition can adequately define it, suggesting that the opposite of poverty is wealth.

Wealth provides for its owners both short and long term financial security, it gives social prestige, contributes to political power and can be used to produce more wealth (Keister *et al.* 2000:4). Discussing issues of wealth and poverty are very important for a deeper understanding of people's livelihood. But poverty in fishing communities is poorly understood.

There are two main views that try to explain the relationship of poverty and fisheries. The first view charges that 'they are poor because they are fishermen'. This is called the endemic perception of poverty in fisheries which claims that irrespective of how hard fishers try they would remain in poverty (Bene, 2003:951). This thought is based on the following two arguments: 1. that poverty in fisheries is perpetuated by the low level of the natural resources and the origin of the poverty is therefore in the fisheries sector itself -the conventional wisdom and the endogenous origin of poverty in fisheries-(*ibid*) 2. Because alternative employment in the small fisheries are lacking, there is more pressure for people to enter the sector and this leads to low incomes and low living standards. This argument is known as the exogenous origin of poverty in fisheries (*ibid* 954).

The second view about the relationship between fisheries and poverty claims that because of its open access nature, fisheries offer the poorest people a livelihood through fishing activities or the last resort for the poor. Both arguments suggest fishing makes people poor or there is no hope for people to get rich through fishing. However the nature of poverty observed in fishing household are different in character. Dunn, (1989: 4) observes that many fishing areas are poor but he warns us to note that they are not necessarily poor because they depend on fishing as their livelihood but they are already poor and have little or no assets who are able to sustain themselves with fishing. This means that fishing rather helps the poor to make a living, it is the poor man's 'savior'

Like other parts of the developing countries, fishing communities along the Volta Lake in Ghana are generally characterized by poverty and vulnerability, which is a clear manifestation of deprivation. For many years poverty in such communities has been explained in lights of the low incomes of fishermen (due to low catch) and over exploitation of resources which is believed to be caused by the open access nature of fisheries (Neiland and Bene, 2004:79). It is most often said that because alternative incomes (outside the fisheries sector) are usually low, that is why fishermen's income are also low (Bene, 2003:953).

Over some years now, great progress has been made in the understanding of the disposition and causes of poverty. Of great importance is the conclusion that poverty affecting different social actors (individuals, households or communities) is not always reflecting lack of resources and their overexploitation which is caused by over population (Neiland and Bene, 2004:79). This suggests that preserving the fish stock may be very important, but not all that needed for poverty reduction. The factors (capital, institutions, and management options) which influence people's access and ability to effectively use the resources may also be very useful in poverty alleviation. This means that the management systems play a more critical role in understanding the complexities of people's poverty than just concentrating on ecological issues.

1.4 Problem Statement

The Volta Lake is the most important source of inland fish production in Ghana but the fishing communities along the Volta Lake of which Dzemeni is one, are characterized among the poorest in Ghana (Durstenfeld *et al.* 2008:6 and Pittaluga, 2003: 11). These communities are described as poor because of the prevalence of food insecurity, diseases, lack of access many services including education, potable water, social services and economic opportunities. The incidence of bilharzia among school children is very common along the lake (Obosu-Mensah, 1990: 135).

Although Lake Volta is an area endowed with fisheries resources, poverty is a common phenomenon in the area. However, the experience of poverty is not uniform within households. This has something to do with the different livelihood strategies adopted by the different fishing households. This suggests that fisheries in the Volta Lake play a role in solving the issue of poverty at least at the household level.

1.4.1 Research Question

The fishing communities in the Volta Lake have on the one hand fish resources which mean that substantial wealth can be derived from fisheries and on the other hand, there are high levels of poverty among the people. Fishing has the prospective to lighten poverty and promote development. This then means that fishing can both be used to reduce poverty and prevent poverty (Bene, 2004:15). Fishing can be used to reduce poverty, with this Bene means that the wealth that can be generated from fisheries can be invested or re-invested wisely to accumulate capital which intend can be used to improve ones livelihood. By saying fisheries can prevent poverty, Bene means that the free access nature of and the low entry costs involved in entering fishing make it less difficult for the very poor ones to enter into fishing there by making fishing the safer place for them to keep themselves form falling deeper into poverty.

The main research Question is: what is the role of the fisheries in wealth creation and poverty mitigation in the Dzemeni area?

1.4.2 Objectives:

The following are my research objectives:

1. Examine the role of fisheries in the livelihood strategies of the different wealth groups.
Dzemeni
2. Identify the factors and strategies that facilitate wealth creation in fishing households.
3. Identify factors and processes that lead to poverty and Vulnerability in the fishing households.

1.5 Relevance of the study

Most of the past studies related to the Volta Lake of Ghana have been centered on the ecological aspects of the lake, thus the type and population of the fish stock and how to conserve the fish species among others (see Petr 19966, Rynold 1971, Biswas 1977 as well as Hall and Okali 1974). However, studies related to the importance of the fisheries resource to the local inhabitants along the lake has been neglected hence this study endeavours to look into the vital role of fisheries in the livelihoods of the people of Dzemeni in the context of poverty alleviation and wealth creation. This research is then intended to provide fair insight to citizens, government officials, Non Governmental Organizations (NGOs) and other organizations that may in any possible way want to tackle the issue of poverty in the study area.

1.6 structure of the study

This study is organized into eight main chapters. The first chapter contains the introduction to the study. It has a brief account of the importance of fisheries worldwide (both developed and developing countries), and in Ghana. Again it succinctly discusses about the nature of inland fisheries in Ghana and introduces the concept of poverty and vulnerability in small scale fisheries. Chapter one also contains the problem statement, research question, objectives of this study and the structure of the study.

The second chapter contains the description of the study area in terms of its geographical location, traditional leadership, physical environment and religious background.

Chapter three contains a full description of the theoretical approach (SLA) adopted for this study. It briefly talked about the origins of the approach, its main features, and its applicability and success in both academic research and development projects and finally shows how the approach is related to the present study.

Chapter four includes the methodology of the study. It describes all the process this study went through from literature review through, field work and data collection, data analysis to the discussions of the validity and reliability of the data.

Chapter five describes the organization of fisheries and marketing activities in Dzemeni. It describes the division of labour in fisheries, the fishing methods and, fish handling and processing and finally marketing of the fish.

Presentation and discussions of my findings are contained in chapter six. This chapter describes how the various wealth groups (rich, better-off and poor) in the sample organize their livelihoods, discusses the strategies used by the rich to amass wealth and also talked about the processes that lead to poverty and vulnerability.

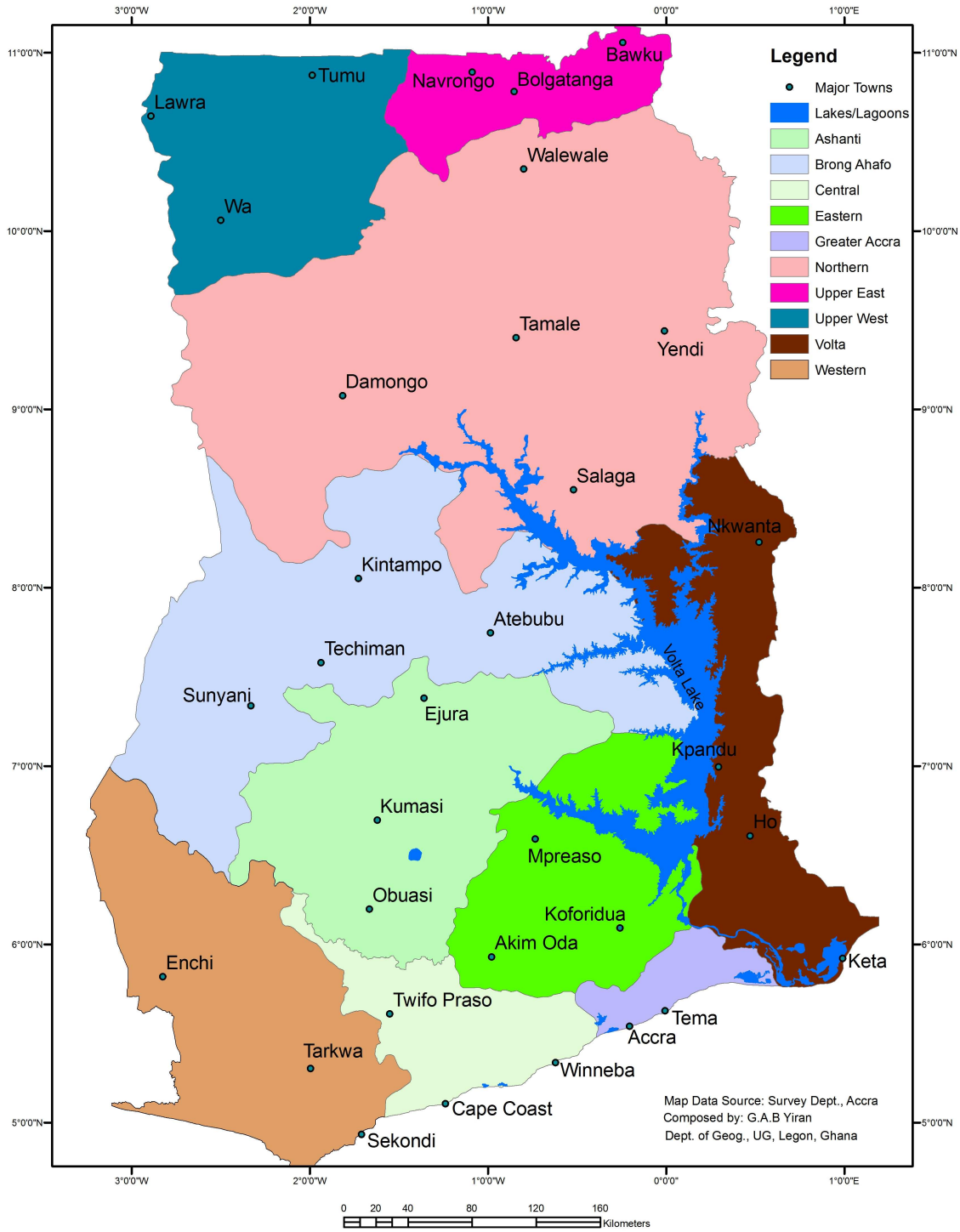
Chapter seven discusses the role of fisheries in wealth creation and poverty mitigation in the respondent households in the context of poverty prevention and reduction.

Finally, chapter eight contains the conclusion of the entire study and the recommendations based on the findings of the study.

CHAPTER TWO: THE STUDY AREA.

2.1 Location

The Volta Lake is an artificial lake in Ghana that came about after the River Volta was dammed at the Akosombo gorge in 1964. The lake has a dendritic shape flowing from north to south. It has an average length and width of 400 km and 25 km respectively with a catchment area of 385,185 km square (<http://www.ilec.or.jp/database/afr/afr-16.html>, International Lake Committee Foundation). Map 1 below shows a map of Ghana with the Volta Lake.



Map 1. Regional map of Ghana showing the Volta Lake and some major towns

The main reason behind the creation of the lake was to store up enough water to generate hydro-electricity. Again it was envisaged that it would boost fishing, improve inland water transport, ensure enough water for domestic and industrial use and for irrigation, etc. The lake covers the territories of many ethnic groups including Ewes, Akans, Nchumurus and Gonjas (Odotei, 1995:55).

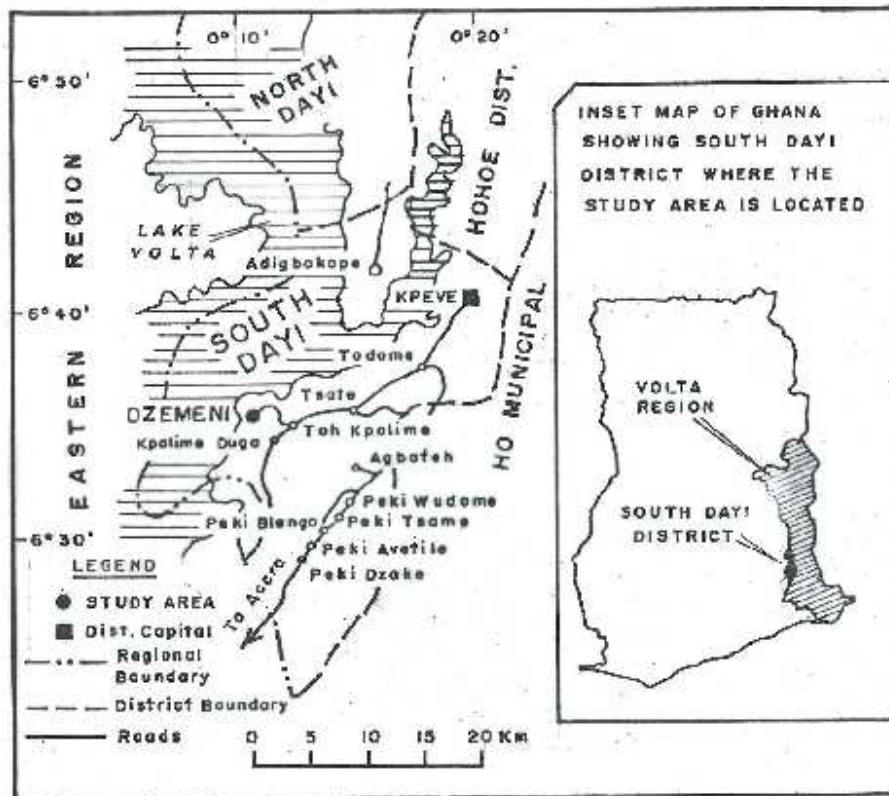
Dzemeni, being one of the areas along the Volta Lake, was originally inhabited by the Tongors who were hunters and farmers about 150 years ago. The Tongors were living there as farmers and hunters until the creation of the Akosombo dam in 1964 which submerged their farms and forests. Consequently, some of them resettled to other parts of the country while others entered in to fishing. After the creation of the dam many ethnic groups like the Fantes, Adas, battors, Sokpes and others also move to the area in order to take advantage of the new fishing opportunities.

There have been instances of flooding in the area and in each case it forces the inhabitants to move their settlements to another location towards hilly areas. In 1975 and 1989 the area experienced some of its worse flooding in which lives and properties like houses, fishing gears, livestock, among others were lost. Ever since some of the victim families have not been able to recover fully from the impact of the floods.

The specific study area is composed of four fishing localities all found within the Dzemeni area namely; Dzemeni town, Attokrokpo (about 5 km from Dzemeni) where there are 25 households, Fantekope (about 9 km from Dzemeni) with 15 households, and Agordeke (about 12 km from Dzemeni) with 20 households. See map 2 and 3. These localities are to some extent distinct from each other by ethnicity. Fantekope is mainly inhabited by Fantes, Attokropo by Ewes, Argodeke by Adas, whereas Dzemeni town had a mixture of all the three ethnic groups and other ethnic groups. Each of this area has a fishing landing site. This area is part of the Volta Region in the South Dayi District. Dzemeni has a population of 3,403 (Ghana Statistical service (GSS), 2000). For the past four decades there has been great increase in the population of the study area. For example, in 1970 the population of Dzemeni was 353 it then increased to 920 in 1984, and to

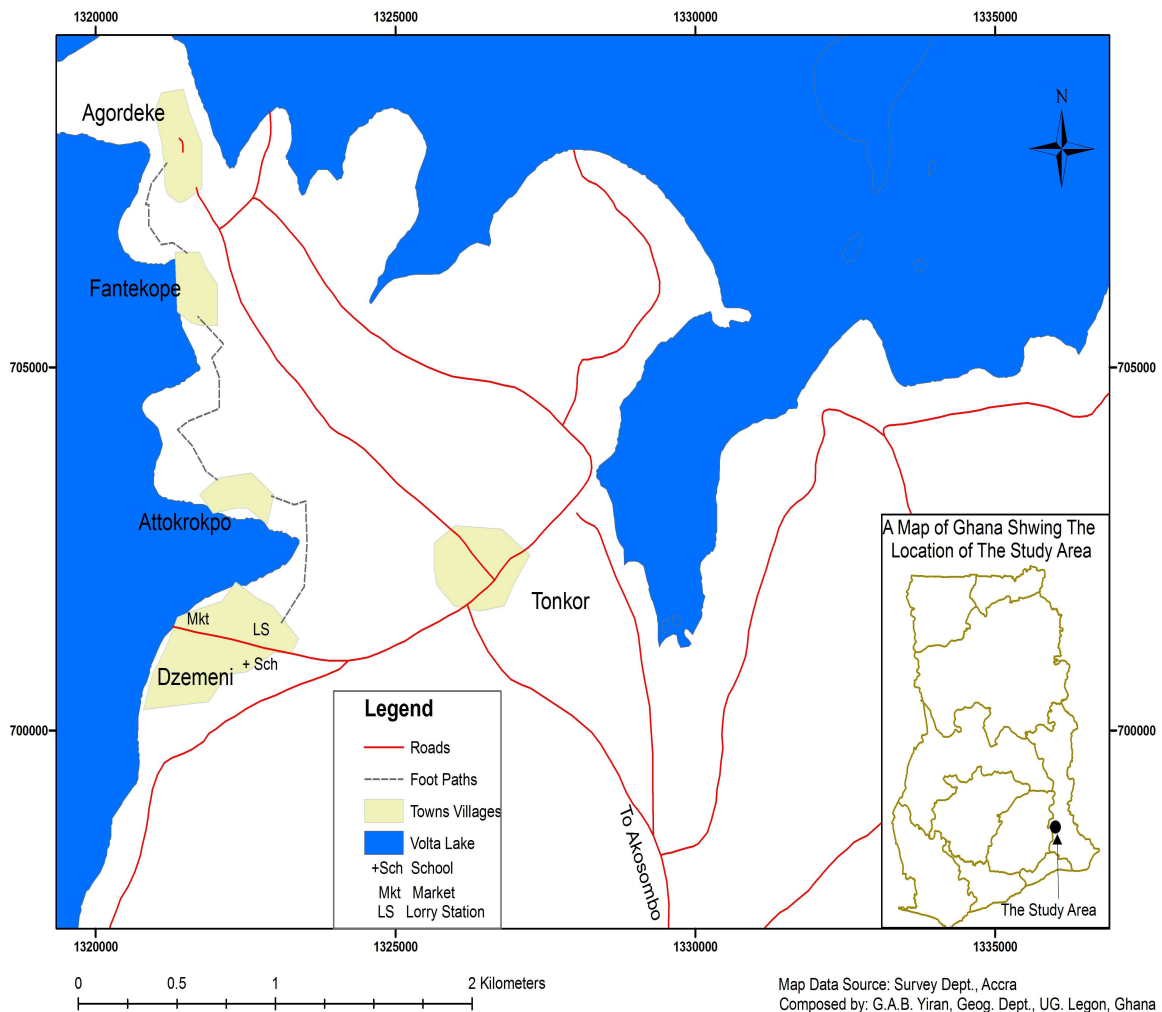
3, 403 in 2000 (ibid). Obviously this great increase cannot only be attributed to natural factors. Migration of fishermen to the area is likely to explain this increase in population over the decades.

FIG. MAP OF SOUTH DAYI DISTRICT SHOWING DZEMENI AS THE STUDY AREA



SOURCE: SOUTH DAYI DIST. ASSEMBLY — KPEVE

Map 2. Map of South Dayi District showing Dzemeni as the study area



Map 3. Map showing all the four locations of the study area

2.2 Traditional leadership

Dzemeni's traditional leadership structure is a hierarchy. At the base is the family head. Above the clan head is the village head man. The village head man is chosen from the family which is believed to be the first inhabitants of the village, the head man must be wise, a successful fisher and in general, he should be someone who commands a lot of respect in the village. The town chief, '*Togbi*' literally, in Ewe, the owner of the town is next in the hierarchy. On top of the hierarchy is the paramount chief, who is the traditional leader at the district level. All these hierarchical authorities have common responsibilities. They are: the custodians of family, ancestral and community land; the custodians of culture, customary laws and traditions including

history; the initiators of development activities in their respective areas of jurisdiction and are also responsible for maintaining law and order which includes presiding over and settling of non-criminal civil disputes

2.2.1 The chief fisherman

Like many fishing villages in Ghana, Dzemeni has a chief fisherman (*Torfia*¹). He is in charge of fisheries related matters both in the community and at the landing sites. The chief fisherman also represents the local fishers in the fishers' association (Dzemeni Fishermen Association) at the national level; hence he is the channel through which the government reaches the entire fishing villages with its policies on fishing. He works with a council of elders, which represent descent groups and/or representatives of other fishers and may or may not have to report back to other community leaders. Also among the important roles of the chief fisherman is to organize fellow fishermen to form a rescue team in times of accident on the lake. He also organizes the fishers to help each other in times of funerals. The Chief fishermen are elected, but generally come from clan or family with a history of successful fishing.

Fishmongers also have a parallel leaders and organizations. For example, the Dzemeni Fishmongers Association has a president. The president must be someone who is seen as wise, experienced in fish handling, tolerant and brave. The president is elected by the members of the association. The president acts between the fishmongers and the local traditional authorities. Also among the duties of the president are providing solutions to problems concerning death and debt collection. If a member of the association dies, it is the responsibility of the president to help the family of the deceased to transport the body to her home town if the deceased is not from Dzemeni. Again, if a fish monger dies, it is the president who mobilizes funds from the other members which is used for cash donations to the family of the dead one at her funeral. A debtor who proves very difficult to pay her debt is reported to the president who has the responsibility of collecting the money. She is very effective in dealing with debts issues since she

¹ The Ewe word for chief fisherman. All local terms used in this study are in the Ewe language.

has the power to influence all the other members of the association not to transact with any member who is deemed as bad among them.

2.3 Physical Environment

Currently, Dzemeni faces most of the serious problems confronting all rapidly growing areas. Sanitation generally in the area is poor. There is rubbish in many parts of the streets and particularly at the lake side. Livestock are often found feeding on some of the rubbish on or along the streets and at the lake side. Basically, there is a minimal provision of amenities such as well equipped schools, potable water as well as recreational centers.

2.4 Religious Background

The major religions practiced by the residents of the study area are: Traditional religion, Christianity, and Islam. The traditional practice (ancestral worship, worship of gods, among others) is the dominant religious practice. It is in most cases the Ewes who constitute the bulk of this population. Christianity is the second dominant religion in the Dzemeni area. In most cases the Fantes, and the Adas form the greater part of the Christian population. The Muslims are found dotted in almost all the sub-areas.

CHAPTER THREE: THEORETICAL APPROACH

3.1 The Sustainable Livelihoods Approach (SLA)

In this research, the sustainable livelihoods approach is used as my theoretical approach (SLA). The SLA is a way of thinking that looks within and around the people in question to find out what is available to them which can be used to better their livelihoods than what they do not have. The SLA uses relationships between humans and nature to show that it is not very simple to separate economic development from environmental consideration and also demonstrates in vivid terms that up to now economic development can lead to environmental degradation and that the greatest consequences are high incidence of poverty (Neiland and Bene, 2004:124)

The Idea of ‘Sustainable livelihoods’ was initially recognized when it was found in the report of the advisory panel of the World Commission on the Environment and Development (WCED) (Neiland and Bene, 2004:124 and Cahn 2002). It was again developed by Chambers; Conway and others in the early parts of the 1990s (Chambers and Conway, 1992). Since then The SLA has been very instrumental in research works, planning and evaluation of development projects. The SLA has been used practically by some researchers who are interested in issues pertaining to poverty mitigation, sustainability and livelihood strategies. For example, Ellis (2000) adopted the approach to study the livelihood diversification and survival strategies of rural households in developing countries; Allison and Ellis (2001) applied the SLA to understand the strategies adopted by small scale fishers who are faced with the problem of fisheries resource fluctuations; and Chan (2002) used the approach to study the livelihoods of the Pacific Islanders. Many organizations and Government institutions have also prepared a method, based on this common concept, for the definition, establishment and evaluation of development programs.

In the case of the fisherfolks in Dzemeni the SLA is used as a framework to analyze the role of artisanal fisheries in Poverty mitigation and Wealth creation.

The idea of a livelihood tries to synthesize the important factors that affect the vulnerability or strength of individuals or family strategies and these are made up of the assets possessed by people, the activities in which they engage in order to make a living and to fulfill other goals such as risk reduction, and the factors that facilitate or inhibit different people's access to assets and involvement in some livelihoods (Allison and Ellis, 2001). In its simplest form a livelihood is a way of achieving a living (Chambers and Conway, 1992:6). According Chambers and Conway (1992) a livelihood is made up of capabilities, material and immaterial assets and the work needed to make a living. 'a livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities while not undermining the natural resource base' (Scoones 1998:5). This means that the many factors and conditions that determine a livelihood can also go a long way to influence its sustainability. The livelihood approach is mostly put in a framework that shows its important components that conform to the livelihoods definition and also showing the relations between them. There are many different forms of the framework. Figure 1 below is a framework of the SLA adopted from Allison and Ellis, 2001 which he applied to understand the living strategies of small scale fishers in lights of fluctuating fishery resources.

A	B	C	D	E	F
Livelihood platform	Access modified by	In context of	Resulting in	Composed of	With effects on
Assets Natural capital Physical capital Human capital	Social relations Gender Class Age Ethnicity Institutions Rules and customs Land and water resource tenure Markets in practice Organizations Associations NGOs Local admin State agencies	Trends Population Migration Technological change Macro policy National economic trends World economic trends Shocks Storms Recruitment failures Diseases Wars	Livelihood Strategies	NR based activities Fishing Cultivation of food Cultivation(non-food) Livestock Nonfarm NR Non-NR based Rural trade Other services Rural manufacture Remittances Other transfers	Livelihood security Income level Income stability Seasonality Degree of risk Environmental Sustainability Soils & land quality Water Fish stocks Forests Biodiversity

Figure 1. A framework of the Sustainable Livelihoods Approach (adopted from Allison and Ellis, 2001:379)

The framework begins with the assets possessed and controlled by the household (column A). The framework plays emphasis on five main asset groups, including physical capital (produced capital or economic capital); natural capital (fish stocks, land, trees.), human capital (labour, education and health), financial capital (savings and credits) and social capital (kinship networks, social relations and associations).

Access to and control of both assets and activities is affected in either a positive or negative way by the policy and institutional context of livelihoods, including social relations, institutions and organizations (column B). This is then affected by external factors, also called the vulnerability context, including trends and shocks that are beyond the control of households (column C). How the people use the assets allow them to construct their livelihood strategies which may either be natural resource based or non-natural resource base (column E). Lastly the framework shows the results of livelihood strategies, which could be positive or negative (column F).

The SLA can be made stronger by including in it issues about authority and power (economic exclusion, class exploitation) as Bene (2001) noted that these factors are among the processes that serve as impediments for individuals and group of people to fully participate in fisheries.

Allison and Ellis, (2001:377) and Bene (2003:951) have observed that about thirty years now many studies on small scale fisheries in the developing nations have directed all their attention on the artisanal fishermen's over dependence fisheries and also the open nature of the fisheries resources which makes it easy for people to enter. All such studies then conclude that the over dependence on the fisheries resources together with its open nature is responsible for resource degradation and poverty.

In most cases the solutions recommended for the problem of poverty and resource degradation is based on the need to develop artisanal fisheries by making it more profitable and also to come up with plans to conserve the fish stock through means such as the restriction of access and to create incentives that could draw present participants from fisheries. The afore mentioned policy solutions have mainly focus on fisheries-sector analyses without any considerations to the role and importance of fisheries in the livelihoods of fishing societies or the economy. The

equilibrium view of fisheries resources also occupies an important position in these policy recommendations. In this case fishing capacity is placed side by side to the productive capacity of the resource in order to get a maximum sustainable yield (Allison and Ellis, 2001:377). This equilibrium view of fisheries resources is based on the equilibrium paradigm of ecology which holds the view that all ecosystems commendable of nature conservation would finally achieve balance by their own if they were isolated from human interventions hence the most important work for nature conservation was to protect nature from man (Scoones, 1999:479). This way of thinking has influenced planning of solutions to neglect critical and important factors of dynamism and variability across time and space without considering critical factor of uncertainty, dynamics and history for studies (ibid). The problems with this equilibrium thinking have led to the coming out of a new paradigm in the field of ecology called the new ecology. The new ecology rejects the equilibrium views and argues that there is no simple relationship between people and environment in the process of environmental change thereby considering the understanding of variability in space and time in the analysis of nature by appreciating complex dynamics, uncertainty and surprise (ibid, 1999: 483). The new ecology also considers the outcome of changes resulting from time in its analyses of nature (Zimmerer, 1994:110). In other words the new ecology is very broad in how it thinks about nature, it considers many factors, like history and any unexpected circumstance that might affect nature and people.

These dominant sectoral and equilibrium views are countered with practical observations. For example, the economic species like anchovies off the Peruvian coast and the elephants in east Africa have showed great changes in population size that could not be explained adequately by any equilibrium mode (ibid, 1994:110). Irrespective of this challenge the equilibrium view point remains widespread in the world view of fisheries (see Bene, 2003:950).

It has been observed that small scale fishers respond in different ways to changes in resource quantity and quality, uncertainties and shocks like diseases, conflict and natural occurrences. According to Allison and Ellis, there has not been any well planned effort to develop approaches to fisheries analysis and management that takes these adaptive strategies into consideration (Allison and Ellis, 2001:378). The SLA is an approach which takes notice of issues of dynamism, uncertainties; shock among others in the analysis of problems hence its adoption for

this study which is focus on the role of fisheries in poverty mitigation and wealth creation in Dzemeni.

3.2 Relating the SLA to the fishing communities

The livelihood strategies of small scale fisherfolks, as for example, those in Dzemeni can be linked directly to the SLA, therefore, the SLA is adopted modified as shown in figure 2 for the purpose of my research. The framework below only represents the major factors that affect the livelihoods of the fisher folks in the Dzemeni and relationship between them.

Livelihood Assets	Transforming Structures.	Vulnerability Context	Resulting in Livelihood Strategies	Composed of	Livelihood outcomes
<p>Natural capital Fish stock, land</p> <p>Physical capital Fishing gears, shops, cars, livestock and other household appliances</p> <p>Financial capital/ working capital Savings, credits and loans.</p> <p>Human capita People, skill, knowledge and education</p> <p>Social capital Links, family and friends ties, social relations</p>	<p>Institutions Rules, customs and norms.</p> <p>Social relations Age, Class and Gender</p> <p>Organizations Local associations</p>	<p>Trends Population and Migration</p> <p>Shocks Seasonality of catches, theft and Natural disasters</p> <p>Economic exclusion</p> <p>Class exploitation</p>	<p>Livelihood Strategies</p>	<p>NR based Fishing, Farming, and Animal rearing.</p> <p>Non-NR based Trade and Local manufacturing and other services</p>	<p><i>Livelihood security</i> Income levels Income stability Level of Shock</p> <p><i>Environmental Sustainability</i> Level of fish stock</p>

Figure 2. The Sustainable Livelihoods Approach adopted to suite the situation in Dzemeni

3.3 Assets

The recognition and appraisal of the assets in the framework is an assessment of what is at the disposal of the people than what they do not have but may need (Chan, 2002). Natural capital can be seen as the natural environment from which we derive the goods and services that makes life possible and it is the starting point for human activities and well-being (Voora *et al.* 2008:8) In the case of Dzemeni, the key natural capital would be the fish stock in the lake and in some cases farmlands since some artisanal fishermen combine fishing with farming.

The fishing gears (boats, nets, hook and lines, smoking ovens for traders etc), shops, cars, livestock and other household appliances represent the physical capital possessed by the fisher folks. These are needed in order to embark on any livelihood strategy (Scoones 1998:8). Without the physical capital natural capital would to some extent lie fallow and may not benefit the inhabitants.

Moreover, the human capital in this context would be people themselves (their labour), their level of knowledge (about their occupation and other things) and their health conditions which are also important for achieving different livelihood strategies. People with higher human capital are often in a better position to recognize a potential lucrative livelihood (Davidsson, *et al.* 2003: 305). Human capital does not only emanate from formal education, but also comes from personal experiences and practical learning from daily economic and informal education, like traditional occupational trainings and experience gained from job (*ibid*: 306).

Savings, credits, loans from families and friends may also represent the financial capital.

The social capital is the family relations, social networks relationships, links with people family and friend ties and membership of associations. According to Scoones, 1998:8, people make use of social capital when achieving different livelihood strategies that need coordinated actions. This means people make use of those they know in several ways when they want to accomplish a livelihood objective.

3.4 Institutions

People's ability to access and use any form of capital is influenced by the nature of institutions operating in their environment (de Hann and Zoomers 2005:35). Institutions are defined as sets of formal and informal rules and norms that guide interaction of humans with others and nature (Agrawal *et al.* 1999:637). Institutions then can be viewed as an important tool that prescribes how things must be done among people of different or similar status, people and natural resources. Institutions are subject to changes because the very people whose activities they regulate may want to change it to their own advantage if possible, hence in this light, institutions can be perceived as interim accord on how to get some activities done (*ibid*). This means that the institutions are allowed to change if they are not producing the expected results. In the case of Lake Volta fishing localities, institutions that affect peoples' access to the assets include: societal rules, norms, and customs; local associations state regulations and community based regulations. People choose different livelihood assets based on institutional arrangements, organizational issues, power and politics (Scoons 1998:8). Social relations, gender, age and class, also influence who have access to what resource and does what with it in Dzemeni. Many livelihoods to a larger extent are pre-determined by accident of birth (Chambers and Conway, 1992:8). A person who is born by a fisher is most likely to be trained as one. Grouping the society for the purpose of studying their livelihoods is very important as it makes simpler the chosen unit of analyses(community, village or household level and study individuals or groups of social actors) and their relationships in relation in terms of differences in wealth, gender, age and others (*ibid*).

3.5 Vulnerability context

The livelihoods of the Dzemeni fishing society in lights of the various assets are basically affected by trends like migration and population, and also shock like seasonality of catches, theft and natural disasters. This means that the people in the area work in their own world of Vulnerability which may be different from other places. Vulnerability is the "exposure to

contingencies and stress, and difficulty in coping with them” (Chambers 1989:1 in (Bene, 2004:14). The degree of vulnerability may vary with respect to factors such as social status, age and class. The poor are often said to be more vulnerable than the non-poor due to their poverty which hinders them from accessing some important facilities like health, education and security (Bene 2004:14). However, Bene (2004) goes on to point that some people may be vulnerable due to the type of their livelihood even if they live in an area where they are similar with the others in terms of income and access to basic facilities. From this point of view, the livelihood available to a person may go a long way to influence the extent of his/her vulnerability to shocks and uncertainties like accidents, death and diseases.

3.6 Livelihood Strategy

All the above components of the framework together with the active role of the people, work together to makeup their livelihood strategies. These are mainly fishing, sometimes combined with farming (crops and livestock) local manufacturing, trade, migration and other services. This means that the people may gain more of their livelihood from any of these activities or may move away and look for livelihoods elsewhere, either temporarily or permanently or combine many strategies together. Different arrangement of strategies may be used in the household based on changes in income, dependency ratio, health conditions and other factors (Scoones 1998:10). Livelihood strategies are dynamic and Scoones argues that this dynamic aspect is indispensable when appraising the sustainability of livelihood options.

3.7 Economic exclusion

In the Dzemeni fishing area economic exclusion can best be described as a situation where individuals or groups are highly limited from taking active part in fisheries due to their inability to acquire the minimum factors of production. In order to enter into fishing one needs to purchase or have fishing gears like a canoe, fishing nets and human assistance (entry cost).

However, financial problems would certainly make this very difficult for the poor segments of the community.

3.8 Class exploitation

Class exploitation in the study area can best be described as the situation where a higher class of the fishing society is deemed as being in an advantageous position of benefiting more from the poorer ones in terms of labor rewards and other social obligations. In this light the rich ones (patrons) take advantage of the short falls of the poor ones to develop an unfair patron/client relationship where they tend to benefit more.

Ultimately all the indicators discussed in the Framework will in the long run bear on the people's income level, income stability, level of shocks and the quality of fish and land resources. It is important to note that the above indicators of sustainable livelihoods are very dynamic in scale, and can be adjusted to both quantitative and qualitative measures of assessment.

CHAPTER FOUR: METHODOLOGY.

4.1 introduction

During my field work which started from May 2007 to August 2007, I understood that research is a process of investigation and a form of self education. On the field I was able to ask questions about issues as and when they took place, participated in some fishing activities and also observed events as they proceeded. These provided me with primary data which supported my literature review. My fieldwork consisted of the following stages: reconnaissance, settling at the study area, actual data collection (participant observation, observations, formal and informal interviews, group discussions). In this chapter I will critically discuss the various stages of my research and how I discussed the data.

4.2 Reconnaissance

I made a 'familiarization visit' to the study area prior to the actual fieldwork. This was done mainly to get informed about the living conditions at the area since I was going to stay there for at least three months. This visit proved to be important to me as I was able to secure accommodation that same day. Being my first time of visiting the area I made the first contact with the bus driver who drove me from Asikuma Junction to Dzemeni. He introduced me to the Dzemeni chief fisherman. Upon making it clear to the chief fisherman that I was a student from Norway and needed to stay in the area for a period of three months in order to learn from them about how they fish and live, the chief arranged a three month accommodation for me in the house of his friend. This was important to me because my land lord and the chief fisherman became my gate keepers. The critical role of these gatekeepers cannot be overlooked in my research work. According to Campbell *et al*, gatekeepers are those who give direct or indirect access to important resources needed to do research, and this can be logistical, human, institutional, or informational. Kearns defines gatekeepers as those who 'open doors' to interact

with others in the chosen site (Kearns in Campbell *et al.* 2006: 99). During my first visit I also had a walk with the chief fisherman to the lakeside and some parts of the town where I saw a lot of fishing activities going on. This suggested to me that shore is a place where many social activities take place. After this I returned to Accra and begun my preparations so I could move to Dzemeni and Start the actual work.

4. 3 Settling in Dzemeni

I moved to the area the following week with my interpreter from Accra, who speaks and understands Ewe. He was a 19- year old Senior Secondary School graduate hoping to enter the teacher training collage. He was living with his parents so I sought permission from them before I sent him to Dzemeni. I had known him since 2004 when he helped me during my undergraduate field work in Nima, Accra where he lives. I chose to work with him because of his Ewe background and his experience in field work. After our arrival we were led by the chief fisherman and the Landlord to present a bottle of Schnapps to the Chief and elders of the town. See plate1 below. This was done to formally inform them about our presence and purpose of stay in the area as leaders of the town. Afterwards we welcome by them to start our work.

My experience on the field with my gatekeepers confirmed both definitions of gatekeepers. The Dzemeni Chief fisherman and my landlord were my key gatekeepers. I gained access to fishers, fishmongers, children and elders through them. My permit to research in the area was facilitated by them. It was also my gatekeepers' advice that I should present some bottles of schnapps to the chief and elders of Dzemeni as a way of informing them of my presence and purpose in the area. The chief and elders then gave me the permission to start my research in the area as a student from Norway who is learning their ways of fishing and livelihoods. These gatekeepers introduced me to quite a number of fishers and fish traders. They helped me identify some rich households. This was very important because some of the fishermen in Dzemeni are migrants who might not want to invest in nice houses therefore trying to identify the rich ones by the type of houses in which they lived could be misleading hence the need to use the gatekeepers to help me identify the rich ones. It was these gatekeepers who led me to the other three locations

(Attokrokpo, Fantekope and Argodeke). I could hardly have located these areas because they were not found on the district map of the area. Both gatekeepers were fishers and their experience about fishing and also their contacts with other fishers and fishmongers were very useful to my research. They could tell me some success and failure stories about themselves and how some fishers or fishermen had prospered from fishing or how some have become poor. For instance my land lord was once a rich fisher but has now become poor due to a failed investment he made into transportation. He invested almost all his capital from fishing into buying a taxi, but the taxi had an accident and was destroyed beyond repairs just after he had bought it. My role as a 'keymaster' developed after I had been introduced to and led to quite a number of households and individuals. When the researcher becomes familiar with his study area and could access the needed information for his research with out the help of his gate keepers, then he becomes a keymaster (Camp-Bell *et al.* 2006, 99). At this point I could go out to the lakeside, household and participate in a lot of activities without the help of the gatekeepers.



**plate 1. The student informing the leaders of the society about his presence by presenting a bottle of schnapps.
In this plate are my gate keepers and some elders of the chief of Dzemeni**

4.4 Methods of Data collection

This study mainly applies qualitative methods which is most suitable for answering the research question and objectives. However, some quantitative techniques were used to support the qualitative approach. The importance of a qualitative research is to expose the nature of the social world through an understanding of how people do the things they do and give meanings to their lives. (Eyles and Smith, 1998:2). This means that qualitative studies seek explanations to phenomena. According to Eyles and Smith, these meanings exhibit the inter-subjective disposition of the world and how much of our experience about everyday life is shared. They claim that an investigation of this nature needs methods which allow the acquisition of 'insider knowledge' through interaction, observations, participating in activities and interviews (ibid). In order to achieve this research needs to be with his informants for a substantial period of time.

4.4.1 Participant Observation

During the fieldwork I was an observer as much as a participant. This was possible to a larger extent because of my ability to speak and understand two (Ada and Fante) of the three languages spoken by the fishing community, I and my field assistant were accommodated in the house of an ex-fisherman who had a lot of contacts in the community and the people perceived me as someone who had come to live and learn from them. They very much appreciated me for this because they claim none of the researchers working in the area has ever wanted to live with them the way I was doing. My legitimate role in the area was one of a 'student' learning from the people. According to Linton (1936) a 'role is the changing aspects of status'. When the individual assumes the rights and duties which make up the status, he is carrying out a role (Linton, 1936:114). Status represents a position in relation to the entire society (ibid: 113). The combination of status and role is composed of attitudes and behavior which the individual must assume if he is to participate successfully in the in the daily activities of the society (ibid, 114). This means every role comes with responsibilities and one's success in that role is judge by how he performs his responsibilities.

As a 'student' in the area, I demonstrated a personal interest in fishing and their way of livelihood as I was always ready to discuss issues relating to fishing and livelihoods with them; I also took an active part in their daily activities such as mending of torn nets, preparation of baits, etc. According to Briggs, 1986, the social roles assumed by the interviewer and the respondent are very important to the success of the interview. My role as 'student' learning about the livelihoods of the people contributed to the success of the interview in relation to the roles assumed by the people as 'teachers'. I always presented myself in a humble manner as someone who does not know and wants to learn and also respected their role as 'teachers'. The people were willing to teach me about the things I wanted to know about in their own categories. This means that I learned from them according to how they classify the events in their own cultural understanding (Aase, 1997:1). For example during the fieldwork, I saw many children working with their parents and other relatives I could have categorized as child labour but on the other hand the people saw it as a form of informal education they are giving to their children and also saw it as a very great thing for their children to help them in fishing. Wadel (1997) reminds us as researchers not to use our own cultural categories when analyzing events because it is not always the case that the respondents are make meanings in the same categories as we do (Wadel 1997 in Aase 1997:1).

Participant observation is to some extent an important element of all qualitative studies and as the name shows, it requires first hand involvement in the community under study (Marshall and Rossman 1995:78). Putting yourself in the social situation helps you to hear, see, and begin to experience and feel reality as the local inhabitants do (ibid). Observation, as put by Mashall and Rossman, involves the organized noting and recording of events, behaviors and things in the field or community.

There was always something to observe, ask about and events to participate in. Usually I would visit the lakeside early in the morning around 6.00. At this time many people fetched water from the lake, others washed clothes, and bath.

In the afternoon between 2.00 and 3.00 the fishers landed their canoes at the lake side. Their catches were bought by the fishmongers, who would be waiting for hours to buy the catches

from their customers (fishers). The buyers did this in order to make sure no one else buy from their legitimate or regular fishers. After selling their catches to the buyers, the fishermen would spend some time at the lakeside to mend their nets, empty their canoes, and also prepare baits for their fish traps. On several occasions I helped them in doing some of their tasks as a way of learning. See plate 2.



Plate 2. The student mending fishing net with some fishers at the lake

In addition to this fishery related activities I took part in other social activities such as attending the evening church service together with my land lord, visiting some of his friends and some friends I made during my stay in the area.

4.4.2 The interview

Again, I conducted some interviews. My key informants were the heads of households and some well informed individuals. I purposely selected them because they were more likely to know about the living strategies of the household and the duties and relationships of each members of the household and the history of the area.

I administered 60 questionnaires in Dzemeni town, Fantekope, Attokrokpo and Agordeke.

I interviewed 10 of the 60 household's heads in Fantekope, 10 in argodeke, 14 in Attokrokpo and 26 in Dzemeni town(The number of households interviewed roughly reflects the size of each community). The questionnaires were semi structured. Because of the complicated nature of interview processes, I adopted Briggs (1986:40) concept of interviewing in my interview process. All the households were chosen at random within each area but with the exception of 13 which were identified as rich because of their numerous assets. I purposely identified these rich households by the help of my landlord. Since he was a member of the community and an ex-fisherman he knew the rich among the community so he led me to them. According to Creswell, 2007, by employing purposive sampling means that the researcher selects his informants and sites for study because they can give an understanding to the research problem and main phenomenon in the study (Creswell, 2007:125). I employed the purposeful sample method in order to make sure I identified some of the rich in the society so I could compare their average standards of livelihood with the others in the sample. Table 1 shows the location and ethnicity of the sample.

Table 1. Location and ethnicity of the respondents

	Dzemeni	Agordeke	Attokrokpo	Fantekope	Total
Ewes	16	3	10	1	30
Adas	7	11	-	3	21
Fantes	3	-	-	6	9
Total	26	14	10	10	60

Source: Field survey, 2007

I interviewed the household heads ‘person- to- person’. Most the interviews took place in the households during evenings. This was the time of the day that I was most likely to meet the family heads in the house and also in a relaxed mood, which was very good for the interview. As put by Briggs, the Social situation is the setting in which the interview takes place is very important to determine the success of the interview. This includes time and place of the interaction. This was considered in my work because an interview would proceed differently at the wrong place and time (Briggs, 1986: 41). However, few interviews took place at the lake side. However they took longer time than the ones in the households due to detractions at the lake side, such as attending to customers or struggling to get catches. For ‘person-to-person’ interview the researcher needs informants who are not hesitant to speak and share ideas, and also the researcher needs to determine a setting in which this is possible (Creswell, 2007:133). The households I interviewed were to a very large extent willing to speak and discuss their life with me. The household heads would only refuse to have the interview with me when they were too occupied with tasks such as cooking, attending to their children, attending funerals etc. their

willingness to have the interview with me was made very smooth by my gate keepers who accompanied me to some of the households. Also the setting that I chose for the interviews also made it a success.

Interactional goals also played an important role in the interview process (Briggs, 1986: 41). This is what inspires each of the participants to take part in the interview. The people being informed that I was a studying in Norway believed that I would definitely go back to Norway with the information about their livelihoods. This was a very great motivation for them to inform me about their livelihoods knowing that the outside world would hear and know about them. I was motivated to interview these people because they were my key informants; they were the very people who were going to provide me with the information to answer my research questions.

The message form, according to Briggs, is made up of the signals (both auditory and visual) that serve as sign transporter in interviewer and respondent's interactions. Being brought up in a particular speech community gives the language learner with many advantages to learn and understand the meaning of that language in question. When a researcher moves away from his or his own native speech community to meet a new group of people, he finds it difficult to communicate effectively (Ibid, 39). This same problem was obviously going to arise as I was going to work in a different ethnic group given my background as an 'Asante'² working in an Ewe land. In an attempt to minimize this problem I chose my field assistant because he was an Ewe. However, he was doing well but later I realize that was not good enough when I learnt he was born and brought up in Accra and was not informed culturally about the area. This however, made me stop working with him. I then used my landlord instead since he was well informed (culturally and socially) about the area.

A brief historical account of the area was got from the Chief fisherman. I also conducted an interview with the Ministry of Fisheries' Recording officer (Mr. Peter Dumakor) of the area about the sustainability of the fish stock in the lake.

² One of the numerous tribes in Ghana.

4.4.3 Group discussion with women and children.

My landlord (gatekeeper) helped me greatly with his connections to recruit some women for the discussion. These women were mainly fishmongers. These discussions with the women took place at the lakeside between 11.30-1.00pm while they were waiting to buy catches from the fishermen. The discussions were informal and centered on their daily activities as fishmongers, mothers and wives and their live history.

I was able to gather some children for another group discussion by organizing a movie show in the house of my land lord for them. The news about the show was spread by an eleven year old son of my landlord. By 7.00 p.m. The house of my landlord was full of young boys and girls between the ages of 8 and 14. These children were from all kinds of households. I then organized about four different groups and had the discussion with them in an informal way. I discuss with them about their daily activities, their future aspirations and others. There are a number of anti-child trafficking projects going on at the study area trying to raise the awareness of trafficking of children for labor exploitation. As a result of this the people, especially those who make use of such children, are very reluctant to give out any information about child labor or allow their children to be interviewed. The movie show gave me the opportunity to have discussions with many children, some living with their own parents and others with their relatives.

4.4.4 Other sources of data.

Secondary data was also collected from appropriate sources including books, journals, newspapers and activities, both published and unpublished.

4.5 Data analyses

I mixed the qualitative and quantitative data in my analyses. Putting the two data sets together provides the researcher with a better understanding of the problem than if either datasets had

been used alone (Creswell and Clark, 2007:7). Mixing of data occurs in three ways: merging the two datasets together by bringing them together; connecting the two datasets by having one built on the other and lastly by embedding one dataset within the other so that one gives a supportive role to the other (ibid). In this research I have used the quantitative data to support the qualitative data. I used case studies and direct statements of the respondents to present and analyze the qualitative data and then I used descriptive statistics mainly in the form of frequency and percentage tables to present the Quantitative data (which was used to support the qualitative data). Quantitative research has been criticized on the grounds that: (i. it is weak in understanding the setting in which the people talk. ii. The voices of the participants are not directly heard and iii). The personal biases and interpretations of quantitative research are seldom discussed (ibid: 9). Qualitative research however can make up for these shortfalls if applied appropriately. On the other hand, there is the argument that qualitative research is incomplete due to the personal interpretation made by the researcher, the potential bias caused by this and the difficulty in generalizing findings to a large group because of the limited number of participants studied (ibid). The above discussions clearly show that each approach comes with its own weaknesses; I therefore believe that the combination of both approaches to some extent improves the quality of the data analyses.

4.6 Validity and Reliability of data.

Justifying the correctness of the data and whether or not it has been gathered in a reliable way leads to answering the following important questions: “*during or after a study, qualitative researchers ask, did we get it right or did we publish a wrong or inaccurate account?*”(Creswell, 2007:201). According to Creswell (2007) In order to provide good answers to these questions researchers need to scrutinize themselves with respect to the conditions that prevailed during the research, the participants and consider all types readers. He also considers ‘validation’ in qualitative research as an endeavor to assess the correctness of the findings, as best described by the researcher and the participants (Creswell, 2007:206). Validity in interpretative research is a conclusion of the goodness of a research work given all the circumstances under which the research took place (Angen, 2000:387). Reliability is described as the stability of the findings

(Whitter *et al.* 2001:523). This relates to whether the findings are dependable or not in lights of how the data was collected, when it was collected and from whom it was collected.

A challenge that relates to reliability and validity in the data gathering emanates from the seasonal variations in fisheries. The fieldwork was carried out from early June to the later parts of August and as a result, the observation of the difference in the livelihoods of the people during the peak season (Late August to November) could not be made adequately. However, getting to the end of August there were relatively good catches in the area and I was able to get about 5 days of experience of activities in the lakeside, households and the market. It is obvious that an extension of the fieldwork to cover the peak season or beyond could have improved my understanding how people organize their activities in the peak season. With regards to the reliability of the data, an extension of the fieldwork could have made it possible for me to collect more information about the sensitive issues like child labor and trafficking. As pointed out by Fetterman, 1998, working with people regularly for long time is what gives ethnographic research its validation and vitality (Fetterman, 1998:46). It takes time to understand how a group of people conduct their livelihood, and this appears to be one of the setbacks in qualitative research.

Conducting the fieldwork in the lean season was advantageous to the extent that the people had more time to talk to me and the gatekeepers also had more time to help me. During the bumper catches the people (household heads) would be very busy all day long and would like to take a rest at night, and an interview would have been a bother to them.

My limitation in Ewe, being one of the three languages spoken in the area is another limiting factor for the reliability and validity of the data. This might have influenced the way the information was collected in Ewe (the quality of the information and the way the data has been interpreted and analyzed). This problem could come from both interpretation of language and the misinterpretation that occur due to cultural differences and background. In order to limit the effects of these problems, I used one of my gatekeepers and the assistant from Accra as interpreters.

One of the gatekeepers was very important for the outcome of the fieldwork. He was an ex-fisher with an adequate knowledge about fishing, and had many contacts. Most of the people trusted and respected him and as a result were willing to talk to me about many issues since I was with him. When I started interviewing other informants in Fante and Ada (which I could speak and understand) without the help of any interpreter, I understood that the information gathered in Ewe could be seen as considerably reliable. The answers I got from Fantes and the Adas to the questions in the interview guide were given in a similar way as those from the Ewes that were interpreted to me.

I encountered some problems with my interpreter (from Accra). He tries to 'control' the interview because he became very familiar with the questions in the questionnaire. Sometimes when he was not satisfied with an answer from a respondent, he would not even interpret it to me but rather go on to ask another question that he thought could give him a satisfactory answer. At times he would not give me all the information that the informants had given because he might think of it as irrelevant or see it as a cliché. However, I discussed these problems with him and he understood his position as an interpreter. I also discussed the materials we gathered and the persons we interacted a lot with my gatekeeper. His explanations to events, statements and phenomena had a very positive influence on the outcome of the fieldwork.

The way I selected the sample also affected the relevance and representativeness which is also related to the validity of the data. As I have already mentioned, it was my gate keepers who led me to the households that were rich according to the standards of the area. It was possible that the heads of the households would try to meet the expectations of being selected as rich by probably exaggerating their assets or income because I did not have the time to see all the assets they mentioned as their possessions. This could have an impact on the accuracy of the information about income and assets, personal and economic issues.

It is clear from the above discussions that every research work has biases which affect its validity and reliability. It is therefore the task of the researcher to acknowledge this fact in order to be honest in the presentation of his findings.

CHAPTER FIVE: FISHING AND MARKETING ACTIVITIES IN DZEMENI.

5.1 Division of Labor

Like in many livelihood activities, division of labor is an important aspect in the organization of fishing activities. In small-scale fishing the kind of division of labor that exists is gender-based. Men are mostly responsible for the fishing while women are involved in fish processing and trade (Ellis and Freeman, 2005:265, Overå, 1998:8). Similarly, in the study area, the men go to fishing (getting the fish from the lake with the available fishing methods) while the women take charge of preparation and processing of the catches for marketing.

5.2 Fishing gears and fishing methods

Fishing in Dzemeni is basically done on a small scale level with the use of traditional implements such as: canoes (*evu*), gillnets (*edo*), hook and lines, basket traps (*for ha*), net traps (*edo ha*) and bamboo traps (*pampro ha*), (See plate3 (a-f) below). Some of these are produced locally for example the canoes which are made with boards of wood by local carpenters, basket traps which is also woven by the local people, and bamboo traps. However, the sticks of bamboo are brought from Hohoe in the Ho District to be sold at Dzemeni. Some but few of the canoes are powered by outboard motors. The fishing nets, outboard motors and the hook and lines are bought from Accra by the fishers others also buy them from shops in Dzemeni. There are many outboard mechanic shops in Dzemeni for repairing and sales of outboard motor parts. There were a total of 96 canoes in the sample and 30 (32%) of these were powered by outboard motors.



a. Basket traps



b. Net traps



c. Bamboo traps



d. Hook and line



e. Workers building a canoe.



f. Gill net set in the lake

Plate 3(a-f). Fishing gears

Fishing gears can be grouped into three development stages with a associated high level of production: traditional fishing implements (simple hook and line, spears traps etc), (modern fishing implements (hydro-acoustic equipment, global positioning system etc) and a mixture of these (Jul-Larsen *et al.* 2003:76). Like in many African Fresh Waters (ibid), Modern sophisticated fishing equipment is not used in the Dzemeni fisheries. Fishing in the study areas is done on a small scale basis. The common fishing methods in the area include: Gill net fishing (*Atigya*), Basket/net trap fishing, (*For/edq ha*), Bamboo trap fishing (*Pampro ha*). These fishing methods vary with season.

5.2.1 (Atigya fishing)

The atigya fishing is one of the commonly used methods employed by the fishers. With this method a canoe (Evu) and a gill net is needed. The gill net is made of nylon thread with a mesh size between 1 and 3 inches. The fishing net is laid under the water with twigs placed around it which is believed to create good condition needed to trap the fish. The net is usually left under the water between three to seven days before it is emptied of any catches. The most important

type of fish associated with this method is the *Tillapia* locally known as *akpa*. The atigya fishing takes place mainly from February to May. This kind of fishing is carried out in both near and off shore waters.

5.2.2 (For/ edo ha fishing)

The equipment used here are the basket or net traps and a canoe depending on where in the lake one wants to set the trap. Bait is always needed to set this kind of trap. The bait is made from corn doe. This is prepared by boiling and stirring a paste of the doe whiles on fire till it becomes solid or can be called '*banku*'. The traps are put under the water with the baits in them and are left under the water for a day or two before the fisher goes to visit them. This method is used all year round but mostly in the fishing season. This type of fishing catches any kind of fish possible.

5.2.3 (Pampro fishing).

The main equipment needed for this type of fishing is the bamboo pipes. A canoe is also needed as one needs to travel far on the lake to set them. The bamboo pipes are strategically placed under the water for 2 to 4 days before they are visited by the fisher. This type of fishing only catches the *Chrysichthys walkeri* (Clarioteidae) spp. locally called *Bloblo* which likes the conditions created by the bamboo pipes. This type of fishing takes place all year round but more extensively from May to September.

5.2.4 Hook and line fishing.

This is made up of a line of about of about 100 meters and a hook. The fishers use juvenile fish as the bait on the hook. The hooks are set and left in the water overnight before they are attended to. This kind of fishing also takes place all year round but more extensively in the months of January, February, March, October and November.

5.3 Production- distribution chains

In fishing, investments mostly take place through many chains of production and distribution to reduce the uncertainties of fish supply for the distributor, and market access for the producer (Abraham and Platteau, 1987 in Jul-Larsen *et al.* 2003:46). There are three common methods of linking production and distribution: 1. *'the boat owner invests in transportation and establishes his distribution network in order to control more of the market chain, 2. large actors of the market invest in fishing equipment so to secure and increase their own supply of fish, 3. the fisher or the boat owner and trader enter into an agreement where the fisher gets a steady market outlet (often get equipment on credit) and the later gets fish in return (frequently on credit)'*.

The last two of these strategies are similar to what pertains in Dzemeni. In the case of Dzemeni the canoe and the simple fishing gears are either owned by a fisher or a fish trader. When the canoe owner happens to be the fisher at the same time, he goes to the lake regularly with his crew. It is a very common phenomenon to see children between the ages of 7 and 14 as crew members. The size of the crew varies with the size of the canoe and the fishing method, usually from 2 to 6 fishers. Every canoe has a leader (*evu tor*). The 'evu tor' leads the crew (*Vu me vio*) when on the lake and also see to the maintenance of the fishing gears (mending of damaged nets, repairing of canoes and outboard motors, among others). These activities are the sole responsibilities of men. The canoe owner can either be a man or a woman but when the canoe owner is a fish trader, she finds a fisherman to run the canoe on agreement to be the only legitimate buyer (they buy the catches very cheap about three times lower than what an ordinary buyer would pay) of catches from that canoe. In this case the canoe owner does not go to fishing but undertakes 'monitoring' task such as being at the shore long before the fisher lands with the catches so that he does not sell them to other fish traders with better price offers. Some canoe owners also pay the crew with 1/3rd of their catches. Thirty-five (36%) of the 96 canoes possessed by the 60 sample households belonged to women.

5.4 Fish handling at the lake.

The fish is counted by the crew and the trader who is ready to buy to ensure fairness before the trader buys the fish. The buyers are sometimes the relatives of the fisherman whom they buy the fish from or the employers of the crew (boat owners), or legitimate customers of the boat owner. Some are often the wives of the fishers in this case they do not buy but take control of the processing. Plate 4 below shows the act of counting fish at the lake by a fisher and his legitimate customer.



plate 4. Counting of fish by a fisher and a fish trader. This plate shows a fisher who owns the boat himself but he is morally obliged to sell his catches to this particular trader since he go to her at time for financial assistance (such as interest free loan).

5.5 Fish processing.

The processing of the fish takes place both at the lakeside and in the compounds of the fish mongers. The common processing methods are smoking, salting, drying and refrigeration. Smoking with the ‘chorkor oven³’ is a widely used method. There is a big supply of firewood for smoking the fish which means that fuel for smoking the fish is not a problem for the fish mongers. The fish is packed into baskets after it has been smoked, salted or dried. Plate 5 shows fish being smoked on the chorkor oven. The firewood is brought from Kaira near Dzemeni. About thirty sticks of firewood cost two (2) new Ghanaian Cedis (2 US dollars). Selling of the firewood is also the source of livelihood for the sellers.



plate 5. Smoking of fish with a Chorkor oven in the compound

³ This type of fish smoking oven was invented by the fish mongers of Chorkor, Accra, hence its name Chorkor oven.

5.6 Marketing of fish.

Marketing, from the social point of view is a basic societal process which essentially and inherently takes place within a society to facilitate the exchange of goods and services (Sweeney, 1972:7). The market place is both the place for social interactions and where the marketing process takes place. It can be seen from the above definition that markets play both economic and social roles in every society. The market place is not only a place for buying and selling but also a place where people meet and interact with both new and old people in order to get new customers, and new marketing ideas or marketing information.

Dzemeni is a market center where fish trading is an important economic activity. The market is opened on Thursdays and Fridays. Other fish traders from some parts of the country such as Accra, Kumasi, Oda and Techiman come to the place on these market days to buy fish from the local fishmongers. However, there are some men and boys who trade in livestock, firewood and charcoal and also work in the market as truck pushers, and porters, (*Agbave tsorla*). Marketing of the fish is in the hands of women.

CHAPTER SIX: FINDINGS AND DISCUSSIONS

6.1 wealth indicators

Asset possession, income and household labor capacity were used as the main indicators of wellbeing. Wealth gives another dimension of wellbeing. Two people who have the same income may not be as well-off if one person has more assets. Household members differ in their productive capabilities. For instance, age and sex or health may limit one's capacity of labour input. On the contrary, consumption needs are more evenly distributed among household members than production capabilities. Therefore, the wellbeing of the household will also to some extent depend on the relationship between its productive potential and its consumption needs. Hence these three indicators will give a better understanding of the wellbeing of the people than by using only one or two of them.

6.2 Household Asset valuation.

In this research, asset means the things owned by the people. The main items here include fishing gears like canoes, fishing nets, ovens, hook and lines traps and outboard motors, small business, land, livestock and consumable goods. I valued all the assets of the sampled households at their net realizable value, which is the current market value of all costs involved with disposing or redeploying them. I then subtracted all the debts owed by the respondents from their gross assets value to get their net total asset value. The assets were valued in US dollar term. I used the cedi/dollar exchange rate of a dollar to 10,000 cedis as at August 2007.

6.3 Household income estimation

Income (money earned through employment and investment) is difficult to measure accurately in an area like Dzemeni as a result of poor household record keeping. In order to estimate the total

monthly income of the respondent households, I summed up all the income received by each working member of the respondent household over a period of one month. The respondents found it easier to estimate their income on daily and weekly basis than on monthly basis. As a result I collected their incomes on daily or weekly basis and then multiplied it by the appropriate factor to come out with the total monthly income. The income came from sources like fishing and its related activities, fish mongering, small business, farming, livestock production and wage labour as discussed in the following chapters. Like the assets the total incomes received by the respondents were valued in US dollar term. I used the cedi/dollar exchange rate of a dollar to 10,000 cedis as at August 2007.

In order to find the per capita income of the various households in the sample, the total monthly income of the respondent households was divided by the number of people in the household. In other words the per capita income shows how much each member of the household receives if the monthly income is divided equally among them.

6.4 Household Composition.

Household members are different in terms of their productive capacities (maximum possible output) (Aase, report no. S 8/86:36). Specifically age and gender limits a person's capacity of labor input, because of traditions, physical abilities and social relations. Obviously a boy of 6 years does not have the same ability and strength to work as a grown-up man of about 25 years. For example in the Dzemeni area, like many other places in Africa, women do not go to fishing on the lake. Only men do this. Again a nursing mother would have to spend more time on taking care of her baby than a mother who is not nursing a baby.

Consumption needs on the other hand, are almost equally distributed among household members than productive capacities. For example a 3 three- year -old child with no productive ability still needs to be fed and clothed, a nursing mother has the same consumption needs as a woman without a baby. Whether or not a person has a productive capacity she or he needs to eat and put on clothes. Therefore, the material well- being of a household to some extent would depend on

the relations between its productive capacity and its consumption needs (Ibid: 37). This means that a household with many producers and relatively few consumers will be better off than a household with many consumers and few producers.

In theory, it is possible to calculate a household's labor capacity through a producer/ consumer-ratio (P/C ratio) by measuring all the household members according to their assumed labor capacity and consumption needs. However, such a ratio would never be perfect because it omits individuals' qualities and even the duration of working hours. This situation is important to be considered in assuming that the relation between consumers and producers in the household has some effects on well-being.

From the empirical evidence in my sample and my own personal experience on the field, I put down the following assumptions in table 5 for estimating the producer/ consumer –ratio for the various households in the Dzemani area. The critical values were age (16-59 working age) and gender roles (a woman with a baby below 6 years, irrespective of age).

Table 2. Basis for estimation of Producer/Consumer ratio

Household member category	Productive capacity	Consumption needs
Man, 16-59 yrs	1.0	1.0
Woman with baby	0.3	1.0
Woman, 16-59yrs, no baby	0.6	1.0
Both sexes, 60-70yrs	0.1	0.8
Aged both sexes > 70yrs	0.0	0.5
Adolescence, 12-15yrs	0.4	1.0
Child, 7-11yrs	0.1	0.75
Infants <7yrs	0.0	0.5

Source: Adopted from Aase.

According to the assumptions in table 2 the capacity of productive labor of a household can be expressed in terms of ratio ranging between 1 and 0. This is expressed mathematically as the *summation of the productive capacity of every household member divided by the summation of the consumption needs of every household member*. A high ratio means that the household has much labor potential in comparison with its consumption needs. A low ratio means that a household has few bread earners and many dependants. In calculating the P/C ratio I did not factor in the out put of unpaid activities such as child care, housekeeping and the like because traditionally such activities are not valued in economic terms.

As is showed in table 3 and 4, the producer/ consumer-ratio that I derived for the various households in the Dzemeni area revealed that the rich households have relatively high producer/ consumer ratio with an average of 0.61. This can partly be explained in terms of their ability to hire and live with people who help them with their fishing activities and other income generating activities. See case study 2.

The consumer/producer ratios for the better-off households are fairly high with an average of 0.50. This is also partly due to their ability to live and take care of their own children and in some cases their relatives. See case study 3.

The poor have relatively low producer/consumer ratios with an average of 0.42. This is due to their inability to bear the responsibility of living and taking care of all their children and other relatives. Here is a case of Teteh (from the poor group) explaining why he has a low P/C ratio.

Case study 1

Teteh⁴ (45) is an Ada. He has 200 pieces of hook and line and one local oven for smoking fish and a household size of 5. According to Teteh, he has 6 children with his wife but they now live with three of them, a girl (9) and two boys (7, and 5). Teteh claims that he gave out his other three children (three boys aging 11, 13 and 15) to be fostered by some rich people three years

⁴ All names used in the case studies are fictitious names for the sake of concealing the true identity of the respondents.

ago since it was difficult for him to provide for all his children. He says it was better to give out his children because he has few fishing gears and it would be useless to keep all his children with him because they would contribute nothing to his catches but rather over burden him with their needs (basically food). Tete believes that by giving out his children to be fostered by the rich, they would be helped by the rich in the near future to enter into fisheries or other livelihoods.

From this case it can be seen that Tete was compelled to give out his three children to be fostering for two main reasons. He gave them out in order to reduce the economic burden on the entire household. Another reason why he gave them out was that he could not use them to increase his catches as a fisher because of his limited physical capital (200 pieces of hook and lines and a local oven) hence he thought it wise to give them out to the rich since they can assure his children a better future.

6.5 Wealth groups.

The respondent households were ranked as rich, better-off and poor based on the valuation of assets, income and P/C ratio. In this sense poverty or wealth is seen in relative terms. See table 3. Therefore, I used the average standards of the rich (in terms of assets, income and P/C ratio as the starting point of the categorizations of the wealth groups. With this kind of assessment the poor are those who fall adequately far below the average standard of the rich and the better-off group falls between the rich and the poor. Table 4 shows the mean figures of the value of assets, monthly income per capita and P/C ratio of the various wealth groups in the sample population.

Table 3. Wealth characteristics of the sampled households

Households	Value of Assets(\$)	Income per month(\$)	Household size	Monthly Income per capita(\$)	Producer/consumer ratio
1	76139.6	8267.9	15	551.2	0.721
2	16225.2	671.8	9	74.6	0.674
3	12844	733.8	15	48.92	0.293
4	12291.5	826.8	7	118.1	0.633
5	11700.4	930.1	10	93.01	0.905
6	11478.5	599.4	12	50.0	0.514
7	9402.2	815	21	39.0	0.614
8	8393.1	661.4	15	44.1	0.685
9	7534.6	620	9	68.9	0.622
10	7321.5	690	17	40.5	0.478
11	5501.6	413.4	7	59.1	0.600
12	5497.9	775.1	7	110.7	0.640
13	5458.2	465	11	42.2	0.551
14	4327.1	93	7	13.3	0.520
15	3864.3	227.3	7	32.5	0.403
16	3613.1	220	6	36.7	0.390
17	3331.2	210	7	30.0	0.592
18	3259.9	250	7	35.7	0.366
19	3000	255	8	31.8	0.654
20	2243.4	300.7	10	30.1	0.671
21	2180.5	175.7	10	17.6	0.593
22	1914	119.9	7	17.1	0.443
23	1728.1	103.3	8	12.9	0.544
24	1716.2	289.3	15	19.3	0.432

25	1637.8	103.3	5	20.7	0.345
26	1620.3	186	8	23.3	0.650
27	1497.7	227.3	13	17.5	0.553
28	1387.3	165.3	10	16.5	0.432
29	1314.1	217	6	36.2	0.655
30	1291	350	25	14	0.450
31	1187.9	155	10	15.5	0.500
32	981.5	196.3	7	28	0.543
33	964.4	258.3	10	25.8	0.441
34	960.8	303.3	14	21.6	0.543
35	960.8	303.3	14	21.6	0.501
36	911.3	72.3	3	24.1	0.343
37	782.7	341	18	18.9	0.432
38	702.7	103.3	8	12.9	0.425
39	684.7	82.7	4	20.7	0.501
40	677.7	62	5	12.4	0.574
41	648.4	93	6	15.5	0.381
42	628.2	72.3	7	10.2	0.453
43	566.1	72.3	5	14.5	0.532
44	564.6	161.7	8	20.2	0.70
45	557.2	175.7	8	22	0.503
46	492.7	60	5	12	0.640
47	475.1	61.3	9	6.8	0.441
48	423.7	22.7	4	5.7	0.523
49	423.5	52	4	13	0.311
50	396.6	59.3	10	5.9	0.345
51	390.3	50.7	9	5.6	0.490
52	351.3	65.3	6	10.8	0.272
53	340.8	53.4	8	6.7	0.432
54	307.8	41.3	4	10.3	0.471

55	301.6	85.2	6	10.8	0.431
56	301.6	61.0	10	6.1	0.435
57	288.1	41.3	9	4.6	0.371
58	274.8	72.3	7	10.3	0.410
59	262.4	16.5	12	1.2	0.380
60	61.3	10.3	5	2.1	0.300

Source: Field survey, 2007.

Green (household 1-13) - rich 13(22%)

Yellow (household 14-45) - better-off 32(53%)

Red (household 15-60) - poor 15(25%)

Table 4. Mean characteristics of the various wealth groups

	Rich	Better-off	Poor
Mean Asset value(\$)	14,599.1	1,615.8	339.4
Mean monthly income(\$)	1,266.9	185.8	50.2
Mean monthly per capita income(\$)	103.1	21.5	7.5
Mean P/C ratio	0.61	0.50	0.42
Mean Household size.	12	9	7

Source: Field survey, 2007.

6.6 The Rich group

The rich group is the most advantageous economically and most influential politically. They have more and better fishing gears than the other wealth groups. Consequently, they are able to fish relatively on large scale. They often combine many sources of income as compared to the other groups. A greater number of the rich fishers /fish traders combine fishing with other livelihoods such as being involved in farming, livestock rearing, keeping a fishing gear shop, running a bar, transport business, running of corn mill among other things. Plate 6 below shows a shop of one wealthy fisher.



plate 6. Fishing gear shop owned by a rich fisher

In addition to these multiple occupation by the rich, they also strategically organize their activities seasonally. In the fishing season (August-November), they undertake fishing by putting in much resources and energy and then run their other activities (farming, animal rearing or trading) on a rather smaller basis. During the off season (January – June), they focus on the other activities more than fishing. They do not switch entirely from fishing. From the sample all members of this group are able to feed their households three times daily during the lean season and are also able to give their children good education. The poor who has no capital to enter into fishing on their own are basically those employed by the rich ones as fishers, helpers in fish processing, shop keepers, corn mill operators (staff) and others. Some of these employees live in the same household with the employers and are provided with accommodation and food. This means that they are part of the household. Interviews with such workers of the rich revealed that they have dreams of setting up their own fishing business in future because they usually enter into a contract to serve their masters for some years, usually 3-5years in return of a sufficient capital. As a result of the characteristics of the rich group they have the highest value of assts, income and per capita income as can be seen on the table 3 above. Here is a case of one Konu, a rich man, and his livelihood strategies.

Case study 2

Konu has a family size of 15 and he is 45 years old with a 40 year-old wife. He has 6 children with his wife aging between 8 and 22. Konu also lives with 7 other people of whom 2 are his relatives and the rest his workers. These 7 people do help him in his fishing and other livelihood activities. The fist and second children of Konu are in the university and Polytechnic and the university respectively. His third child is also in the Senior High School in Akosombo and the 4th child is also in Junior High School in Dzemeni. His last two children are both in the primary school in Dzemeni but they are attending a private school which is said to be more expensive and better than the Government school.

Konu has 8 medium size canoes(service) all powered by an outboard motor; 80 bundles of fishing net; 10 cows; 11 sheep; 6 goats; three' chokor smokers' for smoking fish; one deep freezer; a corn mill machine which he described as having 6 horse powers; and a fishing gear

shop. According to Konu, he makes sure all his 8 canoes and his nets are always in good conditions during the fish season in order to fish effectively. Again during the fish season he stocks his fishing gear shop fully since it is the time when people buy mostly from the shop. According to him, in order to do this effectively he relies on his bank deposits and some times he sells some of his livestock but replaces them at the end of the fishing season. He uses some of the money he gets from fishing during the fishing season to buy dry pepper and cereal like maize. He stores these products and sells them mostly in the lean season when he is most likely to make a profit as high as 50%. According to Konu, only two or three of his boats and a few bundles of his fishing nets are used for fishing during the lean season. He does this in order to avoid the risk of wasting fuel and energy. During this time he gives more attention to his corn mill machine which is operated from 7am to 10pm every day. During the fishing seasons the machine is only operated from 8am to 5pm daily, excluding Sundays. He also has 6 acres of farmland in the Afram plains where he produces yam during the yam season for commercial purposes.

From Konus's case, it can be seen that the quality and value of his assets are not the only factors responsible for his wealth but also how he strategically use his wealth to manage his livelihoods. All the rich respondents have similar patterns of organizing their livelihoods.

6.7 Better- off group

In contrast with the rich group, the better-off groups do not have the means to hire labor and are forced to use their own children and children of relatives (boys between the ages of 6 and 14) to help them fish at the expense of their education. During my discussion with some of them, they claim they must use their children to fish since they have no one to help them. Some of the members in these groups may pick one of their children and educate him up to the Junior high level just to get at least one literate in the family. They usually have one or two canoes and few bundles of fishing nets. Plate 7 below shows a fisher from the better-off group fishing with his children.



plate 7. A man from the better-off group fishing with his children

Those in the better-off groups are food secure to a larger extent and less vulnerable than the poor. Below is a case about a better-off member, Ebo and his livelihood activities.

Case study 3

Ebo, 50, is a fante who lives in Fantekope. He migrated to this area from Winneba 20 years ago. From the sample, Ebo belongs to the better-off group. He possesses one small size canoe (without an outboard motor), 6 bundles of fishing net, 500 pieces of bamboo traps and one local smoking oven. His household is composed of 7 people, his wife who is 40 and five children (2 girls aging 10 and 12 and 3 boys aging 15, 17 and 19). All the children are his own children and he actively involves the three boys in fishing. Ebo claims he uses his sons for fishing because he

has no one to help him and he can not hire people to work for him. Ebo does not sell his catches to any fishmonger he hands them over to his wife who smokes and sells them on the market at market days. Ebo's wife also involves their three girls in fish mongering.

He goes to fishing everyday except when he is sick or has an important ceremony to attend like funeral or naming ceremony. Only one of his boys is educated up to the Junior High Level and all the others are illiterates. According Ebo he could not afford to educate all his children that is why he chose to educate one of them so that the entire household could have one person who could read and write.

It is obvious from this case that the livelihood strategy adopted by Ebo is to fish with all his family even at the expense of their formal education. The transforming structure which determined Ebo's livelihood strategy can be said to be his class. He does not have the financial strength to hire people who could help him with his fishing fish.

6.8 The poor group

This group is the poorest in the sample. Some have moved or migrated from nearby villages and other parts of the country into this area in search of better life. Others are also from the families who were victims of the 1989 flooding of the area which led to the lost of many valuable properties. Some have very simple fishing gears like hook and lines, bamboo and basket traps. Most members from this group are hired by the rich to work as crew, house helps, fish smokers, corn mill operators and others. Members of this group try to feed their families at least once during the lean season. They hardly give their children formal education. Some members of this group also work as porters and truck pushers on market days. Here is a case of one poor man in the sample.

Case study 4

From the sample, Yao (40) is categorized as poor. He lives in Agordeke with his wife (37) and three children (a boy, 5 and two girls, 8 and 10). He has 30 basket traps and one local oven for

smoking fish. He does not involve in any gainful livelihood activity besides fishing. He goes to fishing everyday if he is not sick. According to Yao, his household only eats once daily during the lean season when he gets little money from his catches. None of Yao's children has ever been to school because of his low income. He told me about his plans of give out one of his girls out to be fostered by a rich woman. He claims to do this as a way of reducing the burden on his family during the lean season and also as a way of securing a better future for he daughter because the rich person is more likely to help his child to be a fishmonger in the near future.

This case of Yao shows that his household is very vulnerable to the low season as they eat once a day. Again, due to his low asset quality and quantity he is unable to gain more from fishing, which is his major livelihood. Consequently he denies all his children formal education and also plans to give some out to be fostered.

6.9 Household cycle

The Producer consumer ratio of households is not a static phenomenon, it changes with time and circumstances (Aase, report no. S 8/86:36). It may change as a result of the development that take place in the household cycle or events that take place in the household such as infants growing to a point that they can partake in livelihood activities and a making their mothers free to put more labor into productive work, a households ability to live with other relatives or hire people to live and work for them. Hence, a household that is poor at a point in time, having only one bread winner, for example, the father, may be better-off some years later when the children can work or lives with a relative who can work. Conversely, a household can also become poorer by losing a prominent member. Case study 5 shows how one widow became poor after losing her husband.

Case study 5

Here is the case of one Ewe widow, Akuvi(49) who narrated how she became poor 3 years ago after the death of her husband leaving her with three children(2, 4 and 6) years to raise alone. According to this widow, her late husband was doing well with fishing three years ago until he had an accident on the lake and died. From my discussions with her, their household could be categorized as better-off by then. After the death of her husband she had to sell all the fishing gears of her husband to raise some capital with the aim of expanding her fish mongering business. Akuvi said the business never expanded as she thought because the proceeds from her late husband's gears were not enough and then gradually she became poorer. She finds life very hard but with the hope of getting better. As she told me,

'We try so hard to eat at least everyday, sometimes this becomes very difficult but I believe my kids will grow and things will be okay for us' Akuvi acknowledges the fact that she is poor but she hopes her well-being will improve when her children grow-up and start working either on their own or with someone.

It can be seen from this case that the wellbeing of Akuv's household declined with the lost of an important Human capital, her husband. The household lost the fishing skills and knowledge possessed by him. Consequently, Akuvi became more vulnerable as the only bread winner of the household with two infants. She then saw no use to his husbands fishing gears (physical assets) than to sell them and use the proceeds as a working capital but this could not help her situation because it was not sufficient for her. Virtually, the lost of the main human capital in the household lead to the lost of another important asset, the physical capital. This means that without the appropriate knowledge and skills all the other forms of capital could be less useful in a household and this also explains why Akuvi hopes to improve her likelihood through her children one day.

Labor capacity or productive capacity problems related to the development cycle does not pose a serious problem to the households who are rich in assets. Boat owners may hire a crew to work for them, corn mill owners may hire operators to work for them, and cattle owners may also

employ the services of herdsmen. By doing this they experience some increase in their income depending on the amount of assets owned.

Poor households with very little amount of assets or no assets on the other hand faces serious problems in dealing with the productive/consumer problems. It was evident from the discussions I had with some poor household heads in the sample that in order to reduce the pressure resulting from low productivity, low income, and less productive assets, they give out their children to live with and help either their rich relatives or rich friends in their livelihood activities. See case study 4. Such poor families believe that by doing this, their children may be helped in the future by the rich ones to enter into fishing on their own and also it was a way of getting closer to the rich ones, which means they can get help from the rich in times of need. In most cases the rich do not let them down. In other words child fostering is a way of building social capital and physical capital. Some desperate poor families even lease out their children to some of the rich families.

It can be said from the above discussions that the effects of the assets on the well-being of the various households can be modified by the producer/consumer ratio (the household's stage in the development cycle). The rich having more assets are those who are able to hire or live with more people who work for them. This means that their producer consumer ratio would be high leading to high productivity. Those from the better-off groups use the labor of their own children and also the labor of other children which are from their relatives to increase their output. The poor on the other hand work for the rich ones or give out their children to work for the rich ones in order to reduce the burden of low productivity on them. However, the poor ones do not only do this to get rid of a consumer but also to secure physical capital for their children.

6.10 Household income

Household incomes are generated from different livelihoods depending on the income earning opportunity opened to the each household or individual. The major source of income is fisheries, involving fishing or fish mongering or fish trade in the local market. Other income sources are making of fishing gears like canoes, basket and net traps, bamboo traps and ovens; repairing of

damaged outboard motors; selling of other items like bags of charcoal, pepper, livestock; shop keeping; corn mill services and transport services. Farming is also done but mainly on a small scale. Fishing is the most important livelihood activity which is combined with other activities. Table 5 below shows the average proportion of income from the various sources of livelihood activity for the wealth groups.

Table 5. Average proportion of income from the various sources of livelihood for the wealth groups

	Rich	Better-off	Poor
Average proportion of income from fishing/fish mongering	55	70	88
Average proportion of income from farming/ animal rearing	18	12	2
Average proportion of income from other businesses(transportation, trading, etc)	21	10	-
Average proportion of income from other livelihood activities	6	8	10
Total	100	100	100

Source: Field survey, 2007.

It can be seen from the table that small scale farming mainly on subsistence bases is also an important livelihood activity for the respondents. This is done together with fishing (the major and most important livelihood activity). Farming is done by men, women and sometimes children with the use of simple tools like hoe and cutlass. Some of the common crops grown by the people include cassava, maize and pepper. The survey showed that all the three wellbeing groups do some farming but some rich house holds farm on commercial basis in the Afram plains where they produce yams, groundnuts and maize.

Rearing of animals also forms an important part in the livelihoods activities of the respondents. The respondents identified goats, pigs, sheep and cattle as the types of livestock they possess. Large livestock like cattle were mainly owned by the rich households. The rich households also possessed the other types of livestock but on a relatively larger scale. Goats and pigs were also common with the better off respondents. Some better-off families also have some cattle but only an average of two animals. The poor household did not possess any valuable livestock. From the discussions I had with the poor and better-off respondents, they do not sell their livestock easily. One would expect them to sell some of their animals during the lean season but this is not the case. They only sell the animals on very critical situations and also when they are very sure of the long term benefits they may receive from the sales of their livestock. Here is what one man from the better-off group told me about the sale of his livestock *'The last time I sold off some of my sheep was two years ago when my wife was critically sick and nearly died, I did it just to save her life'*. This statement suggests that respondents see their animals as a very big form of security. Another man told me this when I asked him why he does sell his livestock during the lean season *'You see this daughter, Ama? I sold three of my sheep and two goats last year so I could pay for her to learn dressmaking. We do not sell our animals to buy food during the lean season because this season comes all the time and if you have to sell your animals, tell me how can you keep them?'* The respondents know the lean season comes every year and would rather choose to cope with it by other means than selling off their livestock. The rich respondents often sell off their live stock strategically during the fish season in order to raise working capital. This is what a rich woman from Dzemeni says about selling off her livestock, *'I often sell off some of my cattle during the fishing season when I need money to fish effectively, but I replace them and even buy more after making profit from the fishing'*. In other words, this woman would only sell off her live stock when she is

most likely to profit from it or replace it. Some of the rich respondents also do not sell off their livestock; they would rather keep it for posterity. Here is what one rich respondent told me about selling his live stock *'I am keeping the cattle for my children to benefit from them in the future when I am no more. I do not sell them easily at times I sell some when they are sick and I am afraid they would die'*. In other words, this rich man is only keeping his livestock as a legacy for his children and would only sell them when they are sick and likely to die.

Migration has been an important characteristic of this area for a long time and also a livelihood strategy. Unequal fishing opportunities along the lake and other parts of the country have made others to move to this area permanently and others also migrate to other fishing grounds seasonally to follow fish during the lean season. The Fantés, Adas, and of the ewes have also migrated to this area long ago for better fishing opportunities. Some of the rich households migrated to this area and are now permanent residents. It was found out that members of the poor households and some of the better-off ones migrate on seasonal bases (during the lean season) to places with better fishing grounds. This is what one respondent from the better-off household told me about the seasonal migration. *'I move to other villages to fish almost every year when I begin to have very low catches, I have been doing this for the past 7 years'* Migration, however, becomes an important livelihood strategy for the poor families and some members of the better-off families as it reduces the pressure on poor families during the lean season. The rich respondents also fish in other places during the lean season but unlike the other groups, they use their workers. As one rich man told me, *'I fish in other areas but I send some of my workers to do it when I realize low catches here'*. The rich respondents do not migrate themselves as can be seen from this statement they use their workers and by doing this they get more time to stay back and concentrate on other livelihood activities.

Mainly women in the sample perform some domestic chores which although not paid, contribute greatly to the household living strategies. Though, women in the study area are responsible for buying, processing and selling of fish, they still retain their traditional duties, in child rearing, food preparation and accompanying their husbands to important ceremonies.

The people use the money generated from fisheries to re-invest into fisheries or start another livelihood activity or save. See table 6 below.

Table 6. Spending purpose during the on-season

	Frequency	Percentage
Re-invest	28	46.6
Save	8	13.3
Start another business	10	16.7
consumption	6	10.0
Others	8	13.3
Total	60	100.0

Source: Field survey, 2007.

The various forms in which the respondents keep their savings were also found to be good ways of investment. They saved by: buying and keeping livestock, which they sell strategically; buy maize or pepper during the bumper season, store them then sell them later when their prices go up. Others, mainly those from the poor households can hardly save.

6.11 Household Expenditure

Households and individuals have different expenditure forms depending on their livelihood status. The survey showed that food consumption forms 90% of the expenditure of the poor households as they suffer most during the lean season. The rest 10% is used on medical care and maintenance of their gears for fishing. Members of the poor households did not mention formal education as one of the things they spend on. Food consumption forms 55% the expenditure of the better-off groups, 25% of their expenditure goes into school fees and the remaining 20% is used on maintaining their fishing gears, clothing and other social activities. Food forms 30% of the expenditure of the rich households. They spend 40% on educating their children. The

remaining 30% of their expenditure is spent on medical services, clothing and other social activities.

6.12 Assets of the wealth groups

6.12.1 Natural capital.

The most important natural capital available to the people is the stock of fish in the lake. The fishery resource is a potentially renewable natural resource which means they are renewable if people use them wisely but can be destroyed if used carelessly (Getis *et al.* 2000:399). People can only benefit from the fish resource if they have the access and the ability to tap the fishery resource. Though all the wealth groups have some fishing gears for fishing, ones ability to buy and possess more and better fishing gears as well as to get more people to help him/her determines how much fish he/she gets from the lake. There are farm lands available at the study area, mainly for subsistence farming. There is also some pasture land available to support livestock like cattle, sheep and goat. The water in the lake itself was also a valuable natural asset to the people. The lake is their main source of water for drinking and other domestic activities. The lake also serves as a means of transportation. During market days many traders and buyers travel by the lake from other villages to Dzemeni to transact business.

6.12.2 Physical Capital.

According to Rakodi, better access to physical capital forms an important part of the strategies that liberate people from poverty (Rakodi. 1999:317). This is also the case in the study area. It was established from the field work that the quantity and kind of ones physical asset contributed greatly to the value of their wealth and hence their position on the wealth rankings. Fishing gears were mentioned as some of the common physical assets; it was common to all the wealth groups. From the sample a total of 47 boats were powered by an outboard motor and out of these, 30 belong to the rich and 17 to the better-off households. None of the poor in the sample had an

outboard motor. Items such as corn mills, fishing gear shops, and bigger herds of cattle, and commercial vehicles were only found to belong to the rich in the sample.

6.12.3 Sources of Capital

The fisheries sector, unlike the agriculture sector has absorbed a growing number of people for employment along the Volta Lake and Dzemeni in particular. (Fabio *et al.* 2003:21) but one factor that makes it difficult for people in the study area to accumulate wealth through the fishing activities is insufficient or limited access to working capital. This has perpetuated a situation where a growing number of small scale fishers supply to an increasing number of small-scale fish traders who also sell on the local market. The household interviews indicated that the sources of the start-up capital for most of the fishers or fish traders were relatives or through their own labor. Working capital was also difficult to acquire. Table 7, shows the various sources of capital (start-up and working) for the heads of the various households.

Table 7. Sources of start-up capital for the respondents

	Frequency	Percentage
Own savings	33	55.0
Gift from relatives	15	25.0
Loan	9	15.0
Gift from Friends	1	1.7
Gift from spouse	2	3.3
Total	60	100.0

Source: Field survey, 2007.

From the table⁷ above, it can be observed that (33) 55% of the sampled households got their start-up capital from their own savings labors. Some of these people served other fishermen or fishmongers for many years as crew members, fish smokers, and shop keepers in order to acquire sufficient capital while others worked in other occupations such as pushing trucks in the market or working as porters and farm laborers. Twenty-five per cent (25 %) of the start-up capital was also received from relatives, however without direct conditions attached but in most cases those who receive their start-up capital from relatives in a form of gift are required to also help other relatives in a similar way when they begin to profit from the fishing. Nine per cent of the respondents (9%) also identified borrowing from others such as fish mongers, fishers, shop owners, car owners, churches and associations as the source of their start-up capital. The interest attached normally ranges from 5-20% depending on the sources. The monies borrowed from the churches usually have less interest attached. None of the respondents mentioned the bank as the source of his/start-up capital. Lack of collateral security was identified as the main reason why they did not rely on the banks for start-up capital. Having the respondent securing their start-up capital from sources such as (relatives, from own labor, friends etc) means they have limited access to start-up capital and may only start fishing on a small scale basis. Here is a case of one rich woman Vivian who tells me about how she got her start-up capital to enter fisheries.

Case study 6

According to Vivian, she lived and worked with one wealthy fishmonger for about 12 and half years when she was a teenager. Then she decided to be on her own when she was 27. The wealthy fishmonger then agreed to her decision and as the norm in the society, the wealthy fishmonger had to give Vivian enough physical capital so she could enter into fisheries on her own. As a result Vivian got one small sized canoe (\$207), 5 bundles of fishing net (\$80) and two local ovens for smoking fish (\$13). Vivian said because of her experience with the wealthy fishmonger she thought it wise to ask for the above gears because she was sure that with this kind of gears and a fisher to use them for her, she would get catches to smoke and sell very often. Vivian, then found a fisher whom she entered into an agreement to pay him with 1/3 of the catches he makes with the gears anytime he goes to fishing. According to Vivian, her fisher was

faithful to her and as a result her business expanded to a point where she could buy catches from other fishers and also invest in other livelihood activities.

Vivian is now very powerful and influential in Dzemeni. She is a leader of one of the fishmongers association in Dzemeni. She lives in her own house, gives good education to all of her three children; she is also living with 4 boys (16, 19, 20 and 20) and 3 girls (13, 15 and 17) who work with her. Vivian has about 10 canoes of which 6 are powered by an outboard motor. She, unlike some fish traders is likely to get catches from her 10 canoes even if other fishers refuse to sell her some catches. As the owner of the 10 canoes, she is the only legitimate person to buy catches from them. However, Vivian must monitor the crew in order to ensure her regular and adequate supply of catches as the crew is very likely to sell their catches to other fish traders with higher price offers. In order to secure her supply of catches, Vivian has a small canoe with an outboard motor she uses to patrol the lake herself with one or two guards just to safeguard her catches from her competitors who also have the means to patrol like her. Vivian's job on the lake goes beyond just patrolling; she also buys catches from other canoes if possible. She told me in one of my conversations her that:

'The fish business is very profitable provided you are very hard not to allow the crew and other competitors to run over you'

In other words, one must be 'hard' to ensure adequate supply of catches. On one occasion Vivian had gone on her usual patrolling, and in an attempt to prevent the crew of one of her canoes from selling fish to another buyer, Vivian ended up in a physical struggle in which she was hit on the arm with a paddle by a crew member of her canoe. Vivian, who claims to be very strong, got the culprit arrested by the police. It took a lot of elders including the chief fisherman to persuade her from stopping to take the case to court so it could be settled by the chief fisherman.

This case of Vivian shows that at least in order to enter into fishing and accumulate wealth, one need at least a minimum physical asset comprising of: *One small sized canoe (\$207), 5 bundles of fishing net (\$109), 2 local ovens for smoking fish (\$13) which cost \$329.* This physical capital alone is not enough one needs the human capital. In the case of Vivian the skills and knowledge

she acquired from the wealthy fishmonger about how to ensure regular supply of catches also helped her to gain from fisheries. Again Vivian entered into an agreement with a trustworthy fisher which also contributed to her success as a fishmonger.

In literature dealing with fisheries management, institutions are often portrayed as government's way of organizing fisheries administration (Jul-Larsen *et al.* 2003; 15). The concept of Institutions however goes beyond this. The case of Vivian as discussed above gives us more understanding into how both formal and informal institutions exist. This is analogous to an iceberg. According to the iceberg analogy the top of the ice berg which can be seen by everybody can be taken as the written and formal institutions while the submerging part, which is not visible but existing, can be taken as the informal and unwritten institutions. The culprit in Vivian's case violated the patron/client agreement which is not formal. Such cases are mostly handled by the chief fisherman (Torfia) or the elders. The client also physically assaulted Vivian and this is not acceptable by the laws of Ghana as is written in the constitution of Ghana. Vivian decided to solve the problem by the law court but the chief fisherman, and the elders informally arbitrated and stopped the case from going the formal way. This case shows us that even a formal case can be solved by the informal institutions. Furthermore, it makes it vivid that both formal and informal codes may be violated but the culprits are punished (ibid: 16).

Working capital in the study area is seen as the money used or needed by the people to engage in fisheries in order to improve their livelihoods. The sample revealed that the rich households could secure working capital from selling off some of their assets and borrowing from financial institutions. A few of the better-off households could also secure working capital from financial institutions. Almost all the poor households have nowhere to acquire working capital. Table 8 shows the various sources of working capital for the wealth groups.

Table 8. Sources of working capital for respondents

	Borrowed from financial institutions	Gift from relatives	Selling of an asset	Nowhere	Total
Rich	5	-	8	-	13(22%)
Better-off	11	1	-	20	32(53%)
Poor	-	1		14	15(25%)
Total	16(27%)	2(3%)	8(13%)	34(57%)	60(100%)

Source: Field survey, 2007.

It is seen from the table that as much as 57% making up of all the poor households and some better-off households has no access to working capital. The rich who could secure working capital from financial institutions were those who had bank deposits and also strategically sell off their assets (livestock). Here is what one rich man says about securing loan from the bank; ‘ *I have received loan from the bank many times, because I save with the bank and my bank deposits serves as my collateral*’ from this statement it is obvious that not everyone can easily access loan from the banks but only those with collateral security.

The better-off families basically depend on their daily income for living and sell some of their livestock in critical conditions. However, some members of this group and the rich groups belong to credit associations where they get some funds through their own actions such as the monthly ‘*susu*⁵’ plan. The better off groups also get loans from their customers (fishmongers) the poor families depend on wage labor from the rich group and other sources like serving as potters to make their living and the poor group and many of the better-off groups do not have access to credits because they lack collateral security or they are not very rich in assets. This is a statement of one poor woman from Dzemeni expressing her difficulties in getting a credit. ‘*The banks would only give credits to the rich. How can a poor woman like me get credit without security?*’ Similarly, another man from Agordeke asked me this rhetorical question; ‘*show me, which bank I can get a loan without collateral?*’ It can be seen from these statement that it is almost

⁵ Rotating savings among members of a credit association.

impossible to get a credit from the bank as a poor person because the poor has no collateral security. This then leads to economic marginalization, because the poor are not able to fish adequately as a result of their lack of working capital.

6.13 Social Capital.

There have been many definitions of social capital. One definition of social capital is ‘the quantity and quality of associational life and the social norms that relate to them’ (Narayan, 1999:872). Coleman claims that social capital is defined by what it does in a sense that it makes the attainment of some ends possible and without it such attainments would be impossible (Coleman, 1998:98). Social capital is found in the relation among people (ibid). This means that social capital can either be created or destroyed by the kind of relationship that exists among people depending on what one hopes to achieve. Social capital, according to Putman, grows through ties, norms and trust.

In the discussions I had with the respondents, it was clear that they build and maintain social capital through norms, family relations and friendship with trust being the main engine. All the respondents belong to some social groups, like churches, Dzemeni Fishermen Association, Fante migrant association and others but the rich households and some members of the better-off families belong to credit association (*Susu group*). Here is a case of how the Lolonyo fishmongers association works with trust among its members.

Case study 7

The Lolonyo fish mongers association is made up of groups of fishmongers who are friends and neighbours. They typically meet every month where each member contributes the same amount of money to the central fund. This money is then given to one member (by census). This rotates among the members every month. This kind of association seems to be an efficient way of gathering either start-up capital or working capital but one must be financially sound in order to make the monthly contributions. Without a high degree of trust among members such an

association could not exist as members could take the monthly contributions and then quit the association.

Members of such association would not try to defraud the other members by taking the monthly contributions and quitting because they would lose their ties with friends, coworkers, patrons, and even family. In other words they would lose their social capital. Here is what one woman who belongs to the association told me about trust. *' if you lose the trust of any important person or association everybody in this society would hear about it and no one would like to keep you closer to them, you disgrace your family and spoil your own name forever'*. Members of the society are very careful about keeping their self esteem and would hardly do anything that would take away their social capital.

Most of the social organizations are not noted for financial assistance to its members but they help their members to perform the necessary ceremonial rights during burial and funerals, naming of their children, and marriage ceremonies.

All the wealth groups indicated the importance of being connected to an association, or a person. The rich ones are very conscious of their self esteem knowing that without helping some of the poor they may lose their respect in the society. As one rich informant told me; *' you can not eat alone when your brother's children are dying of hunger or take your children to school when your late sisters children are fishing on the lake'*. This means that the rich also fear the risk of losing their self image if they fail to help the needy members of their extended family or the needy in the society. The poor respondents also see their dependence on the rich as a way of get out of poverty as one poor woman recounts to me, *'Though the rich ones use us to make money, the poor man must depend on the rich until he comes out of his poverty, it is through someone that another can prosper you must be serviceable to those on top so they can also help lift you up'* The poor respondents acknowledge the need for them to depend on the rich ones to get themselves establish some day. This statement shows that the rich ones end up exploiting the poor ones in their effort of helping them one day. This is called class exploitation. The case of Vivian for example, shows that she was used by the rich woman for about 12 years before she got her established.

6.14 Human Capital

Human capital is created by changing a person in order to give him/ her skills and knowledge to act and reason in new and better ways (Coleman, 1990:304). The rich respondents, due to their high value of assets and its associated high income, they are able to give formal education to all their children to the highest level. See case study 2. The better-off groups also try to give some of their children some formal education but to a limited level. See case study 3. The poor mainly give their children informal education in fishing. See also case study 4. Consequently, the rich households are also rich in human capital. The highly educated members of their households are most likely to enter highly skilled professions, which means, they may not become fishers. This means that through fishing one can build a very high human capital. The better-off households have some literates in their households but due to their limited level of formal education may not be able to secure employment that requires high skill. Members of the poor households are most likely to become fishers and fishmongers or traders because they basically receive informal education.

6.15 Vulnerability

The field survey revealed that the poor respondents are more vulnerable than the non-poor. The poor respondents find it very difficult to secure working capital because of their inability to provide collateral security as a result of their poverty. As a result of this they hardly expand their main livelihood activity (fishing) and also invest in other livelihood activities making their income relatively low. Consequently, the poor respondents find it hard to provide formal education to their children; they also lack access to good medical care and other good public services.

Most of the households identified January to June as the 'hard times' as it was hard to realize adequate catches. The survey revealed that 42 (70 %) of the respondents identified periods covering January to June as the 'hard times' (times when household heads find it very difficult to feed their members adequately). However, 18(30 %) - all the rich and some of the better-off

households- say they did not experience the 'hard times'. The poor respondents and some members of the better-off households are more vulnerable to the effects of the seasonal fluctuations in fish catches than the rich respondents. This is shown in table 9 below.

Table 9. Effects of 'hard times' on respondents

	Rich	Better-off	Poor
Reducing household food consumption by one	-	19	4
Reducing household food consumption by two	-	4	11
*Conflicts at home	-	23	13
*Indebtedness	-	17	10
Do not experience the effects of 'hard time'	13	5	-
Total	13	63	38

Source: field survey, 2007. * Multiple responses

It can be seen from the above table that the poor households and the better-off households are more vulnerable to the lean season as they suffer insufficient food consumption, conflicts in their households and indebtedness. However, the poor are the most vulnerable because they depend more on fishing for their livelihood.

Death of a prominent family member or the breadwinner of the family is among the factors that make members of the low strata more vulnerable. see case study 5.

Again the fishers/fish mongers at the area continue to face high occupational risks such as theft, destruction of fishing gears and competition. All the respondents complained about the cutting of their fishing nets into pieces and theft of catches or gears by others who may probably be fishermen. The practice of stealing customers from their legitimate clients was also identified by all the respondents as a serious problem.

Access to potable water is a problem in the Dzemeni area. The lake serve as and important source of water.

Children from poor households in the study area are more disadvantaged and vulnerable than other categories of people. This is due to their parent's inability to cater for them. The victims (from poor families) are mostly young boys and girls aged between 5 and 14years. The girls work as domestic laborers and the boys as fishers and cattle herders. See the plates 13 and 14 below. Some of these children work with their own parents at the expense of schooling. They work more than 8 hours a day as they start fishing at dawn and come back around 1.30 in the afternoon. Some of these children also work with their distant relatives or are leased to their masters. I met an eleven year boy, Agboti (from Battorkope) whose father had leased him out to a local fisher to work for 4 years in return of one cow. Here is the case of Agboti.

Case study 8

According to Agboti, he starts work at 4 am everyday and closes at 6 pm. He identified diving deep into the water to disentangle nets, mending of fishing nets and paddling o f the canoe as some of his daily jobs. Agboti said he did not like living that way since he is not paid and also it is very risky working on the lake where the numerous tree stumps and storms cause fatal accidents.

This case of Agboti is also a clear manifestation of class exploitation. A rich man is only taking advantage of a poor man to work with his child for four years only in return of one cow.

However, some of the fishers who worked with their own children argued that they have no money to hire workers to assist them in fishing hence their children must be used. Some interactions I had with various groups of children revealed that most of the children are also compelled by their parents to combine fishing with schooling which does not contribute to their success at school. Consequently, most of the children end schooling either at primary six or at the junior high level. See plates 8 and 9, they show some child workers.



plate 8. A child fishers carrying their gears home



plate 9. Young boys grazing a herd of cattle

6.16 Wealth accumulation.

Substantial accumulation of wealth by the rich respondents was mainly realized through the way they organize their livelihood activities. A variety of livelihood strategies were identified by the rich group.

It can be seen from the above findings that the rich invest the proceeds from fishing (livelihood activity) in other livelihoods such as, transportation business, fishing gear shop, corn mill operation, and livestock rearing. However, they also re-invest in fisheries to maintain and increase the quality and quantity of their fishing gears. This is the way by which the rich generate higher incomes and also shield themselves against uncertainties. With this the rich has a long term security since they do not depend solely on fishing.

Unlike the other wealth groups, the rich mainly sell off their property (livestock). During the fishing season to release working capital in order to fully and effectively participate in fishing from which they always realize good returns. This then always makes it easy for them to replace the sold items, sometimes with better ones in terms of both quality and quantity.

The rich respondents increase the number of their households by retaining relatives and other members of the lower strata who can work for them with the promise of helping them to set up their own livelihood activity in the future. Such dependents/ helpers help them in all their livelihoods including fishing, fish mongering, trading and house keeping. By having such large household sizes contributes massively to high productivity.

6.17 Sustainability of the fish stock in Dzemeni.

All the respondents in the sample said they have observed a decline in their general catches over the years. The respondents recounted that their total catches from the lake get worse every year. They concluded that the fish stock in the lake is reducing. The Fisheries Recording Officer of the area (from the Ministry of Fisheries) also told me about his observation of the decline in the fish

stock in the lake. The officer however, said this is due to the lack of fisheries law enforcement in the area. According to the Fisheries Recording Officer, the use of fishing net mesh size of less than two inches and the bamboo traps in the area are prohibited by the fisheries law because these gears catch juvenile fish. The recording officer said the people do not comply by this law because the government does not enforce the laws. From these discussions, it is obvious that the fisheries law in the area need to be enforced by the government in order to ensure the sustainability of the fisheries resources (the area's most important natural capital).

CHAPTER SEVEN: THE ROLE OF FISHERIES IN WEALTH CREATION AND POVERTY MITIGATION IN DZEMENI.

7.1 Introduction

The term, poverty alleviation is generally applied to take account of both poverty reduction and poverty prevention. Poverty reduction in artisanal fisheries is depicted as the situation where wealth is created and capital increased through investment made in fisheries which then help in lifting people out of poverty (Bene, 2004:15). This means that people can use fisheries as their livelihood to amass wealth and then increase their living standards. Poverty prevention in artisanal fisheries is also described as an instance where fisheries play an important role to reduce the burden of the vulnerable or the poor (ibid). Fisheries may reduce poverty in two ways: a 'welfare' mechanism -a case where the poor tend to depend more on fishing in order to sustain their livelihood- and a safety-net mechanism -this is a situation where fishing provide a source of livelihood to those who have temporary lost their source of livelihood- (ibid:18).

7.2 The Role of fisheries in poverty prevention

In the study area fishing/fish trading appears to be a lucrative livelihood activity for the rich households in the sample who invest massively in it. The rich group in the sample as has been shown already use the income accrued from fishing to invest in other livelihood activities, and also re-invest in fisheries as a way of accumulating wealth. Consequently, they have higher incomes and are able to give better education to their children, employ other people to work for them and also foster others. Moreover these fishing livelihoods also have production links which assist in lifting many people from poverty through many production related livelihoods such as provision of services like selling of fishing gears, building and repairing of fishing gears and selling of firewood for smoking fish; for fishing, processing and storage of the fish and marketing of the fish. These benefits are only seen in the context of the local setting.

7.3 The Role of fisheries in poverty reduction

It can be said that that fisheries contribute massively towards poverty prevention in the study area by considering the number people who rely on it as a source of livelihood. The field survey, however, revealed that with the exception of the Rich households in the sample, the majority of households who depend more on fishing as a livelihood activity do not generate high profits from it. However, fisheries help them to sustain their livelihoods thus, preventing their incidence of poverty to get worse

7.3.1 Poverty reduction through the welfare mechanism.

Fishing activities in the area help in poverty prevention in one major way: welfare mechanisms. The welfare importance of fishing is the fact that the poor people in the area rely largely on fishing activities to sustain their livelihoods than the rich households (Bene, 2004:17). Due to the difficulties in obtaining adequate capital (both start-up and working capital) in the study area, the free access to the fisheries resources and low entry cost to start fishing, majority of the respondents, especially the poor households engage in fisheries to at least sustain their livelihoods. Access to the lake is not a problem for the poor and even migrants who want to enter into fishing provided they have their working capital. From this point of view, fishing can be seen as an indispensable livelihood activity for the poor households (who face persistent poverty and deprivation) to at least sustain their livelihood.

CHAPTER EIGHT: CONCLUSION AND RECOMMENDATIONS

8.1 Conclusion

This research carefully followed the following three objectives as a way of understanding the role of fisheries in wealth creation and poverty mitigation in Dzemeni: Examining the role of fisheries in the livelihood strategies of the different wealth groups, Identifying the factors and strategies that facilitate wealth creation in fishing households, and Identifying factors and processes that lead to poverty and Vulnerability in the fishing households.

Poverty in this research is seen in relative terms in the sense that the respondents were categorized or ranked as rich, better-off and poor depending on household wealth possession, household income and household P/C ratio.

Household incomes are generated from different livelihoods depending on the income earning opportunity opened to the each household or individual. The major source of income or livelihood is fisheries (involving fishing or fish mongering or fish trade in the local market). Other livelihoods are making of fishing gears like canoes, basket and net traps, bamboo traps and ovens; repairing of damaged outboard motors; selling of other items like bags of charcoal, pepper, livestock farming, shop keeping; corn mill services and transport services. Farming is also an important livelihood activity but done mainly on a small scale. Fishing therefore becomes the most important livelihood activity which is combined with other activities.

The respondents (the rich and some of the better-off households) use the money generated from fisheries to re-invest into fisheries or start another livelihood activity or save. The rich respondents who have many livelihood activities use the money generated from fisheries to start those livelihood activities, they use the income from fisheries to save by buying and keeping livestock which is also a livelihood activity. Though, the poor households could not invest with their little income from fisheries, fisheries is almost their only source of livelihood.

Considerable accumulation of wealth by the rich respondents was mainly realized through the way they manage their assets and other activities (their livelihood strategies). A variety of livelihood strategies were identified by the rich group. The survey revealed that the rich invest the proceeds from fishing (main livelihood activity) in other livelihoods such as, transportation business, fishing gear shop, corn mill operation, large scale farming and livestock rearing. However, they also re-invest in fisheries to maintain and increase the quality and quantity of their fishing gears. This is the way by which the rich generate higher incomes and also shield themselves against vulnerability. With this the rich has a long term security since they do not depend solely on fishing.

Unlike the other well-being groups, the rich mainly sell off their property (livestock). During the fishing season to release fund in order to fully and effectively participate in fishing from which they always realize good returns. This then always makes it easy for them to replace the sold items, sometimes with better ones in terms of both quality and quantity.

The rich households increase the number of their households by retaining relatives and other members of the lower strata (the poor) who can work for them with the promise of helping them to set up their own livelihood some day. Such dependents/ helpers help them in all their activities including fishing, fish mongering, trading and house keeping. By having such large household sizes contributes massively to high productivity.

The poor respondents find it very difficult to secure working capital because of their inability to provide collateral security as a result of their poverty. As a result of this they hardly expand their main livelihood activity (fishing) and also invest in other livelihood activities. This makes their income relatively low. Consequently, the poor respondents find it hard to provide formal education to their children; they also lack access to good medical care and other good public services.

Most of the households identified January to June as the 'hard times' as it was hard to come by any meaningful catch. The rich and some of the better-off households did not experience the effects of the 'hard times'. The poor respondents are more vulnerable to the effects of the

seasonal fluctuations in fish catches than the rich respondents because they depended more on fishing as their livelihoods. During this time their households eat once a day. Death of a prominent family member or the breadwinner of the family is among the factors that make members of the low strata more vulnerable. Again the fishers/fish mongers at the area continue to face high occupational risks such as theft, destruction of fishing gears and competition.

Children from poor households in the study area are more disadvantaged and vulnerable than other categories of people as they are mostly over exploited by some of the rich who foster them. This is due to their parent's inability to cater for them or secure a better future for them.

In the study area fishing/fish trading appears to be a lucrative livelihood activity for the rich households in the sample who invest massively in it. The rich group is the most advantageous economically and most influential politically. They have more and better fishing gears and able to fish on a relatively larger scale. The rich group use the income accrued from fishing to invest in other livelihood activities, and also reinvest in fisheries as a way of accumulating wealth. They often combine many sources of income as compared to the other groups. During the off season (January – June), they focus on the other activities more than fishing. They do not switch entirely from fishing. These are the ways they accumulate wealth from fishing. Consequently, they have higher incomes and are able to give better education to their children, employ other people to work for them and also foster others. The poor who has no capital to enter into fishing on their own are basically those employed by the wealthy ones as fishers, helpers in fish processing, shop keepers, corn mill operators (staff) and others. Some of these employees live in the same household with the employers and are provided with accommodation and food. From this point fisheries can be said to play an important role in poverty prevention. In contrast with the rich group, the better-off groups do not have the means to hire labor and are forced to use their own children and children of relatives (boys between the ages of 6 and 14) to help them fish at the expense of their education. The poor group is the poorest in the area. They have very simple fishing gears like canoes without an outboard motor, hook and lines and basket traps.

Due to the difficulties in obtaining adequate capital (both start-up and working capital) in the study area, the free access to the fisheries resources and low entry cost to start fishing allow

majority of the respondents, especially the poor households to engage in fisheries to at least sustain their livelihoods. Access to the lake is not a problem for migrants who want to enter into fishing provided they have the working capital. From this point of view, fishing can be seen an indispensable livelihood activity as it plays an important role in poverty reduction for the poor households who face persistent poverty and deprivation to at least sustain their livelihood.

The respondents concluded that the fish stock in the lake is reducing as their total catches from the lake get worse every year. Due to the lack of fisheries law enforcement in the area, the use of illegal fishing gears like a net mesh size of less than two inches and the bamboo traps is very common. These illegal practices are to some extent responsible for the decline in the general catches in the area. It is obvious that the fisheries law in the area need to be enforced by the government in order to ensure the sustainability of the fisheries resources (the area's most important natural capital).

8.2 Recommendations.

Based on the findings of the study, the following recommendations are made:

The Government should start a credit fund like the 'fishers' bank' bank where collateral security may not be an obstacle to accessing financial capital by the poor fisher.

NGO's working in the area should focus on giving credits to the people who wants to enter into fishing and also provide them with training on how to diversify the income they may earn from fishing.

The government, donor countries, Nongovernmental Organizations (NGO) and other stakeholders should encourage the people to enter into aquaculture as a way to safe guard the effects of low catches resulting from seasonality.

Fisheries law in the area regarding the use of better fishing gears and methods must be enforced by the government in order to ensure the sustainability of the fisheries resources (the area's most important natural capital).

The Ghanaian laws regarding child labor and slavery must be strictly enforced at the area.

Academicians and students should endeavor to research into the importance of fishing in the local economies along the Volta Lake as little research as been done in this area.

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APPENDIX.

Questionnaire designed for research on ‘Poverty mitigation and Wealth creation through artisanal fisheries in Dzemeni area at Volta Lake, Ghana.’ 2007.

MPIL IN RESOURCES AND HUMAN ADAPTATIONS

DEPARTMENT OF GEOGRAPHY, UNIVERSITY OF BERGEN, NORWAY.

Household Size

Ethnic group.....

1. Household Composition.

2. What is the ethnic group of spouse?.....

3. Residence of spouse?.....

4.Assets

Type of Asset	Description	Type of control	Comments

Fishing Boat			
Fishing Net			
Land			
Livestock			
Transportation			
Savings			
Ovens			
If owing someone? How much?			

5. Livelihood Portfolio.

.....

8. Does this vary with season?.....

9a. Are there some periods that it becomes hard to feed your family well? Yes/No

If yes what time of the year?.....

10. What usually causes this?.....

11. How does these hard times affect your household?.....

12. How do you deal with this hard times?.....

13. Do you or any of your family members often migrate from here? Yes/No

b. if yes why do you/they migrate?

14a. Do you receive any remittance income? Yes/no

b. if yes how much a month?.....

c. from whom?.....

d. from where?.....

15a. Does the remittance income vary throughout the year?

b. if yes, how?

16. Who keeps the money when it arrives?.....

17. How is it used?.....

18. Sources of Capital.

Type of Capital	Source	Conditions of access
Start-up Capital		
Working Capital		

19. In what form do you keep your savings?

- i. livestock
- ii. jewellery
- iii cash
- iv. bank deposit
- v. others

20. In times of plenty, how do you spend your money?.....
.....
.....
.....

21. If you need money to buy food or something, who do you turn to?
.....
.....

22. If you had money how would you have used it?

23. Do you have any health care facility nearby? Yes/ No

b .if yes how long does it take you to get there?.....

c . if no how do you access health care services?.....

24a. What is your source of drinking water?.....

b. how long does it take you to get the water home for use?.....

25a. Do you think that you are lacking in certain types of information?

b. if yes, what kind?

c. who makes the rules?

26. a. Are you aware of the policies and regulations that impact on your livelihoods?

Yes/No

b. If yes, what are they?.....

.....

27 .Are there any periods or areas that you are not allowed to fish or farm?

28. Do you belong to any association in this community? Yes/No

b. if yes, which ones?

29. In what ways are you helped as a fisher, or trader, or farmer by these associations?

.....

30. How do you deal with conflicts and grievances in this community?

31. a. Do the Chiefs discriminate against certain groups within the
Community? Yes/No

b. if yes, what kind of groups?

32. How do you make your problems known to those in authority?.....

33a. In your view, do you think the rules regulating fishing, farming or other activities are
made to favor some people than others?

b. if yes, what groups?.....

34. What are the constraints faced by you as fishers/fish traders?

.....

.....

35. How do you manage these problems?

36. What do you need as fisher to enhance your well-being?

37a. Do you receive any external support as fishers? Yes/No

b. if yes, in what form?.....

c. if no what kind of support would you suggest?.....

38a. Do you face any problems resulting from the activities of other fishermen, farmers, or fish traders who do not live here with you?? Yes/No

b. if yes, what kind.....