

Livelihood impact of boating accidents on Lake Volta

*A case study of Dambai, Abotoase, Kpedzi, Tsevi, and Agyatakope
Communities in Ghana*

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Dedication

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Abstract

This study looks at the livelihood viability of boating dependent farming and trading households who have lost a member or property through boating accidents on the Volta Lake. It focuses on the differential vulnerability that households undergo and the coping and adaptive livelihood strategies they undertake after suffering from a boating accident. It also assesses the sources of assistance available to boating dependent households and their effectiveness. The livelihood approach as well as the PAR and Access models provided the framework for analysing the livelihoods of boating disaster households. The qualitative research method was solely employed to investigate households that suffered from boating accidents in five communities in Ghana. The findings of the study have many implications for the livelihoods of boating accident households. The study revealed that both low income and high income households experienced some disasters after losing members or property through boating accidents. The study also revealed that many of the disaster households have limited livelihood opportunities and that this to a large extent structure the post-disaster livelihood strategies they undertake. The study further found that community support services are the major source of assistance to boating disaster households, but insufficient to make much positive impacts on their livelihoods. The study is therefore of the view that social protection by the state should play a greater role in minimising the negative impacts of boating accidents and empowering the livelihoods of boating dependent households.

Abbreviations

ABOA	Abotoase Boat Owners Association
DBOA	Dambai Boat Owners Association
GMA	Ghana Maritime Authority
NADMO	National Disaster Management Organisation
NGO	Non-Governmental Organisation
PAR	Pressure and Release (model)
GHS	Ghana Cedis
VLTC	Volta Lake Transport Company

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1 Introduction

1.1 Introduction

This study investigates the livelihood viability of households along the Volta Lake who suffer boating accidents, for households using boating as a major economic strategy. There have been numerous and recurring accidents on the Volta Lake with grave livelihood implications for boating dependent households. Boating is very crucial for the socio-economic activities of most households living along the lake. Households of interest to the study are farming and trading households who utilise boating on regular basis to access farms and markets respectively and have suffered a boating accident.

Like other forms of transportation, inland water transport is a hazard in many developing countries. Preventable accidents therefore continue to occur in many inland waters which often put many livelihoods at risk. Hilling (1996) attributes this state of affairs to the low technology and craft involved and the fact that there is inadequate regulation of the sector by state institutions in developing countries. The plight of the affected households is worse if they undertake their livelihoods in generally viewed vulnerable sectors of the economy.

It is widely documented that poverty in the developing world is mostly rural with high incidences among food crop cultivators (Chambers 1983, Ellis 2000). In Ghana, food crop farmers are the poorest with a high poverty incidence of 49 per cent in the 2005/2006 period (Ghana Statistical Service 2007). A majority of the people in the micro and small-scale informal sector also lives below the poverty line in Ghana (National Policy Group in UNDP 2007). When households in such deprived sectors experience hazard events in line with their daily economic activities, their livelihoods may become much worse. The livelihoods of boating dependent farming or trading households may therefore probably deteriorate and become much vulnerable after losing a member or property in an accident. Deaths resulting from accidents, for example, are shocks which may have an immediate effect on the livelihood viability of households to whom they occur (Ellis 2000). This is particularly so where the affected household has few assets and builds its livelihood around the member that perishes in the accident.

Little assessment has been done on the disasters that boating dependent households experience when they lose a member or property through an accident. Most boating hazard studies concentrate on the general causes and effects of boating accidents (as in the studies by O'Connor and O'Connor 2005, and, Agbagba 2008) while others stop at investigating the psychological effects on survivors of such accidents (such as the study by LÍndal and Stefánsson 2011). There is the need to move beyond the general causes and effects and treat boating accidents as one of the numerous hazards that has the potential of disrupting household livelihoods. This study addresses this concern and draws on qualitative research techniques to investigate the vulnerabilities households undergo and the effectiveness of the livelihood strategies they undertake after experiencing boating accidents, with the aim of informing policy. Studying vulnerabilities at the household level is very important as households respond differently to the disasters they experience. The study therefore focuses on the livelihoods of boating dependent households who lost economically active members and those that lost significant amount of property through accidents.

The main problem with the study communities is that, most households live with many disadvantages where basic amenities and livelihood opportunities are lacking. Such households may therefore undertake their livelihoods activities solely in boating. However, the viability of these livelihood activities is threatened by the continuous occurrence of accidents on the lake which mostly result in loss of lives and properties. There is also little livelihood intervention in these communities when households suffer disasters from boating hazards. With each accident occurring and with limited livelihood opportunities as well as inadequate support from the responsible institutions and agencies, what is to become of the livelihoods of boating dependent households is an open question.

In this study, boating is used to mean transportation that involves the use of boats or canoes. Boats used in the study communities are commercial in nature while canoes are mostly privately owned and are mainly for household transportation. It is necessary to stress that the study does not investigate accidents from fishing boats or canoes, but boats and canoes used for transporting people and goods. Also, the study does not investigate accidents from government owned ferries and pontoons managed by the Volta Lake Transport Company Limited (VLTC), as the rates and impacts of accidents among them are negligible. With regards to deaths from boating accidents, the study focuses on households who lost members that contribute meaningfully to the household's economy. Furthermore, the study investigates households that lost properties through boating accidents if only the loss of those

properties have major negative impacts on the household's economy. In order to ensure an easy analysis of the livelihood viability of boating disaster households, the study organised households into two major groups based on their relative deprivation before suffering from a boating accident. The study further categorised households who suffered from boating accidents based on whether they still continue with boating or not after losing a member or property through boating accidents. I want to emphasise that the analysis is not organised according to these groups of households mentioned above.

1.2 Research objectives

In assessing the livelihood viability of households who suffer boating accidents, the study seeks to investigate the following objectives:

- *To identify the relative vulnerability situations of households, and to explain the differences in these vulnerabilities.*

This objective assesses the disasters that households experience after suffering from a boating accident. The reason for this objective is based on the recognition that households do not have the same means to respond to disasters. Explaining the differences in vulnerability among households throws more light on the types of households that are more susceptible to negative effects of boating hazards.

- *To describe the post-disaster coping and adaptive livelihood strategies that households adopt, and the viability of these strategies.*

This objective looks at the livelihood activities that households undertake when disasters set in. The aim is to assess whether the strategies that disaster households adopt can enable them to return to their normal lives or not.

- *To investigate the support that disaster households receive from local and national sources, and assess their effectiveness.*

This final objective assesses the community and state support systems available to boating disaster households. This gives a complete picture of the post-disaster household livelihood conditions. The aim of this objective is to assess the nature and impact of external assistance on the livelihoods of disaster households.

1.3 Structure of thesis

The rest of the thesis is organised as follows: First, I discuss the context on which the study is based in the second chapter. Here, the importance of boating to the communities along the Volta Lake is highlighted. I also describe the nature of impacts from boating accidents as well as some safety measures that are operating on the lake. Furthermore, I outline the socio-economic activities in the five study communities. The third chapter discusses the research techniques employed in the field. It further discusses the significance of each technique employed and assesses the trustworthiness of the study. In the fourth chapter, I review literature on some of the important livelihood concepts applied in the study. I additionally discuss the vulnerability models used in the study and illustrate their advantages and disadvantages. These models are the Sustainable Livelihood approach, the Pressure and Release model, and the Access model. The two chapters that follow form the core of the analysis where household livelihoods are discussed in relation to disasters. The fifth chapter therefore mainly assesses the vulnerability situation among households and explains the differences in vulnerability. In the sixth chapter, I explain the short-term and long-term post-disaster livelihood strategies that households adopt. I also assess the support available to boating disaster households and the problems associated with this support. I then provide a conclusion to the study by summarising the major findings and offering policy recommendations.

2 Boating on the Volta Lake and livelihoods in the study areas

2.1 Introduction

This chapter looks at boating on the Volta Lake with an emphasis on its importance. It gives a brief account of some specific boating accidents that have occurred and the toll on lives and property. It also provides a description of some safety measures that are in place and operating on the lake. The chapter further assesses the livelihood situation in the study communities which are Dambai, Abotoase, Kpedzi, Tsevi, and Agyatakope (Figure 3). Here, the focus is on the socio-economic activities as well as the basic facilities in the various communities. This chapter provides the basis for an easy understanding of the study as it describes the background on which the study is situated. In describing boating on the lake and livelihood conditions in the study communities, the study uses secondary information and information gathered at first hand through observation and responses from informants.

2.2 Boating on the Volta Lake

Boating activities have played a significant role in the historical development of Ghana. The roles of canoes and boats owned by locals in stimulating the Ghanaian economy before and during colonial times have been widely documented. Gutkind (1989) provides an account of how boats and canoes were used to enhance trade in slaves, merchandise and to ferry people between the coastal and inland parts of Ghana. He argues that “boatmen” and “canoemen” were indispensable and the labour they provided is directly related to the development of modern economic life in Ghana. Such accounts are not new with regards to boating solely on inland waters in Ghana. Wallman et al. (1968) note that before the creation of the Volta Lake, slaves used to be transported by boats and canoes on the Volta River from the northern part of the country to the southern part. The importance of the lake in linking the north to the south of Ghana has also been documented in recent times. Pedersen (2001) for example notes that during the early part of the 1990s, the north-south transportation on the lake accounted for about 60-70,000 tonnes of freight and 40, 000 passengers per year. Apart from this north-south linkage, transportation on the lake creates an avenue for the socio-economic activities of the communities that lie along it.

The construction of the Akosombo dam on the Volta River which completed in 1964 created the Volta Lake which has a length of 520 kilometres and covers 3.2 per cent of Ghana's total land area. The Volta Lake falls under the Main Volta sub-basin which stretches across districts in the Northern, Ashanti, Eastern, Volta, Brong-Ahafo, and Greater Accra regions (Codjoe 2005). After the creation of the Volta Lake, boating has become much more vital for communities along the lake as the spilled water inundated now otherwise dry lands. The main crafts used for transportation are ferries, boats and canoes (Figure 1). The ferries¹ are overseen by VLTC and are used in conveying passengers and vehicles loaded with goods across the lake. As mentioned above, the boats that ply the Volta Lake are commercial in nature. Boat owners are always busy on market days conveying traders and their wares to neighbouring market centres. It is not only traders that utilise boating, other people also use it to go for funerals, to visit relatives and friends or even to access basic amenities such as hospitals and schools. The boats which are wooden and open usually have one or two engine propellers. The canoes used for transportation on the Volta Lake are also wooden and open but are oar-paddled. Furthermore, they are mostly owned and used by petty traders to access markets or by farmers to access their farms. There are some farmers who use canoes to their farms on daily basis. Others also settle temporary in farming villages across the lake but mostly return to their families during weekends by the use of canoes. Some traders, especially, prefer using boats to ferries because they are either faster or because they go to localities that ferries do not ply, as ferries are only located at few places.



Source: Fieldwork 2012.

Figure 1: Pictures of canoe with market women (left) and boat with traders and merchandise (middle) and a ferry (right) on the Volta Lake of Ghana.

¹ This type of craft will not be considered further since it is not a focus of the study.

Responses from informants indicate that both boats and canoes are obtained in two main ways. People acquire a boat or a canoe by either purchasing a ready-made one or contracting a carpenter to construct one. From the interviews, a new boat in the northern part of the Volta Region cost about GHS 25,000 (USD 12,600) while a new canoe cost around GHS 750 (USD 370) to purchase outright. The cost to construct a canoe depends on the size, whether it is a seven-board or a six-board canoe. As reported from the field again, the person has to buy the boards and the carpenter is paid the total of the cost of each board. Customary to canoe making, the person has to add a bottle of Schnapps and, if the carpenter is to travel from far to construct the boat or canoe, the owner may also be responsible for his feeding throughout the period of construction. Furthermore, new outboard motors for boats are reported to cost about GHS 7,000 (USD 3,500). As gathered from the field, most boat owners have to rely on used or old outboard motors which cost about GHS 1,000 (USD 500) because they cannot afford new ones.

It can therefore be seen from above that boating is very crucial to the livelihoods of households along the lake who utilise it frequently to undertake their economic activities. However, frequent boating accidents on the lake threaten the livelihood security of most of these households as disasters can set in. The next sub-section looks at the impacts (in terms of loss of lives or property) of some specific boating accidents and the causes of these accidents.

2.2.1 Impacts of boating hazards on the Volta Lake

The Volta Lake has recorded numerous boating accidents usually involving loss of lives and property. Though the available government records of accidents on the Volta Lake (Appendix 1) do not show the amount of property loss, it does show the extent to which boating on the Volta Lake can result in many loss of lives. The records show an upsurge in the frequency of accidents from 2001 and portray the Abotoase vicinity as the major hotspot of accidents in the country. It is necessary to point out that the available records consist of only accidents experienced by boats used in transportation, and not canoes. There are however numerous accidents involving canoes, which go unrecorded and unrecognised. As mentioned above, the study focused on canoes used for only transportation purposes by farmers or traders to access farms or markets respectively. In some localities, canoe transport accidents are even much more frequent than the boats. The few cases that are reported at the local level show this. In

their second quarter reports in June, NADMO² (2011) reports that a canoe capsized and killed five people comprising a husband, wife and three children out of seven people on board, in Dambai. This accident happened when they were returning from a farming village. They again state in their third quarter reports in September that four women died from a canoe accident on the lake when they had gone to harvest groundnuts in the farm and were returning. The evidence I gathered from the field shows that many of such cases were not reported to the responsible institutions. The number of deaths per canoe accidents I investigated, especially in Dambai, ranges between two and ten people, and this includes men, women and children. The small sizes of the canoes do not mean that the casualties involved during accidents are few. There is a sense of communal help spirit in most the communities along the lake. Sometimes a group of people in a neighbourhood who farm at a particular place across the lake would join one small canoe or one would find a number of market women on a canoe to the market. Other times too, a farmer can ask for the help of other community members to help in weeding or harvesting of crops and they are mostly squeezed into one canoe. In such situations when accidents occur, the death toll can be higher than in some boat accidents.

Boating accidents do not only result in deaths, but also loss of properties which can be farm produce, trading merchandise or money. Interviews conducted among farm households indicated high losses in yams or groundnuts, especially, for accidents occurring during the harvest season. Also, traders who are lucky to survive such accidents do not only lose their merchandise, but sometimes the seed monies for their businesses. In the April 2006 boat accident (Appendix 1) in which ten people lost their lives, so much property was also lost. This is because the people who were staying at the Digya National Park were forcefully evicted and most of them boarded the boat with all their belongings including livestock. The loss of economically active members or loss of properties therefore poses serious consequences for the livelihoods of affected households, which in most cases result in disasters.

The causes of these boating accidents are manifold. The causes of boating accidents have generally been documented to include overloading, storms, presence of tree stumps, fire outbreaks, and alcohol intake (Copeland 1986, O'Connor and O'Connor 2005). In studying

² National Disaster Management Organisation. 2011. Second Quarter Report—June, and Third Quarter Report—September.

the causes and effects of boating accidents on the Volta Lake, Agbagba (2008) also added over speeding, the use of outmoded boats and outboard motors, and inexperienced boat operators to the above causes. In this study, the focus is on the causes of some specific accidents that have occurred. The April 2002 accident in which fifty people lost their lives (Appendix 1) was said to be carrying many bags of salt, sugar, maize, and cement in addition to a large number of passengers³. Overloading could have played an important role in causing the boat to sink. Also, as implied above, overloading and the availability of tree stumps on the lake were the causes of the April 2006 boat accident. The boat which was apparently overloaded with evictees from the Digya National Park and their properties run over a tree stump and sank. In the September 2011 accident, the boat ran over a tree stump after disembarking a passenger. Again, the recent accident (February 2012) occurred when the boat ran over a tree stump on its way from Keta to Krachi West. In these last two cases mentioned, most informants attributed the actual causes to overloading. As stated by one informant, a boat that is not carrying so much load will take a long time to sink than one that is overloaded. The only distinct case among the commercial boat accidents is the one that occurred in December 2011. This accident was caused by a fire outbreak, which started from one of the outboard motors the boat was using. This can also be attributed to the use of outboard motors that are not lake worthy.

With regards to accidents involving the canoes, most of the causes were either due to wind storms or overloading. As gathered from the field, two canoe accidents were reported to be carrying heavy loads of yam tubers and groundnuts respectively. Other accidents were reported to be caused by wind storms which capsized the canoes. Inexperience in boat or canoe operation as well as the lack of familiarity with the clear routes on the lake are some of the reasons reported to have resulted in boating accidents. The tree stumps in the lake mostly become invisible when the water level rises, and so any boat or canoe operator not familiar with the location of these stumps is likely to wreck the boat/canoe on them. It was reported by the executives of the Dambai Boat Owners Association (DBOA) that there was an instance where a man set out with his new boat from Abotoase to Dambai and wrecked the boat on a tree stump because he had not been sailing on the lake. This is due to the fact that

³ Ghana News Agency. 23rd April, 2002. "50 die in accident on Volta Lake." <http://www.modernghana.com/news/22126/1/50-die-in-accident-on-volta-lake.html>

the lake is full of tree stumps and knowledge of the clear routes is paramount for safe navigation.

It is observed that notwithstanding the frequency of boating accidents, the number of deaths could always be minimised if proper personal attitudes towards safety had been exercised. There are people who lost their lives because they were trying to rescue others or their luggage when they did not know how to swim very well themselves. A key informant at Abotoase reported an incident in which a man was pulled out of the water still holding onto a sack containing his luggage after his canoe had capsized. An informant at Dambai also recounted how her husband died trying to rescue his two sisters during a canoe accident when they were returning from the farm. It was also reported that accidents were frequent in Abotoase because of the desire by boat owners to maximise profits. According to the key informant, the accidents started occurring frequently when the boat owners started running shifts on market days due to the losses they incurred when many boats ran on the same day. It was then agreed that one boat would ply the route on each market day instead of the six boats that used to run, and this particular boat which used to come to Abotoase every five days would make sure it carried all traders and their merchandise. As cross-checked from other informants, it was only after the accident on September 2011 that two boats are now allowed to ply the route, though the shift system is still in place. It is important to note that these two boats are still often loaded to capacity and there is the tendency for overloading and its associated problems. Another reason that has resulted in the high level of deaths and is still likely to increase disasters when any accident occurs is the poor attitude on the part of both operators and passengers towards safety whilst on the Lake. Both boat owners and passengers always want to be forced (by the Naval Task Force) to conform to safety practices to protect their own lives. As observed from my travel to the overbank communities, everybody wore a life jacket in the presence of the Naval Task Force but began taking them off in an hour's time when we had moved away from the station. The main reason was that they did not feel comfortable wearing life jackets. Upon returning from the overbank communities (Figure 2), I observed that the boat operator distributed the life jackets thirty minutes to the landing site (where the Navy Naval Task Force is stationed) in Abotoase. The number of boating accident deaths in the past was always attributed to the unavailability of life jackets. However, there will not be much difference in the death toll now with the provision of life jackets (though not enough), if safety practices are not adhered to.

Similar safety issues apply to the transport canoes on the lake. Most canoes used for transportation by farmers and traders are less targeted by safety enforcement agencies. In Dambai, the Navy stationed there focuses on the bigger boats leaving the small boats that land in a different site to indulge in many unsafe practices. Most canoe owners reported they never got any sensitisation concerning safety practices on the lake.



Source: Fieldwork 2012.

Figure 2: A picture showing passengers without life jackets.

As implied above, there has been some ongoing safety activities aimed at reducing accidents on the lake. In the next sub-section, some safety measures are discussed with a major focus on the role of the Ghana Maritime Authority (GMA).

2.2.2 Safety measures on the lake: What stakeholders are doing

The Ghana Maritime Authority (GMA) plays a key role in ensuring safe navigation on the Volta Lake and other inland waters in Ghana. In their 2011 annual report, GMA has so far surveyed and assigned load lines to boats in seven boat stations (Appendix 2). This is to prevent overloading and to ensure that the boats are lake worthy. Also, in 2011, the authority trained about 700 personnel on safety issues in these same seven boat stations (Appendix 2). These personnel were made up of boat operators and outboard motor mechanics. Part of the training was on basic safety education, basic seamanship and the use of navigation safety devices such as life jackets and fire extinguishers (GMA 2011).

The enforcement of safety on the lake is undertaken by the Ghana Navy and ZOIL Ghana limited. GMA provides logistics for the Navy and also supports the ZOIL Ghana Limited. Six Naval Task Forces (Appendix 2) are stationed in the Dambai, Dzemeni, Tapa Abotoase, Kete-Krachi, Kpando-Torkor, and Yeji stations on the Volta Lake (GMA 2011). ZOIL has also trained about 1,300 life guards through the Ghana Navy to help in rescue operations and to assist in enforcing safety practices among users of the lake.⁴ Furthermore, a number of life jackets have been distributed among boat owners by GMA and ZOIL Ghana limited. This is to meet the safety requirements of passengers as most boat operators find it difficult to afford their own life jackets. The Naval Task Force often adopts strict measures to make sure that boat operators conform to safety practices. Some of these include instant punishments and confiscation of outboard motors which are returned once the boat operator meets the safety requirement. Most of the ZOIL life guards are natives of the various communities they are stationed and so they have a long-term presence in the communities. The reason is to ensure that there are always people with the appropriate skills to undertake rescue operations in case of any boating accident. On loading sites that the Naval Task Force is not present, the ZOIL life guards inspect the boats to make sure they meet the requirements to sail. However, as gathered from the field, these ZOIL life guards are not accorded much respect as the Naval Task Force, and both boat operators and passengers do not heed to their advices on safety.

It is important to point out that, much of these safety precautions often leave out users of canoe transport. Responses from the field indicate that canoe users are hardly targeted. The canoe disaster households interviewed informed me that they do not take part in any skills training exercise as the boat operators, they are not encouraged to use personal floating devices, and they do not have anybody coming along their canoes to check how much load they carry. This would not even be possible as it will be hard for officials to follow farmers to their farms to check on the amount of farm produce they carry. Some exceptional educational safety programmes that may indirectly target canoe transport operators and users are when institutions such as GMA and NADMO organise community meetings to sensitize them on safety precautions on the lake. It is also important to note that not all transport boats are targeted. Responses from the field indicate that it is not all boat owners that belong to the various associations of boat owners. A major reason for the refusal of boat owners to join unions is the registration fee and the regular levies that they pay. According to the chairman

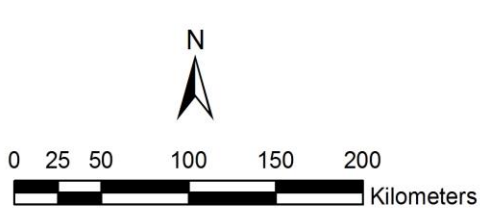
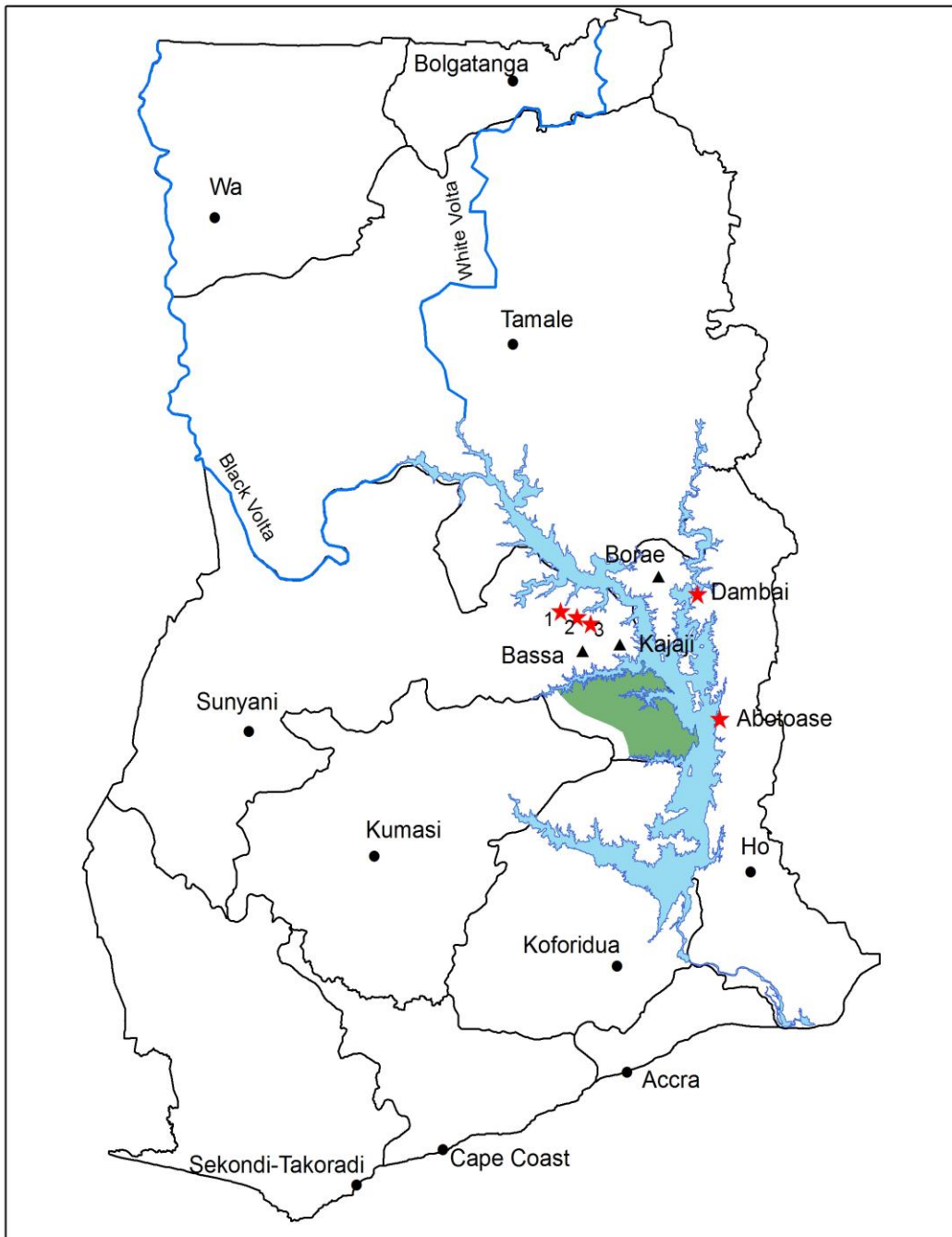
⁴ ZOIL Ghana limited. 'The Volta Lake transport enhancement project'. <http://www.zoilghana.com>

of DBOA, a new member of the association must pay a registration fee of GHS 150 (USD 75), provide two crates of beer and two crates of soft drinks, and pay regular monthly dues (the amount of which keeps changing). It was reported that in most cases, the selection of boat owners for training or distribution of life jackets by the government is done through the executives of the boat owners associations. This process sometimes leaves out boat owners that are not part of the various associations. Judging from the safety measures so far, much more needs to be done and due to resource constraints, it will probably take a long time to make boating on the lake much safer.

2.3 Livelihoods in the study communities

The study areas lie in the northern part of the Volta Region of Ghana popularly called *Volta North*. The vegetation in the area is mostly of the Savannah woodland type. The area is mainly drained by the Volta Lake and some rivers such as the Oti, Sene, and Kpassa. Agriculture is the main stay of the economy of this area with some of the major crops being yams, maize, cassava and groundnuts. Fishing is also a very important economic activity and is mostly carried out on the Volta Lake and the rivers found there. The road network in the area is nothing to write home about and it is mostly not motorable during the rainy season (Yankson et al. 2009). The area is characterised by a mix of ethnic groups and some of the major ones are the *Akan, Konkomba, Nchumuru, Ewe, Kotokoli, Bassari and Krachi*. The study was undertaken in five communities and they include Dambai, Abotoase, Kpedzi, Tsevi, and Agyatakope. The first two communities are administratively in the northern part of the Volta Region. The last three communities on the other hand are administratively located in the Brong-Ahafo Region but so far as socio-economic interactions are concerned, they are attached to Volta North because that is where they undertake most of their marketing activities.

I have discussed below the livelihood characteristics of each of these communities. I have frequently referred to the last three communities (Kpedzi, Tsevi and Agyatakope) as *overbank communities* or *overbanks* because that is the common name given to those communities both in Abotoase and Dambai. It is probably due to the fact that travelling to those communities involves crossing the lake over several nautical miles.



Source: Produced by Philip-Neri Jason-Quashigah, GIS Officer, Global Communities.

Figure 3: A map showing the Volta Lake and the study communities.

2.3.1 Dambai

Dambai is the district capital of the newly created Krachi West District in the Volta Region of Ghana. The district is located in the centre between the Northern part and the southern part of the Eastern corridor of Ghana. The Eastern corridor forms a link between the northern and south-eastern parts of the country and between Ghana and neighbouring Burkina Faso. Dambai itself forms a major gateway to interaction between the northern part of the country and the southern part, as goods are transported on the lake through the town. The town is drained by the River Oti and the Volta Lake. The main rainfall regime in Dambai is the single maxima type and occurs between April and October. The vegetation type in Dambai is that of the savannah woodland.

The main stay of the economy of Dambai is still subsistence farming in spite of the town's elevation to the status of a district capital. Some of the crops grown are maize, yam, and groundnuts. Land ownership in Dambai has a major implication for land use. Now that the town is developing, land is becoming more monetised. Some farmers own farmlands in the town while others have to cross the Volta Lake to farm. Fishing is another economic activity and it is mostly undertaken by the *Ewes*. There are also a number of people who are engaged in petty trading, such as fish mongering and shop keeping. Market days in Dambai are very important to the livelihoods of most people as traders come by buses, canoes and boats from both near and far communities to trade.

In terms of basic amenities, Dambai is better off than the rest of the study communities. Dambai has two health centres. It also has a Senior High School and a Teacher Training College. In a District Baseline Survey in 2005, Dambai has a population of 15,680 people.⁵ *Twi* is the major language spoken in the town, and forms a medium for communication among the different ethnic groups. The *Nchumurus* are the major ethnic group in the town and also the indigenes.

Boating is very crucial in Dambai. This is due to the deplorable nature of the roads. As a district capital, Dambai can only boast of about only a 300 meter tarred road. Bounded by the lake and the river Oti, most people patronise boating in their daily activities. There is a ferry owned by the VLTC which plies the route between Kete-Krachi and Dambai. Also, Dambai is one of the boat landing sites designated by GMA.

⁵ Krachi West District Assembly. www.ghanadistricts.com

2.3.2 Abotoase

Abotoase on the other hand is located in the Jasikan District. It forms a major link between the Volta Region and the Brong-Ahafo Region through the Volta Lake. Abotoase is also mainly drained by the Volta Lake.

In Abotoase, the main occupations are farming and fishing. Food crops such as cassava, maize, and sweet potato cultivation are important. Livestock such as goats and cattle are also kept. A substantial number of people are into transportation business (both road and the lake), and trading. Abotoase has a big market which is however unfurnished. The market occurs every five days in a week. Many traders come from neighbouring communities along the lake which cut across other districts and regions. Most people bring their merchandise such as fish and foodstuffs to sell. Others are also into shop keeping where they sell basic provisions. The town is used as a transit point for people to travel to cities and towns on market days. This is because, for some communities along the lake, it is only on this market day that boats provide transport services.

Furthermore, Abotoase has a government health centre and a private clinic. Due to the relatively good feeder roads linking Abotoase to other big towns like Jasikan, people can easily access health facilities in these other areas. Abotoase has educational facilities up to the Junior High school level, but mostly on market days, the schools are characterised by absenteeism of pupils.

The 2000 Population and Housing Census puts the population of Abotoase at 4,193.⁶ The community is populated by ethnic groups such as *Akans* (majority), *Ewes*, *Kotokolis*, *Hausas*, and *Bassares*. Abotoase is the nearest town for most people to settle when a boating disaster occurs, especially with regards to migrants at the overbanks. These are mostly people who live along the lake or in some of the islands on the lake and do not have anywhere to go after surviving a boating hazard. Also of importance to the study, most boating disaster children are adopted informally in this town by fishermen and fish mongers, mostly as house helps or fishing assistants.

Boating is very important as the town is the landing site for most communities along the lake. Boats from Abotoase also ply other neighbouring communities such as Dambai and

⁶ Jasikan District Assembly. www.ghanadistricts.com

Kete-Krachi, because it takes a shorter time and it is also less expensive than road transport to these communities.

2.3.3 Overbank communities (Kpedzi, Tsevi, and Agyatakope)

The three communities at the overbanks (Kpedzi, Tsevi, and Agyatakope) are located in the newly created Sene East District, which was carved out of the Sene District. The district is part of the transition zone of the two main climatic regions. The study communities have a single maxima rainfall regime and the vegetation type is that of guinea savannah woodland. The district is drained by the Volta, Pru, and the Sene rivers, as well as the Volta Lake. The Volta Lake is especially important to the study communities as they lie closer to the shores.

The main economic activity in the overbank communities is fishing among the men, and fish mongering among the women. There is also little compound farming where the people cultivate crops such as maize and vegetables around their houses. Trading in both fresh and processed fish is common. Processed fish are normally transported to neighbouring towns or to cities such as Accra and Kumasi. The important market centre to these communities is the market at Abotoase. There is also a sort of *in-kind* trade between the fishing communities and the neighbouring farming communities where the latter exchanges foodstuffs for fish with the former.

In the Overbank communities, land is owned by the people of Bassa and is said to be free. The settler only has to present some customary gifts to the chief and elders of Bassa. But during festivals, the settlers are often asked to make contributions in the form of cash, foodstuffs, or fish.

In either fishing or farming, household labour is very important in all these communities. In the fishing areas, fishermen who do not have outboard motors on their canoes rely heavily on their children to help in fishing. Also, among the fish mongers, children are mostly used to help in processing the fish. The difference however is that the children are often taken from poorer households purposely to work as servants. Farmers also rely on household, communal, or paid labour.

Basic amenities are lacking in the three overbank communities. There is only one primary school that serve Agyatakope and some other five villages. There is another primary

school that serves Kpedzi and Tsevi. The schools here are characterised by poor attendances and lateness because children have to fish before attending school. Besides, pupils that manage to complete these primary schools have to grapple with the difficulties in attending a junior high school in a bigger community far away. There is no health centre in any of these communities. The Mobile clinic that plies some parts of the Volta Lake does not come to these communities. Community members therefore have to travel several hours, mostly to Kete-Krachi in the Volta Region to access health care. One peculiar feature about these study communities is the reliance on traditional medicine. Most people due to poverty or lack of formal health facilities have to rely on traditional treatments when they fall sick.

In the three communities at the overbanks, transportation is mostly done on the lake by the use of boats or canoes. Though there are footpaths connecting these communities to Bassa, they are highly inaccessible as one needs a strong motorbike. To move to cities such as Accra, there are two main routes and both involve some form of boating. The route that most traders use to transport their goods to Accra is through Abotoase by boat, and then to Accra by bus. Another route is by boat to Kajaji, and then by bus through Kumasi to Accra. Obviously it is much easier and cheaper to use the Abotoase route. In terms of boating, there is much in common between the overbank communities and Abotoase. The boat owners at the overbank communities are members of the Abotoase Boat Owners Association (ABOA).

2.4. Summary

In this chapter, I have indicated that the role of boating on the economic development of Ghana is not only recent, but can be traced to historical times. I stressed that boating is particularly important to communities that lie along the Volta Lake in Ghana, especially among households that depend on it for their livelihood activities. I described the causes and impacts of some specific boating accidents that have occurred on the lake and made a point that the government has little records on canoe transport accidents. I further described some safety activities regarding boating on the lake that are put in place by the government. I finally described the livelihood conditions in the study communities with an emphasis on the socio-economic activities and basic amenities in the communities.

3 Method of research

3.1 Introduction

In this chapter, I discuss the methods that I employed in collecting the data for the study. I explain the reasons why I employed the qualitative research method. The qualitative research techniques used are then discussed in detail, showing the exact information that was gathered and the nature of informants. In this chapter, I also describe the choice of my translators and their perceived influence on the information gathered. I conclude by describing the limitations and trustworthiness of the study.

3.2 Choice of method and research techniques

I employed the qualitative method in collecting primary data for the study. In seeking meaning to events that occur in the world, qualitative research is able to explain issues such as “why” or “how” (Mikkelsen 1995). It gives a great deal of information on few variables and attempts to identify all existing variation regarding the researched topic (Hesselberg 2012). Qualitative research also allows for greater flexibility than the quantitative method in following interesting leads into the phenomena being investigated (Baulch and Davis 2010). The most important thing in research is that, it is the questions to be answered that must determine the methods used (Mikkelsen 1995). The nature of the study makes a qualitative approach more appropriate than its quantitative counterpart or a combination of both. Investigating households about the boating disasters they have suffered requires a method that elicits thick and varied insights into their livelihoods. The qualitative approach best achieves this purpose. The qualitative research method therefore gives a deep understanding of the extent to which deaths and loss of property from boating accidents affect the livelihoods of the households concerned and the level of their actions or inactions in securing their livelihoods.

An advantage of the qualitative research method was evident during the data collection in the study communities. The initial intention of the study was to interview only households who lost members through boating accidents. However, whilst in the field, I realised that some households had lost some significant amount of property that had implications for their well-being. I had to incorporate that aspect into my interviews and it

turned out to enrich the findings of the study. If the study had employed other research methods such as the quantitative method, it would not have been possible to investigate additional leads, and valuable information would have been lost.

Data was collected in five different communities: Dambai, Abotoase, Kpedzi, Tsevi, and Agyatakope, all along the Volta Lake of Ghana. The original plan of the study was to interview informants from only Dambai and Abotoase. Abotoase was pre-chosen due to the frequent occurrence of commercial boat transport accidents as shown by records of the Ghana Maritime Authority (GMA). However, upon getting to Abotoase, I realised that most of the accident households were at the overbank communities, hence the decision to add Kpedzi, Tsevi, and Agyatakope. It is important to note that the main interest of the study is not with the communities studied, but with households who suffer losses (deaths or property) through boating accidents, and information could have been scouted from all other areas if time and resources permitted. The choice of Dambai was to meet the special interest of the study, that is, to investigate the livelihood conditions of boating dependent farming households. These groups of households use canoes in accessing their farms.

The qualitative research techniques employed in the investigation are in-depth interviews, focus group discussion, observation, and key informant interviews. The in-depth interview technique was applied to all the communities. However, one focus group discussion was conducted in Dambai, while key informant interviews were mostly relied upon in the other communities in place of focus group discussions. Focus group discussion was organized in Dambai because it was more feasible to conduct. Observation was also an important tool that I employed in all the communities, and its contribution to the quality of the study is immense.

3.2.1 In-depth interviews

In-depth interview was the main qualitative research tool that was employed to collect data for the study. An interview is the act of eliciting information from people on a face-to-face basis, telephone or through a computer mediated communication system (Hammersley and Atkinson 2007, Dunn 2010). The study used the interview guide in which questions were semi-structured and open-ended. An interview guide contains a list of topics a researcher wants to cover in an interview and has an advantage of flexibility in allowing the

conversation to follow a natural course, with the researcher merely redirecting the discussion to cover outstanding issues (Dunn 2010). Employing in-depth interviews to investigate the livelihoods of boating disaster households was quite advantageous as the technique involves conducting intensive individual interviews and is more useful where one wants detailed information about a person's perception, behaviour, and activities (Boyce and Neale 2006⁷). In-depth interviews enabled the informants to provide a detailed account of their livelihood situations and revealed some valuable information that would not have been achieved with the use of other interview techniques.

In conducting in-depth interviews on households who experienced boating disasters, the informants talked freely and this led to important leads. For example, women household heads recounted the impacts of negative traditional practices on their livelihoods that have to do with the inheritance of their husbands' properties after their deaths, which initially was not part of my questions. This made me to incorporate it into subsequent interviews and it helped enriched the findings of the study. The argument is that, though the issue of inheritance applies to all women who lose their husbands; it constitutes an important livelihood dimension among female-headed households and may not have emerged if I had used other interviewing techniques. This would have led to an incomplete assessment of boating disaster households that are headed by women.

One set of in-depth interview guide was designed and conducted on boating disaster households in all the study communities where the views of both male and female-headed households were sought. Steps were also taken to interview households from the relative wealth divides, as well as household disasters from accidents that happened far back and those that are recent. A total of twenty households were interviewed in the five study communities but only twelve were mainly used in the analysis (Appendix 3). This was mainly due to the richness and quality of responses from informants. The purposive selection procedure was used to select informants for the study. Informants were identified by always asking people around whether they knew any household that suffered from a boating accident. The questions involved pre-disaster and post-disaster livelihood conditions of affected households, which sought to bring out the livelihood changes and vulnerability

⁷ Boyce, C. & P. Neale. 2006. Conducting in-depth interviews: A guide for designing and conducting in-depth interviews for evaluation input. *Pathfinder International*. www.cpc.unc.edu/measure/training/materials/data-quality-portuguese/me_tool_series_indepth_interviews.pdf

situation of each household. The in-depth interview guide also assessed the livelihood strategies as well as the assets that households relied on during disasters. As mentioned above, all the informants interviewed in Dambai have lost household members through canoe accidents. The interviews in the other four communities involve households who either lost members or property through boat accidents.

3.2.2 Focus group discussion

As mentioned earlier, the study conducted a focus group discussion in Dambai. A focus group comprises a number of people who under the guidance of a facilitator discusses a particular topic in detail (Mikkelsen 1995). Cloke et al. (2010) distinguish between a focus group and an in-depth discussion group, with the latter composing of participants with a mutual commitment in which feelings are freely shared on selected issues due to repetitive meetings. The aim of the focus group discussion was to clarify and cross-check some of the responses obtained from the household interviews. After an initial arrangement for the discussion failed because of the different work schedules by participants, it finally took place on a taboo day (Thursday) in which members of the community are not supposed to work. It is important for researchers in rural areas to take into consideration the free time of the people they want to participate in discussions of this nature, so as not to disrupt their economic activities. The focus group discussion was held in the chief's palace. Twelve participants attended the discussion, two of whom were women. The composition of a focus group varies, for instance, Mikkelsen (1995) puts the number from six to eight people whilst Cameron (2010) suggests a range of six to ten people. The most important consideration is that, the people chosen must be able to delve much into the issues to be addressed. There is no need to have a much fewer number of people who cannot adequately address all the topics to be discussed.

Among the participants were the chief and elders, and four boat owners who were also members of the DBOA. The discussion was conducted with the help of a translator, as many of the participants could not speak English. After a thorough introduction, the discussion kicked off and lasted for about one and half hours. General issues regarding boating and boating disasters, and livelihood conditions in the community were discussed. Some would question the characteristics of participants in the focus group as they were of different age groups and different occupations, but this was to ensure that I had adequate

clarifications and additional responses to the in-depth interviews I had already conducted in the community. According to Cameron (2010), the value of a focus group discussion is seen in the diversity of processes and practices that make up the social world, as the richness of the relationship between people and places can be addressed and explored explicitly.

The discussion went on smoothly with each participant given ample time to share his/her views. However, there were some disagreements in views on some issues, and where such disagreements occur, the chief would step in and give a final answer. The chief is accorded much respect, so any time I pressed to get more responses on some issues that the chief had already spoken on, an elder would just reply that “what *nana* (chief) has said is final”. In the traditional set up of Dambai, it is considered wrong and rude to doubt what a chief says, because you will in effect be calling him a liar. I had to play ignorance to the tradition in many occasions and pressed to get further answers, and this was always met with disapproval on the faces of most of the elders. Such an approach is one advantage of being an outsider researcher in a place, because you are always spared of perceived traditional blunders. My insistence in most cases paid off, as I got further responses. By employing focus group discussion on issues of community livelihoods especially in rural Ghana, I realised that involving the youth in the discussion enriches the data. Selecting participants of the same age groups or peers for a focus group discussion can affect the quality of the responses that will be obtained, because they have a similar world of thought.

In spite of all the disagreements among the participants, the discussion ended on a good note and most of the topics were adequately dealt with. At the end of the discussion, the participants were offered refreshment for their time. But before the refreshment was taken, I was asked to participate in libation pouring as they offered prayers to the gods of the land.

3.2.3 Key informant interviews

The study also conducted key informant interviews. These were particularly made use of in Abotoase and the overbank communities where focus group discussions were less feasible to conduct. This was mainly because it was difficult to bring respondents together because of the different work schedules and my relatively shorter stay in those communities as compared to Dambai. The aim of key informant interviews is to obtain special knowledge and the informants need not be insiders or leaders of the researched community (Mikkelsen 1995).

Nine key informants were interviewed (Appendix 4). These individuals interviewed were abreast with the issues the study sought to address ranging from boating disasters to general community livelihoods. However, not all the key informants provided information in relation to the objectives of the study. Some only provided information on boating accidents and safety as indicated in chapter two, which provided a basis for investigating the objectives of the study. In Dambai, I interviewed the chairman of the DBOA on boating disasters and safety, as well as issues concerning the passengers they carry. Similarly, the chairman of ABOA, where the boat owners at the overbank communities are also members was interviewed. A former fisheries worker at Abotoase was also interviewed. He is an elderly man who had stayed and worked at the lakeshores for a long time and therefore is abreast with the livelihoods and boating activities in the community. One striking interview was with the former Assemblywoman (local government representative) at Abotoase. Most of the accidents happened during the time she was an active member of the Assembly and is therefore abreast with the accidents that occurred and the assistances that poured in from the government and other humanitarian groups. At the overbank communities, the village heads of Tsevi and Kpedzi were interviewed about livelihoods and histories of their respective communities. Another outstanding interview was with the queen mother of Agyatakope. She played an important role during the September 2011 boat accident as a traditional leader. Furthermore, I interviewed the two district NADMO coordinators responsible for Dambai and Abotoase areas. The interview questions generally bordered on the role their organisation plays in boating disaster management which includes sensitisations, and the availability, manner and duration of the provision of relief items to affected households or victims. I also interviewed the director of Inland Waterways at GMA. Information was sought on safety issues on the lake, ongoing safety projects, and explanation to the continuous occurrence of accidents on the lake. These key informant interviews helped enriched the data and shed light on important issues that were not discovered from the household interviews. However, as implied above, interviews with the official of GMA and the two chairmen of the boat owners associations of Dambai and Abotoase mainly provided information for the second chapter of the study which merely describes the context of the study.

3.2.4 Observation

Observation was another research technique employed by the study. In qualitative studies, having a visual impression about processes and structures gives additional information to the topic being investigated. This is called observation. Hesselberg (2012) has distinguished

between observation and participant observation in which the latter involves the researcher taking part to some extent in the activities being investigated and observe while participating. In livelihood studies as this research is concerned, observing the surroundings, housing, and appearances of informants (though sometimes deceptive) gave me a first-hand impression about the relative vulnerability situation of households. Also, by travelling on a boat full of market women, loads of tubers of yam and baskets full of smoked fish, I understood to some extent, the livelihood strategies and the importance of boating to the people. Still per my travel by the boat, I observed a lot about the attitude of both passengers and boat operators towards safety measures on the lake. I also observed the various measures by which the Ghana Navy enforces safe navigation on the lake, and because of that, I did not see the need to interview any personnel of Ghana Navy. Observation proved very useful to the study as it enabled me to add and restructure some questions. Through observation, I was also able to confidently confront some informants on issues I thought they were not honest with me. For example, when an informant in Dambai told me he did not have any asset of value, I pointed to a number of guinea fowls and goats in his compound to which he finally admitted belonged to him.

3.2.5 Informal interviews

The study also made use of informal interviews. These were unrecorded conversations in which no interview guide was followed. Though such interviews played a minor role, they turned up to be very productive and helped clarified some issues. Informal interviews helped brought to the fore, some important information about the causes of boat accidents and safety on the lake. Casual discussions also helped reveal some valuable dimensions about compensations and assistance during boating disasters, which for one reason or the other, informants failed to mention.

3.2.6 Secondary data

Important information was extracted from documentary sources. Most aspects of society that we study are already produced by state departments and other institutions in the form of written materials such as reports, memoranda, and organisational charts (Hammersley and Atkinson 2007). This study obtained records of commercial boat accidents on the Volta Lake

from 1996 to 2011 and legislation on inland water safety from GMA and VLTC respectively. Also, in order to assess the level of response to the demands for relief and other assistance from government during boat disasters, documents were obtained from the Dambai NADMO district office. Information about the profiles of the various communities studied was also obtained from Ghana districts web pages. However, the use of this secondary information is minimised because of quality concerns, as much of the information collected do not correspond to the reality in the field (especially information from the district assemblies' web pages). In all, the secondary information gathered is of importance as it complements some aspects of the primary data.

3.3 Household as a unit of analysis

The unit of analysis in the study is at the household level. There has been disagreement in the meaning of the term household as to whether it is a residential unit or based on common socio-economic activities that individuals share (Yanagisako 1979). The concept of household is even more complex in African societies as it is sometimes confused with kinship. In this study, a household encompasses both persons living in and outside the same house who share, contribute, or depend on its resources. This therefore differentiates the household from the extended family system, which is mostly based on kinship ties and common ownership of resources such as land. The extended family may therefore take charge of the ownership and transfer of the common property that they share (Yanagisako 1979) which may have implications for household livelihood. Investigating households as budget units or economic units (Seddon 1976, DFID 2003⁸) in which individuals depend on or exchange goods and services among themselves makes room for deeper livelihood analysis. This involves bringing on board the young and the elderly who live in separate communities or towns but contribute or depend on the economy of a particular household.

In using the household as a unit of analysis, the study assessed the differences in livelihoods between households with the aftermath of a disaster. Analysing the household as an economic unit also gave the study the opportunity to assess the role of the extended family system in sustaining or destroying livelihoods both during pre and post-disaster times.

⁸ DFID. 2003. Understanding livelihoods in India: Diversity, change, and exclusion. www.livelihoodoptions.info

3.4 Gaining access and seeking consent

As implied earlier, the research area was new to me. It was actually the first time I had been to that part of the country. I got to know of canoe accidents in Dambai through my former High School mate who now works for World Vision International in the community. He works as a child sponsorship officer and among some of the children his organisation sponsors are children who either lost a parent or both parents through boating accidents. Dambai was the first community I visited and he was my contact person. The first person of contact the day after I got to Dambai was the paramount chief of the community, where I explained my mission and sought his consent to undertake the research in his community. He was very happy that I had come to him and mentioned that unlike me, some researchers start interviewing people without seeking permission from the chief and elders. He promised to help out with anything that would facilitate my work there, and he actually did help with organising some of the participants of the focus group discussion when I gave him a list of the people I wanted to be part of the discussion. Similarly, when I got to Abotoase, I sought permission from the chief as well. Lastly, going to the overbanks proved challenging for me as I did not initially know who to contact. I was however fortunate to meet the Assemblyman of that area who was also a boat owner. He told me since he was the Assemblyman, there was no need to seek permission again from elders, that he would only make introduction when we got there. The Assemblyman is accorded great respect in the communities at the overbanks.

Individual consent was also sought before I conducted each interview. I would explain to the informant in detail what the study was about and that I was only using it for my master thesis for a grade. I explained to them that they had the freedom to opt out at any stage they felt like doing so and that they were not obliged to answer all the questions I asked. I also sought their approval before I used my tape recorder or take a picture of them or their surroundings. I tried not to hide anything about me from informants. During my interviews in Dambai, I met an elderly man who demanded to see prove that I was a student, and I readily showed him my student identity card.

Moreover, I had to adopt an approach that would reduce the barrier between me and the informants to enable me gain their confidence and improve the quality of information gathered. I quickly made friends in all the communities I went to. I realised that in all those communities, showing respect to elders and being nice to people was key to fostering cordiality. In Dambai, I attended the naming ceremony of my friend's daughter and was

introduced as a student researcher. Though I felt embarrassed, it partly paved the way for my research as news had spread that there was a student from a Norwegian university conducting a research in the community. I was surprised to find that some of my informants, even before I introduced myself, already knew who I was. Similarly, by the time I had gotten down from the boat at the overbanks, I had interacted with most people and told them I was a student researcher. There was one elderly man who had taken a liking of me and would ask me to come over at my free time for us to chat. In this way I was able to erase all tendencies of perceived arrogance that research communities mostly attach to researchers.

3.5 Translator and translations

The study had to rely on the use of translators because I do not speak the languages at the research communities. The research employed two main translators. One person translated the household interviews in Dambai and Abotoase. At the overbank communities however, a different person translated. The reason for the change of translators is that, when it came to boarding the boat to the overbanks, my first translator refused to go with me because he was afraid that the boat would have gotten involved in an accident. Though his refusal to join the boat frustrated me, it re-echoed the perception by most people that boating was a hazard and helped justified the need for the study. In such a situation, I had no choice than to look for a different translator.

The first translator was carefully selected by me. He comes from a community closer to Dambai. He sometimes collects data for some local NGOs and so has experience in fieldwork. The reason for choosing someone from a neighbouring community was that, asking people about their livelihoods would involve them revealing personal information about their households which they may not feel comfortable talking about in the presence of a native. The *Twi* language was spoken in Dambai and Abotoase which I insisted on. This is because I understand the language (*Twi*) but cannot express myself in it. I was therefore able to follow the conversation and asked follow-up questions as if it was a direct conversation between the informant and me. My understanding of the language also enabled me to detect wrong translations which helped improved the quality of responses.

As I mentioned above, I did not get the chance to choose my second translator because I just did not have any other choice. The characteristics of this translator have many implications

for the data collected at the overbank communities, with the exception of four important interviews which I think he did not influence much. Those four interviews were conducted in the *Twi* language. Apart from the fact that he is the Assemblyman of the area and also a boat owner, one of his boats got involved in an accident in 2011. I realised that for one reason or the other, he gave me wrong translation in some of the interviews. The interviews over there were conducted in the *Ewe* and *Twi* dialects. Unlike *Twi* language, I do not understand a single word in *Ewe* and therefore did not have control over the interviews in that language and could not say whether what he told me was actually coming from the informants. I got to realise about his influence when we were interviewing a male informant who lost a wife in the boat that belonged to the translator. The informant who understands little English in many cases told my translator that he was telling me the wrong thing. I had to take over that interview and spoke *broken* English with this informant which did not go well with the translator. Also, before the start of each interview, I would ask him to plead with the informant to speak *Twi* (if he or she could), and per what I recorded and got an interpretation from a much younger person when I got home the first day, he was always asking them a straight question. He would ask, “*Would you want to speak in Ewe?*”, and to which the informant would respond in the affirmative. The answer is obvious as *Ewe* is the mother tongue of most of the people in those communities. It appeared he did not want me to have any first hand gist of whatever the informants were telling me. I had to resort to informal conversations to counter any influence he might have had on the data. My fears were confirmed when I asked a question concerning compensations paid when his own boat was involved in an accident, which I had gathered from one of his assistants at the time of the accident. It was the queen mother that I was interviewing, who had agreed to speak in *Twi* after I had pleaded with her and told her how important her interview was to my research. Upon hearing that question, instead of him translating to the queen mother, he quickly turned to me and asked, “*Who told you that?*” But I politely told him the question was for the queen mother. Such are some of the issues outside researchers have to anticipate, especially when they are confronted with a situation where they have no influence in the choosing of the translator, and they may have to adopt practical measures to ensure some quality in the responses gathered.

I want to state that not all the interviews conducted in the field employed the services of a translator. With the exception of the queen mother of Agyatakope, all the key informant interviews were conducted in English.

3.6 Dealing with ethical issues

The nature of my study had so much ethical implications. Not only was the investigation prying into people's livelihoods, it also subjected most of them to painful memories of their past with regards to the losses they incurred through boating accidents. I anticipated that the major ethical issue would be emotional traumas during interviews and I tried to put on measures to deal with that. During the interviews, most emotions were shown by women when they were making comparisons in their livelihood situation to the time their husbands were alive. I tried to minimise that by employing euphemistic expressions and by quickly diverting the topic or chipping in something that would ignite laughter. I actually felt bad in some of my interviews. I had to stop one interview and went back the following day to complete it. In most of the cases, saying something funny helped a lot to prevent them from shedding tears.

One other ethical consideration I took was always to assure them of confidentiality before the start of each interview. I would explain to them that any information gained from them would be at my sole repository, and I was not going to share it with anybody. I was already tested with the issue of confidentiality while at the field and it concerns the information I gathered from one of the assistants at the time of a particular boat accident as cited above. The boat owner (and my second translator) wanted to trick me into telling him who it was that I talked to, but failed. It was in fact ethical to protect him, because naming him could have resulted in his dismissal from working on the boat.

Lastly, in order to ensure the privacy of informants, I was not particularly interested in their names. However, there were instances where informants insisted I wrote down their names or took pictures of them which most at times I would scribble something in my field note book. In transcribing and analysing interviews therefore, pseudonyms are used to represent informants whose responses are mainly used in the study. I also did take some photographs of respondents but their appearance in the research will make it difficult for one to identify them, though informants consented to taking part and even gave me the permission to use them in my research.

3.7 Limitations to the study

The data collection was not a smooth process, but laden with some constraints. The first major issue that impeded the data collection was accessibility. The transportation system in

the research communities is deplorable and it was extremely difficult getting to some informants. In Dambai, I had to resort to the use of a motorbike which I borrowed from my friend, and sometimes we could be three people sitting on that motorbike when going to conduct interviews. In Abotoase, I could not access some two households who were living across a stream. There was a canoe ferrying people but no life jackets and I did not want to risk crossing because I do not know how to swim. The worse was my experience at the overbank communities where it was only feasible to use a canoe or a boat to ply the communities there. I failed to go to some two other communities to interview some households because I had run out of money to pay for the services of the speed canoe, as the operator needed to buy more premix fuel. Interviewing those households in the two communities would have increased the diversity in responses.

Another major constraint to the research was how I was being perceived by the informants. Though I constantly explained to them that I was a student and even showed proof, most people had problems in believing me due to two main reasons. These two reasons whipped up expectations of assistance from the research as I deduced from some of the responses and the attitude of some informants. One reason had to do with where I stayed in Dambai. Whilst at Dambai, I lodged at the guest house of World Vision International, where their offices were also situated and so somewhere along the line, some people thought I was conducting a research for World Vision International in disguise which would be used later to give out assistance. I remember when I was introducing myself to one informant about the fact that the research was purely for my academic purposes, I could hear one woman whispering to another that it was not true, that I was working for World Vision International. Also, I woke up one day to find about six people waiting at the gate and the security man told me they were looking for me. I talked to them and they told me they were coming to register their names because someone had told them World Vision was writing the names of people who lost family members through boating accidents. I then took my time to explain to them that it was actually for my academic work and they understood and went away. The most interesting thing was that, they were even from a different community, and I was amazed at how false information can be peddled so wide at such a short time. It is therefore important to note that where a researcher stays in a research community can have some implications on the attitude of informants and to some extent, the data collected. The second possible reason has to do with where I had worked before. Whilst I was planning on my trip to the overbank communities with the Assemblyman (my second translator), one of the personnel from the

Ghana Navy stationed at Abotoase recognised me to have worked for GMA. GMA as mentioned earlier enforces safe navigation on the lake through the Ghana Navy. I realised that after that incident, the Assemblyman doubted my work as solely for academic purposes. Though I tried to explain to him that I was no longer actively working with the department, I observed he still perceived me to be partly working for the government, an observation which was confirmed when he tried to hide some details from me. This therefore goes back to the question of the extent of information a researcher should reveal about his or her past activities to informants and contact persons.

Another problem had to do with the attitude of neighbours listening in during interviews. This is a common problem when doing fieldwork in the south (Hesselberg 2012). Though they sometimes made useful contributions, I realised that most informants were not comfortable talking about their livelihood situations with neighbours around. I had to postpone some interviews to return at a time the informant would be alone. At other times too, I would politely explain to the neighbours how important it was for me to interview the informant alone. Some would understand and walk away completely from the scene, whilst others would only move but within a distance where they could still listen to the conversation.

Finally, I could not obtain secondary information about specific assistances that the NADMO office in Abotoase gave out to boating disaster households, which would have added diversity to the study. The interview granted by the NADMO District Coordinator however filled this void to some extent.

However, these limitations did not have much influence on the data collected due to the careful selection of research techniques and the adoption of practical interviewing techniques to address constraints as they arose.

3.8 Trustworthiness of the research

The aim of every research is to attain some level of rigour or trustworthiness, irrespective of the methodological approach. The most important consideration is that the people using the research must be convinced that it was conducted dependably (Bradshaw and Stratford 2010). Qualitative research is often perceived as subjective and incapable of producing more dependable results as its quantitative counterpart. However, Mansvelt and Berg (2010) have

argued that, if qualitative researchers recognise their own subjectivity and positionality, and understand how power and meaning are built up in words that they use, trustworthiness will be ensured. Again, Bradshaw and Stratford (2010) have stated that in order for qualitative research to establish trustworthiness, there is the need for appropriate checking procedures that ensure that the work is open to scrutiny by users of the research and in addition to that, each stage of the research should be documented carefully. The general principles for guiding an evaluation of trustworthiness are credibility, dependability, confirmability and transferability (Baxter and Eyles in Mansvelt and Berg 2010).

This study undertook conscious efforts to ensure that its findings are credible and dependable. The first step was to undertake a review of literature regarding boating accidents and livelihoods. Therefore, anybody using the research will have the impression that the research was not conducted in a vacuum.

Furthermore, the research outlines all possible subjectivities as well as the positionality of the researcher in relation to the researched. This provides the baseline for evaluation of the research by users. Besides, the description of the data collection process and how each research technique was used plays a very important role in establishing dependability. It is however important to note that the fact that qualitative research presents results from the informant point of view means that the richness of the data depends on the people interviewed and the abilities of the researcher. In qualitative research therefore, differing results can be produced by different researchers in a particular community with similar conditions, but conclusions can be similar (Yaro 2004).

Moreover, in order to establish trustworthiness, the study adopted triangulation to overcome some of the problems that arose during the data collection process. Different types of triangulation have been put forward by researchers, but methodological triangulation was made use of in the study. Methodological triangulation involves either using different research techniques in the same method or employing different methods in a research (Mikkelsen 1995). Here, reference is made to the *within-method* triangulation where different qualitative techniques are used to complement each other. Triangulation is often perceived by some researchers to be ideal when both qualitative and quantitative techniques are employed in a single study. This study however supports the argument by Hesselberg (2012) that either method contains a variety of techniques and tools that can produce far more dependable independent results. In an instance, Cameron (2010) acknowledges the concern of some

researchers who view focus group discussion to be non-applicable to the wider population because of the smaller number of participants, and advocates the combination of focus group discussion with other quantitative data collection techniques. Though this study agrees to some extent with this view, it argues that focus group discussion can equally act as a complement to other qualitative techniques, especially, when the subject of discussion borders between the individual and societal levels. The use of focus group discussion in this study clarifies responses at the household level and brings new insight into the subject of boating fatalities and livelihoods, and so in a sense, can be said to complement the responses obtained from the in-depth interviews. In other words it is worth stressing that qualitative research can complement itself, based on a conscious selection and use of techniques.

In view of the above, transferability of findings of the study can be confidently applied but may be limited to the communities along the Volta Lake with similar characteristics.

3.9 Summary

In this chapter, I have explained the research techniques used in the study. I have made an argument that because the study involved finding out detailed information of household livelihoods, it is best to use the qualitative method and techniques. The main qualitative research technique that I used to find out about the disasters households experienced after suffering from accidents was in-depth interview. I also relied on a focus group discussion and key informant interviews to complement the responses from the in-depth interviews. I further stated that the unit of analysis of the study was at the household level, since all households in a community do not experience boating accidents at the same time. The research process was not smooth as I encountered some problems that might have an effect on the data collected. I however made a point that, after carefully documenting the research process and acknowledging my subjectivity, transferability of the findings of the study to other communities along the Volta Lake is possible.

4 Research approach—Concepts and models

4.1 Introduction

In this chapter, I assess the linkages between transportation and livelihoods, and also review the relationships among hazards, disasters and vulnerabilities. I further discuss some models or frameworks employed in the vulnerability analysis of boating disaster households. These are the Sustainable Livelihood approach (SL), the Pressure and Release model (PAR), and the Access model. The Sustainable Livelihood approach discussed here is based on the Department for International Development (DFID) livelihood framework as described in Carney (2002). The *sustainable* aspect of the SL approach is not considered in detail since the focus of the study is not on environmental or natural resource issues. Due to that, I mainly refer to it as the *livelihood approach* in analysing responses from the field. The PAR and Access models were first stated in the first edition of the book *At Risk* and restated in the second edition by Wisner et al. (2004). These last two models focus on the creation and progression of vulnerability with a particular hazard in mind. It can be seen that all along I have been using the terms hazards, disasters, livelihoods, and vulnerability without explaining what they actually mean. These concepts are explained in this chapter. This chapter provides the theoretical underpinnings on which the thesis is based.

4.2 Transportation and livelihoods

Transportation which involves the movement of people from one place to another is very vital to people's daily livelihood activities. The primary reason why people move, apart from leisure purposes, is to access basic socio-economic services (Mačiulis et al. 2009). Transportation plays a critical role in the economic, social and political aspects of the development process (Taaffe et al. 1963, Hilling 1996). Transport intervention in most countries in the developing world especially has direct and indirect benefits to the poor (Booth et al. 2000). In spite of the varying views on the role of transportation in the economies of countries, it remains a major ingredient in the development process. Transportation can therefore be said to be key to obtaining livelihoods on a daily basis. Recent calls by international organisations such as the World Bank on the need to develop intermediate means of transport that will be relevant to the productive capacities of the rural

poor gives credence to the positive linkages between transport and the attainment of decent livelihoods.

The livelihood concept (discussed below) makes clear the relevance of transportation to obtaining a living. People have secure livelihoods if they can cope with and recover from shocks or stresses they experience and are able to maintain or enhance their capabilities or assets (Chambers and Conway 1992, Ellis 2000, Scoones 2009). Transportation enables the attainment of assets and partly determines the livelihoods strategies undertaken by individuals (Booth et al. 2000). Assets are resources that people draw on to obtain a living. Chambers and Conway (1992) identify tangible assets which include stores (food, cash savings) and resources (land, water) on one hand, and intangible assets comprising claims and access on the other hand. Transportation enables individuals to gain access to schools and hospitals (human capital), to link up with relatives or friends (social capital), to gain access to markets (economic capital), and to access farms and other natural resources (natural capital). Transportation also plays a crucial role in the activities and decisions that people make in achieving a living. Scoones (1998) classifies livelihood strategies into agricultural intensification or extensification, livelihood diversification, and migration (the permanent or temporary movement of people within or outside their localities). Livelihood diversification refers to the pursuit of new income sources (Ellis 2000), either through the increasing multiplicity of activities or a shift away from traditional rural sectors such as agriculture to non-traditional activities in either rural or urban space (Start and Johnson 2004). Whether a person is into agriculture, diversifying or migrating to gain a living, appropriate and adequate transportation plays a facilitating role. Inland water transport is particularly important in this transportation-livelihood linkage because of its low cost nature. In addition, inland water transport has the ability to respond to and reflect local conditions of environment and demand (Hilling 1996).

If transportation is the core to attaining livelihoods, then hazards associated with it has the tendency of disrupting and making most livelihoods insecure, especially the livelihoods of people who either directly depend on it for a living or have no other alternative transport system to important destinations. There is however a missing link in the literature with regards to boating hazards and vulnerabilities of boating dependent households, and this study fills that gap to some extent.

4.3 Hazards and disasters

Disasters have always been an integral part of the development process. In fact there is a common notion that a complex relationship exist between disasters and development (McEntire 2004), with most development efforts concentrating on preventing disasters or dealing with the consequences of disasters. Division however exists among researchers as to the nature of disasters because of differences in the areas of focus (environmental or social) and in the different theoretical tools employed (Mirianti 2007). There is a direct link between a hazard and a disaster. A hazard refers to events that have the potential of affecting or causing damages to lives of people or places at different times (Wisner et al. 2004). The resulting consequence is a disaster, which is the disruption of the functioning of a society resulting in major human, material or economic losses which exceeds the capacity of the society to cope or recover with its own resources (UNISDR in Wisner et al. 2004, Nathan 2005). A related concept is *risk* which is sometimes misconstrued to mean *disaster* or even at worst *vulnerability*. Risk is differentiated from disaster in that it is “the probability of undergoing damages by one or several hazards”, whilst disaster refers to a “realised risk” (Nathan 2005: 3). Frerks et al. (1999) however argue that the notion that a hazard’s impact only becomes a disaster when it exceeds the capacity of people to recover without external help fails to point out the experience of disaster stricken people managing to cope with their situation. They state that unlike in the past, most disaster effects are now addressed by local means. It is also important to point out that many people do not have to be affected in a particular locality by a hazard before it is termed a disaster. The impact of a hazard event can be at the micro level such that a household’s or an individual’s livelihood can be disrupted in ways that exceed their capacity to recover or cope with their own resources. According to Wisner et al. (2004), there is no clear-cut distinction of disasters by type or scale. The phrase *external help* is therefore relative, depending on the scale at which the disaster occurs. For instance, if the disaster occurs at the household level, assistance from other members of the community or the nation can be termed *external*.

It is worth noting that disasters occur with regards to the human element in mind without which the impacts of hazards would have no damaging consequence. Emphasis has therefore been increasingly concentrated on viewing disasters as social phenomena rather than on the (natural) agents or trigger events that were the focus in the past (Weichselgartner 2001). People’s daily livelihood activities are associated with one or more forms of hazards which have the tendency of resulting in disasters. As discussed in the section that follows,

disasters are directly linked to vulnerability and so any disaster response that fails to acknowledge this linkage will make little impact. As Barkun (in Mirianti 2007) argues, to understand disasters, there is the need to look beyond the number of deaths or value of property destroyed and pay attention to the sense of vulnerability and the affected people's own perception of destruction and death. In this light, a household may lose a member or some property during a particular hazard event but may not suffer any disaster at all once such a loss does not disrupt their livelihoods. Disaster prevention efforts must analyse the livelihood situation as well as the livelihood strategies of the people concerned. The study finds it true by Weichselgartner (2001) that in order to prevent and control the negative impacts of hazard events, attempts must be made to assess and identify the vulnerabilities of people for the design of timely and effective strategies.

In this study, a disaster is defined as the disruption of an individual's or a household's livelihood by a hazardous event making it difficult for them to cope or recover without adequate assistance from either the local, national or international actors and institutions. It is important to note that there has not been a vivid linkage in the analysis of transport accident impacts to household vulnerability with the only exception perhaps being researches on the livelihoods of people who suffer some accident related disabilities. The study views boating accidents as hazards which can result in the loss of lives and property and may result in disasters or consequences for the affected households. The level of disruption of livelihoods or consequence of a hazard's impact is very much dependent on the livelihood characteristics of the affected household, especially in terms of the availability and access to assets.

4.4 Vulnerability

The term vulnerability is one of the most widely used concepts in development to the extent that it is almost becoming a buzzword. Vulnerability has evolved as a concept offering powerful explanations for the differences in the degree of damage that individuals, households, societies or regions incur from a hazard (Hufschmidt 2011). The meaning of the term varies with usage among various disciplines in development. Weichselgartner (2001) for example provides a list of some varying notions of vulnerability by different authors that reflect environmental, social, economic and political conditions. Davies (1996) distinguishes between structural vulnerability and proximate vulnerability. She refers to structural vulnerability as a permanent description of a particular group of people living with

disadvantages based on characteristics such as migrants or female-headed households. According to her, proximate vulnerability on the other hand is vulnerability that comes after people have experienced a particular hazard event. Though this study considers the structural vulnerability of the households studied, the main focus is on the proximate vulnerability. The whole idea of vulnerability therefore has to do with the circumstances that expose people to unfavourable conditions or the incapacity of people to adequately respond to events that disrupt their livelihoods. Vulnerability therefore has to be understood in terms of the social, economic and political forces operating in society at a given time (Cannon in Few 2003, Wisner et al. 2004). According to Chambers (1995: 189), vulnerability does not mean “lack or want, but exposure and defencelessness. It has the external side of exposure to shocks and risk; and the internal side of defencelessness, meaning a lack of means to cope without damaging loss.” Cannon (in Few 2003) argues that vulnerability should not be merely considered only as exposure to hazards since it plays down the dynamics of power and income distribution that exist in society. Vulnerability has spiralling effects on livelihoods and once people with few resources become vulnerable, it is mostly difficult for them to get out. Chambers (1983) argues that when people are vulnerable, they fall into the deprivation trap. According to him, vulnerability can lead to poverty because of the sale of productive assets, to physical weakness as other strong household members get exhausted, to isolation because of weak social links, and lastly, to powerlessness because of lack of voice and being exploited by the wealthy. Again, whether the transition into the deprivation trap will be immediate or not will depend on the type of hazard and the resilience level of the household.

With regards to proximate vulnerability, it is important to state that people do not experience disasters uniformly. Vulnerability differs among people in the same society or even in the same household due to variations in exposure to hazards as well as variations in the capacities of people to cope or respond adequately to the impacts of hazards. The most vulnerable groups have been found to be the ethnic minority, the old, migrant, female headed households, women and children (Wisner 1993, Morrow 1999, Heijmans 2001, Weichselgartner 2001, Few 2003, Vatsa 2009, Mirianti 2011). Wisner (1993) argue that in assessing disaster vulnerability, the focus should not just be on vulnerable groups such as low income women or minority groups, but on what the people are able to do in the given situation. In other words, they argue that the disaster vulnerability assessment should focus on causes of such a situation and the strengths and weakness of the affected people in the given situation. Ownership and access to resources varies within households and society at

large and these determine the extent to which individuals are able to improve upon their livelihoods. The situation can get worse in post-disaster times where the livelihood conditions of these vulnerable groups may deteriorate.

Ownership and access to assets greatly determine how people are able to respond to the disasters they experience. Assets are classified into natural, physical, human, social, and financial (Carney 2002). It is important to point out that assets are not just the means by which people gain a living, people's assets give meaning to their world and put them in the capacity to act (Giddens in Bebbington 1999). Among the rural poor, (physical) assets form a major base in their livelihoods and they fall on them in times of crises by pawning, exchanging or cashing them (Hesselberg in Yaro 2002, Vatsa 2004). Assets are very crucial to the levels of resilience and resistance that people show in the face of disasters. A household's resilience in resisting the negative impacts of hazard events shows the level of vulnerability (Vatsa 2004). Wisner et al. (2004) therefore argue that the forces that generate vulnerability can be countered by people's capacities to resist, avoid or adapt to those forces, and how they use their abilities to create security before or after the occurrence of a disaster. Resistance and resilience refer to the human capacity to minimise the impact of a hazard event through some form of adaptation (Few 2003). These are very much dependent on the asset base of the household or society and the availability of many livelihood options. The asset base of people determines the range of livelihood activities that they can undertake, especially, when disasters set in. For instance, households with smaller assets bases are very vulnerable to contingencies and will likely exhaust the range of possibilities available to them (Yaro 2002). Therefore, "the more assets people have, the less vulnerable they are, and the greater the erosion of people's assets, the greater their insecurity" (Moser in Few 2003: 52).

The asset-vulnerability matrix provided by Vatsa (2004) is very important in assessing vulnerability of households (Table 1). This matrix provides indicators that show either increasing or decreasing levels of vulnerability. Households with fewer assets are much more likely to experience more disasters when hazards strike and those with negative indicators in all the asset categories are likely to be the most vulnerable. On the other hand, those households with more positive indicators in all the asset categories are more likely to withstand the impacts of disasters. It even makes sense to argue that positive indicators in one asset category can make significant difference as it can form a springboard for the affected household to cope or adapt. On the other hand, the erosion of physical and economic assets with the onset of disasters can reduce access to other assets such as social asset. For example,

a household which sees the erosion of its economic assets may lose its status in the society and may have strained relationship with neighbours than before. It can further be argued that almost all asset forms are interlinked, and the erosion of one may lead to the erosion of others in what Chambers (1983) refers to as the deprivation trap.

Table 1: The Asset vulnerability Matrix		
Types of Assets	Indicator of increasing vulnerability	Indicator of decreasing vulnerability
Financial assets	Withdrawal of savings Rise in indebtedness Loans for consumption Default or postponement of loan repayment Dependence on remittances Lack of insurance	Sustained level of savings Diversified financial investment Credit for productive assets Loan repayment on schedule Availability of wide array of financial investment Availability of insurance
Physical assets	Crop failure Soil erosion and degradation of land Damaged and destroyed houses Disruption or closure of businesses Distress sale of household consumer durables	Diversified cropping Soil and water conservation Structural reinforcement of houses Business continuity plans Increased level of security for house, crops, business and household goods
Human Assets	Illness and loss of health Deaths and disability Poor nutrition Withdrawal from schools Primary concern with coping strategy Bonded and child labour	Good health Physical capacity to work Availability of nutrition Educational opportunities for children Opportunities for learning skills Independence and self-esteem
Social Assets	Discrimination based on race, sex, caste or ethnicity Social disintegration and lack of trust Lack of participation in community organizations Dependence on charity Looting and criminal activities	Relief and assistance based on equity and special needs of different social groups Community solidarity, cohesion, reciprocity and presence of social networks Participation in community initiatives and volunteerism Self-help and mobilisation of community resources Mutual support and cooperation

Source: Adopted from Vatsa (2004: 25).

4.5 Models of vulnerability

Many analytical frameworks exist in assessing vulnerability. Three of such models are discussed below with emphasis on their strengths and weaknesses. These are the sustainable livelihood (SL) approach, the Pressure and release model (PAR), and the Access model. Since there is no widely accepted model for analysing vulnerability (Hufschmidt 2011), emphasis has to be put on selecting the vulnerability models or frameworks that fit unto the local context on which the study is based. The study employs these three models because they have many components of the livelihood concept that overlap and ideas from the three models will enrich the study. Though Wisner et al. (2004) suggest that the SL approach is mostly used to design a wide range of agrarian policies, it does provide the bedrock for analysing complex livelihood conditions of people. Besides, the PAR and Access models are used with a particular hazard and its impacts in mind and are therefore much suitable to the study. The complementary nature of these models ensures a complete analysis of the livelihoods of households. However, ideas from the SL approach and the Access model are applied more in analysing the livelihoods of boating disaster households. Though the PAR model is not applied much, it provides the basis for analysing household boating disasters.

4.5.1 The Sustainable Livelihood (SL) approach

The SL approach has four interrelated components of assets, livelihood strategies, vulnerability context and transforming structures and institutions. The approach shows the livelihood activities that people are engaged in with the range of assets available to them and operating within a particular vulnerability context in a certain policy environment. The SL approach considers shocks, seasons and trends as components of the vulnerability context. The SL approach seeks to identify the major assets in a livelihood, their trends spatially and temporally and the nature of the impacts of shocks and stress over the assets (Morse et al. 2009). The SL approach envisages that the four inter-related components mentioned above will contribute to enhanced livelihood outcomes such as improved well-being, increased incomes, reduced vulnerability, and improved food security (DFID in Prowse 2008).

The SL approach has some merits that address vulnerability. It provides the basis for examining the different complexities and possibilities under which people make a living. The SL approach takes into consideration that before addressing the livelihood concerns of people, there must be some idea about what needs to be done, how and why, in a bottom-up

nature (Morse et al. 2009). Also, it is based on the recognition that the making of policy is based on understanding the realities of the struggle of poor people, on the principle of their participation in determining priorities for practical intervention, and on their need to influence the institutional structures and processes that govern their lives (DFID in Scoones 2009). This additionally provides opportunities for community-based learning where the people learn both from each other and from outsiders participating in the project as well (Butler and Mazur 2007). Furthermore, the value of the SL approach is seen in its holistic approach to development. The SL approach stresses on the macro and micro economic linkages (de Haan and Zoomers 2003) and integrates multi-sectors in livelihood studies. It covers how economic, social, cultural, political and ecological aspects combine to give or deprive people of their livelihoods. The SL approach recognizes the fact that livelihoods are not static and attempts to understand change and complex relationships of events (Scoones 2009). Finally, by putting vulnerability and external shocks at the centre of livelihood analysis, it takes a step forward from conventional development thinking (Twigg 2001).

However, the SL approach has gone a little off the tracks and livelihood frameworks are now seen as being unwieldy and unfashionable in development thinking (Prowse 2008). First, the SL approach includes broad types of capitals but failed to outline the elements each of them constitute and how they can be assessed (Morse et al. 2009). Social capital in the SL approach for example seems too optimistic as it ignores processes of patron-client relationship and social exclusion (Prowse 2008). It has also been argued that it is difficult to translate detailed analysis of the sustainable livelihood studies into interventions that will help people out of their poverty. It is obvious that there are differences in households in terms of access and ownership of assets, but most at times, SL studies fail to cover this heterogeneity. Francis (2010) argues that though the process of analysing livelihoods in terms of assets and strategies makes room for the priorities, choices, and initiatives demonstrated by poor people to be taken seriously, there exist the danger of underplaying the constraints thrown up by social relations and institutions that systematically benefit the powerful. In effect, sustainable livelihoods principles fail to put much emphasis or ignore the need to increase the rights and power of the poor and to stimulate social relations (Moser et al. 2001, Carney 2002, Scoones 2009). Perhaps the loopholes in the SL approach discussed above has led to the springing up of many livelihood frameworks, especially among Non-governmental Organisations (NGOs) into poverty interventions, and they mostly put emphasis on

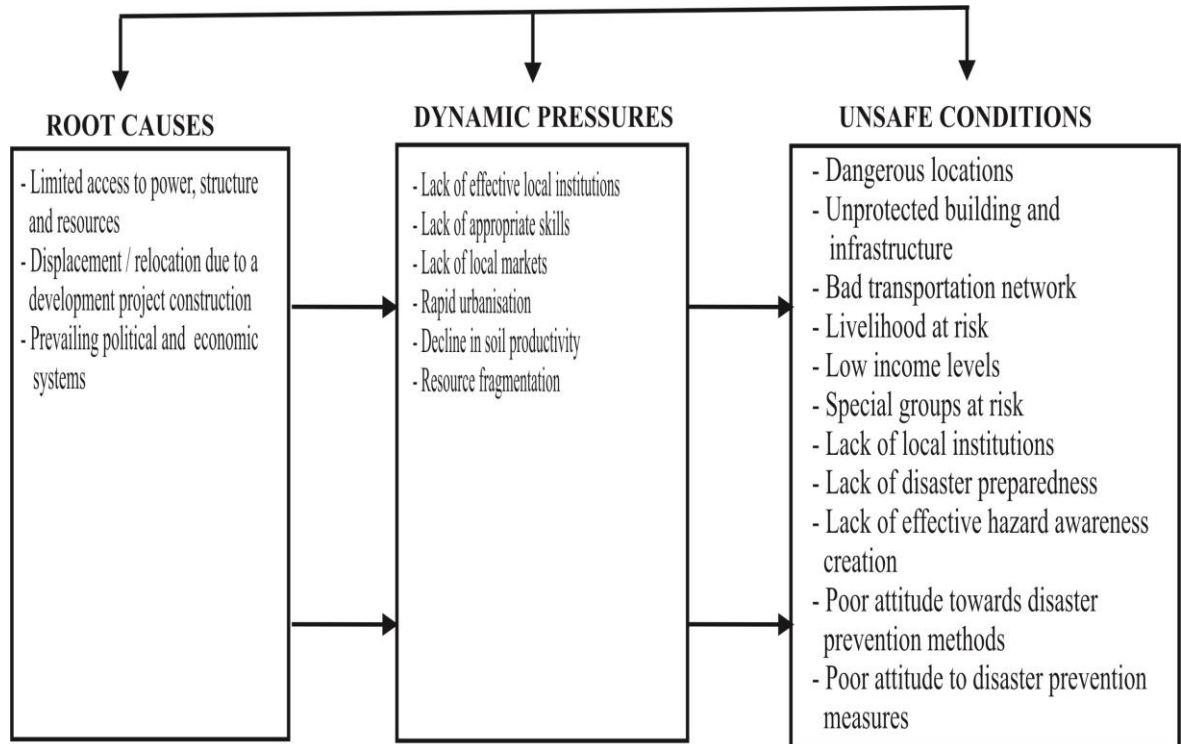
understanding poor people's context and choices (Moser et al. 2001, Carney 2002, Hussein 2002, Prowse 2008).

4.5.2 The Pressure and Release (PAR) model

The Pressure and Release (PAR) model as stated in Wisner et al. (2004) is of the idea that disasters result from the vulnerabilities that people live with and from the impact of a particular hazard. Affected people therefore face increasing pressure from both their vulnerabilities and from the impact of the hazard. The *release* aspect of the model is incorporated to imply that, to reduce the disaster, vulnerability has to be reduced. It goes that households would not easily slump into disasters after the impact of a hazard if they are less vulnerable. As mentioned above, households with some form of vulnerability are more likely to suffer more disasters after the occurrence of a particular hazard. The PAR model has three main aspects of root causes, dynamic pressures, and unsafe conditions which connect the disaster to the processes of vulnerability of the affected people (Wisner et al. 2004). In order to appropriately assess the disaster vulnerability of people, attempts must be made to trace back in history to social, political and economic factors. The PAR model therefore acknowledges the factor of time (Hufschmidt 2011), by looking back at the distant causes of vulnerability. Dynamic pressures transfer the root causes into specific “forms of unsafe conditions that has to be considered in relation to the different types of hazards facing the people” (Wisner et al. 2004: 54). Again, according to the authors, unsafe conditions signify the time and space of occurrence of the different forms of vulnerability among a population with reference to a particular hazard. These three aspects of the PAR model points to the fact that vulnerability arises because most people have inadequate livelihoods that cannot withstand shocks. The PAR model therefore seems to suggest that in order to effectively address the issue of vulnerability, there needs to be a clear link between “disaster preparedness, vulnerability reduction, and the process of development itself” (Wistner et al. 2004: 56).

In the diagram representing the PAR model (Figure 4), people's vulnerability can be traced back to some prevailing social, political or economic institutions and policies. The root causes of vulnerability may be distant, close or sometimes there may be several successive past conditions that explain the current vulnerability of people. These may prevent them from developing their full human resources or from having access to many important livelihood

resources. This condition may therefore leave them with no option than to live with a number of disadvantages that make them prone to the impacts of hazards.



Source: Adapted from Wisner et al. (2004).

Figure 4: The Pressure and Release model (PAR).

The PAR model has been used as a basis for many community based studies (especially by NGOs) in which community members use the concept of vulnerability to find meaning into their exposure to hazards (Wisner cited in Wisner et al. 2004). This strengthens local participation in making vulnerability and disaster analyses using their own resources and capacities. As mentioned above, by tracing disasters to root causes of vulnerability, it provides a better way of addressing livelihood problems of vulnerable people as the vulnerability situation may get worse after a disaster.

The PAR model has been described as static because it fails to show the adaptation strategy of people after a damaging event (Hufschmidt 2011), which is probably partly

addressed in the Access model discussed below. Also, According to Vatsa (2004), though the PAR model provides an understanding of the systemic pressures that bring about vulnerability, neither does it provide ways of reducing it nor gives information on what constitutes vulnerability at the household level. The PAR model fails to acknowledge the differences in resilience of households and assumes everybody in a community will be living with unsafe conditions.

4.5.3 The Access model

The Access model as mentioned above and as discussed by Wisner et al. (2004) is a continuation of the PAR model and focuses on what happens at the pressure point between the hazard and the long-term social processes. The Access model deals with the level of access that people have to the assets, capabilities and livelihood opportunities that enable them to reduce their vulnerability and avoid disaster. The Access model is similar to the SL approach. The only difference is that, with the Access model, vulnerability is analysed in relation to a particular hazard (Wisner et al. 2004, Hufschmidt 2011). The Access model helps in understanding complicated and diverging aspects of social and environmental events and the processes in the long run that may be associated with a particular disaster. It also asserts that different households within a society are impacted differently by the effects of a particular hazard based on access to opportunities and resources. Those households with access to a large number of income opportunities have greater flexibility in securing a livelihood under generally adverse conditions (Vatsa 2004). According to Wisner et al. (2004), the model starts with the idea of *normal life* and explains how when impacted by an occurring disaster, the livelihood strategies that households adopt, as well as the assets and institutions that they fall on. Though Maskrey (in Wisner 1993) argues that the daily life of most people in the world can best be described as a permanent emergency, the idea of a normal life is to differentiate between pre and post-disaster times. According to Wisner et al. (2004), access to physical and economic resources for example may change hands in post-disaster times, and this may mean new forms of vulnerabilities and reorientation of livelihood activities.

The Access model (Figure 3) shows a specific hazard whose immediate impact can be deaths or loss of property. Households who are already living with many unsafe conditions have to grapple with the shocks and try to devise ways of gaining their normal lives by falling

back on available assets and both state and non-state institutions. The diagram shows the first time impact of the hazard on normal lives and how households who fail to regain their normal lives are likely to fall into the next or more disasters and may be vulnerable for a long time.

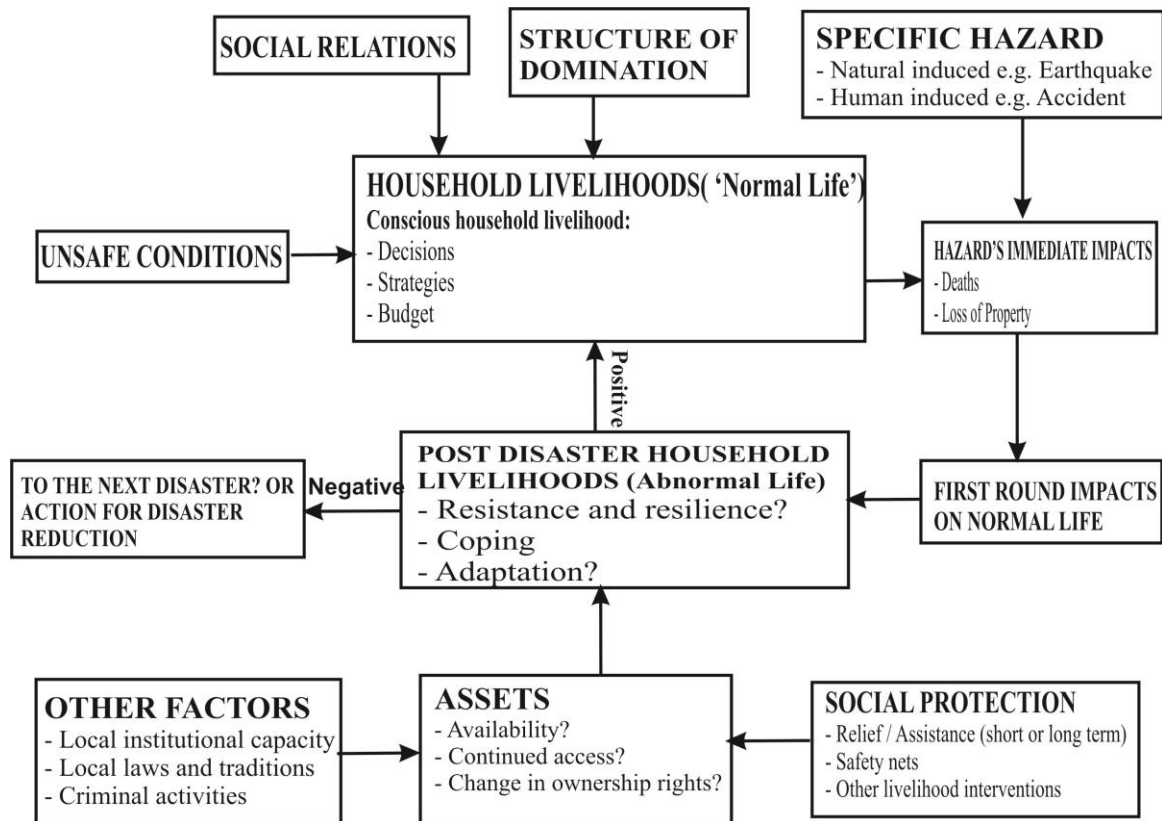
The Access model is dynamic and provides a better understanding of how people are affected by a particular hazard event, and the ways they deal with it as it unfolds. It achieves this by looking at the intra and extra-household heterogeneity that exist, which most models fail to distinguish. The Access model is also described as an “economistic model” that can be deterministic, precise or quantitative and manipulated to meet the goals of the user (Wisner et al. 2004).

Focusing on just one scale on which vulnerability manifest itself is a challenge as the interrelationship of different scales is ignored because the household is linked to the regional, national and international levels (Vatsa 2004, Hufsmidt 2011). The Access model only achieves little in explaining vulnerability and does not provide specific instruments for reducing disaster risks (Vatsa 2004). Though the Access model emphasises on access to resources and changes in access in post-disaster times, it does not show the exact circumstances under which such changes may occur. The access model does not also show how underlying social factors such as traditional practices for example may aggravate or reduce the vulnerability of households after the impact of a hazard.

4.6 Applying the PAR and Access models to the study of boating disasters

Though the two models were originally used to study natural hazards, the PAR and Access models are relevant in the study of livelihoods of households who suffer some form of disaster through boating accidents. These two models stress on the distant factors of political, social and economic settings of vulnerability and demonstrate how normal daily life deteriorates with the onset of a disaster, and this is viewed by Lewis in (Hufsmidt 2011) as key to understanding the vulnerability of people. The application of the PAR and Access models which consider hazards and disasters on one hand and vulnerabilities on the other hand to this study broadens the understanding of the livelihoods of *accident* households who use boating as a major economic strategy. This may also have the tendency of improving the effectiveness of a livelihood intervention that can be implemented. As Riet (2008) argues, because hazards and their impacts are not often explicitly linked to vulnerability contexts, it

has severe impacts on the quality of policy recommendation that can be made. Basing this study partly on the frameworks of the PAR and Access models therefore provide a deep understanding of boating accidents and their impacts *vis-à-vis* the viability of affected household livelihoods.



Source: Adapted from Wisner et al. (2004).

Figure 5: The Access model.

4.7 Summary

There is no doubt that adequate and efficient transportation is a major ingredient to improving livelihoods. However, hazards associated with transportation causing deaths or loss of property most likely result in disasters for households. People suffer from disasters when their livelihoods are disrupted in a way that makes it difficult for them to cope without assistance from external agencies or individuals. People experience and react to disasters

differently based on the differences in household livelihood characteristics. Ownership and access to assets are very important in determining the levels of vulnerability of households. The vulnerability that people live with is likely to increase with the impact of a hazard. Models employed in analysing vulnerability are numerous and the choice depends on their suitability to the study. The SL approach as put forward by the DFID focuses on the strategies that people adopt within a certain vulnerability situation by combining a wide variety of assets mediated by policies, institutions, and processes to achieve a living whose outcome can be negative or positive. The Pressure and Release model and the Access model analyse the vulnerability situation of people with a particular hazard in mind. The PAR model explains disaster vulnerability by tracing to distant causes and shows how disasters can occur with pressure from a specific hazard and the unsafe conditions that people live with. The Access model is a continuation of the PAR model and shows the progression of disaster with the impact of a hazard and how households struggle to regain their normal lives. The study combines ideas from the three models to analyse the livelihoods of boating disaster households. However, the SL approach and the Access model are much used in analysing the objectives of the study.

5 Dynamics of disaster vulnerability among households

“People knew the kind of person I was before the accident. At that time if I told a lie, no one could tell me it was a lie, but now when I speak the truth, even a ‘small’ boy can tell me it is a lie.”

Abdulai, A boating disaster household head

5.1. Introduction

After having assessed the literature relating to livelihoods and disasters in the previous chapter, this chapter opens a presentation of the responses from the informants regarding boating hazards and livelihoods. It starts by looking at the power structures in the communities and households where the powerful groups and individuals are identified respectively. It describes the reasons why people live with disadvantages and uncertainties in the study area. In other words, it looks at the root causes of vulnerability among the study households. This therefore sets the ground for the assessment of the nature and differential vulnerability that households undergo after experiencing a boating accident. Whilst assessing the nature of vulnerability change among households, the assets that households fall on are outlined. In this chapter, the focus is only on the assets households cope with after experiencing a disaster. The coping and adaptive livelihood activities are discussed in the next chapter. It is important to however point out that there is no clear-cut differences between the assets and activities people cope with during disasters. My aim for separating them is to pave way for an easy understanding of livelihood conditions of the study households. I conclude the chapter by explaining the differences in vulnerability change among households. This chapter is important because it forms a major part of the findings of the study.

5.2 The powerful and the powerless

Power dynamics is very important for the livelihoods of households both during pre and post-disaster times (Wisner et al. 2004). The locus of power in a society determines to a greater extent the livelihood options and resources available to households. Concentrating on only the inter-household power structure in a society does not give much insight into vital aspects

of livelihood conditions at the intra-household level, especially with regards to vulnerable groups (Wisner et al. 2004, Francis 2010). A composite consideration of both the inter and intra-household power dynamics is therefore crucial to post-disaster livelihood analyses. As illustrated below, describing the nature of both inter and intra-household power structure in the study communities is very important. This is in recognition to the fact that the household is not divorced from the society and the nature of relationship between households and the groups that call the shots in every community is crucial to how people obtain a living. As put forward by Morrow (1999), political and social structures do not promote the interest of everyone in a society. Power structures and social relationships therefore play a major role in analysing post-disaster livelihoods, especially, disasters that are caused by catastrophic events.

In the study communities, power varies greatly based on whether you are a native, settler or migrant ethnic group. In Dambai and Abotoase, much power resides with the native ethnic groups. These are the people who are qualified to become chiefs and hence are in charge of the realm of affairs in the communities. They have first claim to resources such as land which is a major source of livelihood for most households in the study communities. The chief and elders (at the top of the hierarchy) therefore play a major role in the distribution of land to both the settler and migrant ethnic groups that settle there. In the focus group discussion in Dambai, participants acknowledged that there is a paramount chief who is an *Nchumuru* (native ethnic group), and other sub-chiefs that represent the interests of the various ethnic groups in the community, some of which are mentioned in the early part of the study. So there are *Ewes*, *Komkombas*, *Krachi* and other minor ethnic group chiefs in Dambai. These sub-chiefs among other things negotiate conflict of interest between their members and other members of the community. The natives in Dambai therefore are relatively more powerful than the rest of the ethnic groups. These are followed by the settler ethnic groups. Again, in the focus group discussion in Dambai, it came to light that the *Wankayao* and *Banka* ethnic Groups were settled in the town during the creation of the Volta Lake. According to the participants, the *Wankayaos* are *extended natives* but were living elsewhere until their resettlement. The *Bankas* on the other hand are complete strangers that were officially resettled by the government during the creation of the lake. Per the responses from the focus group discussion, the *Wankayao* people are regarded and treated as natives. At the bottom of the power structure of the community are the migrants. These are the ethnic groups who have migrated from other parts of the country to partake in economic activities

such as fishing and farming. Some of the migrant groups in his category include the *Ewes*, *Kotokolis*, and *Komkombas* mentioned earlier. Aboatoase has a similar community power structure. Much of the power resides with the *Akans* who are the majority and they hold the paramount and divisionary chieftaincy titles. There are also various migrant ethnic groups which are of two categories, the internal and external migrants. The internal migrants are people who have moved to the community from within the country while the external migrants are the people who have moved from other countries. Majority of the external migrants are the *Zambarimas* who have migrated from Burkina Faso and have established a more or less permanent settlement in the community. Based on an interview with an elder in Abotoase, it is clear that the *Zambarimas* are at the bottom of the power structure. Furthermore, in the Overbank communities (Kpedzi, Tsevi and Agyatakope), the power structure is different. This is because they are all migrant ethnic groups who have moved there in search of economic opportunities. As indicated above, the land belongs to the people of Bassa but from interviews, there are no natives of Bassa staying in the communities. There are however leaders in those three communities in the form of Headmen and Queen mothers. Mostly, these headmen or women are chosen from people who were the first to settle in the communities.

At the household level in Dambai and Abotoase, men play a major role in decision making about the livelihood activities of their households. In fact, just like in most African societies, there is a patrilineal system in these communities. Ownership and access to resources are mostly determined by the male head of the house. In farming households, they are mainly the bread winners. Again, in the focus group discussion in Dambai, participants reported that women do not own their own land in the community. However, they responded that a woman can have access to a land mainly to plant vegetables if it is granted by the male head of the household. In the absence of the husband, the grown up male children take charge of the decision making in the house. If the male children are still young, the woman then takes charge. Women are therefore relegated to the bottom in the household power structure. This kind of power structure among households in Africa has been widely documented in the livelihood literature (Scoones 1998, Ellis 2000, Morse et al. 2009). However, the situation in the overbank communities is different. Though there is a patrilineal system in those communities, women surprisingly hold much power. Men are mostly the ceremonial heads of their households. Women take part in decision making in their respective communities. According to the queen mother of Agyatakope, women meet frequently to deliberate on

issues concerning the community, especially in fostering peace. Other responses from the communities indicate that women can have access to land without necessarily being granted permission by the husband. They therefore play an important role in the decision making in both their communities and households. According to the queen mother of Agyatakope:

“Most women, especially in these fishing communities are the economic power of their households. Most of them are into fish mongering and fish mongering is more lucrative than fishing. There are some women who process and sell the daily fish catch of their husbands and therefore contribute a lot to the household’s income.”

The only possible explanation to this glaring difference in the status of women in the overbank communities may be because they are living in a more *neutral* environment where the men themselves do not command the resources they utilise. These women could have therefore been at the bottom of the power structure in their native communities. Furthermore, it is possible that the women in the overbank communities have relatively high level of power than their counterparts in Dambai and Abotoase because they play a major role in the income generation of their households.

5.3 Living with unsafe conditions

As it will be recalled in the second chapter of this study, many households in the study area are already living with their own vulnerabilities that put them at risk to hazards. This arises from the livelihood activities they are engaged in or the locations in which they find themselves. They can therefore be said to be more likely to experience boating hazards than their counterparts in the same community who are engaged in much safer livelihood activities or settled in safer locations in a different community. This is particularly found among the households who farm across the lake in Dambai and households who live at the overbank communities (Agyatakope, Kpedzi and Tsevi). The salient question to ask therefore is, why are people engaged in hazardous activities or located in hazardous areas? Answers to this question indicate the original causes of their current vulnerability. There has been much documentation that tries to link the current settlement pattern and livelihood conditions around the Volta Lake to the creation of the Lake. Codjoe (2005), for instance, acknowledges the increment in population in the main Volta sub-basin by 62 per cent from 1960 to 1970 and this he partly attributes to the resettlement of people and migration. Other related instances are documentations on the unsustainable livelihood compensations to settlers (90

per cent of whom were farmers), insecure livelihood opportunities, and conflicts between the settlers and hosts over asset entitlement (Wallman et al. 1968, Chambers 1970). Yankson et al. (2009) also report that the existence of different ethnic groups with different settlement dates have consequences for land ownership among households. Consequently there was “absenteeism” in most resettlement communities as households tried to find secure livelihoods elsewhere, bringing about temporary and permanent springing up of settlements at strategic locations along the Lake (Chambers 1970).

It is therefore necessary to assess the motives for a particular livelihood activity or settlement choice among the people. For households in Dambai, the main motives for farming across the lake as gathered from the in-depth interviews and the focus group discussion are lack of access to farmlands in the community, fragmentation of land, decline in soil fertility, frequent stealing of farm harvest, and the destruction of crops by animals. People therefore tend to farm across the lake where land is abundant and free from thieves and animals. As stated in the PAR model, there are always distant forces that explain the vulnerability of people, and some of these forces explain why some categories of people farm across the lake. As mentioned above, the *Wankayao* and *Banka* ethnic groups were resettled in Dambai during the creation of the Volta Lake. The *Banka* people were given a portion of land that is closer to the lake by the chief of Dambai and are always subject to frequent displacement by flood waters from the lake. The field interviews show that the real natives, that is, the *Nchumurus* farm across the lake chiefly because of declining soil fertility and to be free from thieves or animals. The *Bankas* and the *Wankayaos* on the other hand do so mostly due to smaller farmlands or a complete lack of access to it. Though the chief and elders responded in the focus group discussion in Dambai that the settlers have access to free land, responses from the field indicate that some settlers would wish to stop farming across the lake if they have access to land in the community. Kwabena, a 30-year old *Banka* man who used to farm across the lake attests to this:

“I used not to like farming across the lake in the first place. It was because we did not get land here to farm. Our parents started farming across the lake when they were resettled here and when they became old, I continued to farm on that land with my brother who died eight years ago in a canoe accident. After the accident, I swore never to farm across the lake again and would rather go into begging for a living. It was a neighbour who sympathised with me and gave me a portion of his land to farm in Dambai here.”

Though the case of Kwabena may be same for other households, this is not to say that all other settler households do not wish to farm across the lake. To some, farming across the lake is a best economic opportunity. Akua, a 33 year old *Banka* woman who lost her husband through a canoe accident responded that things began to get better when her husband had a parcel of land across the lake to farm. According to her, the husband used to work on other people's farms for wages in Dambai because he had no farm land. Though farming across the lake in Dambai may be a hazard in itself, it was the only way Akua's household could obtain a descent livelihood. It can even be argued that, in Dambai, regardless of whether one owns a farm land across the lake or not, the person can still fall a victim of boating accident. As mentioned earlier, because of the communal help spirit in the study communities, people can go to help a farmer across the lake to either farm or harvest crops and they can fall victims of boating accidents. However, the most at risk group are the people who commute daily with their canoes to their farms.

The situation in the overbank communities is worse. As mentioned above, these people find themselves in areas where they have no access to basic amenities such as health care and educational facilities. With regards to transportation, they are best described as *trapped* as boating is their only means of transport to important market centres. Most people stay there not because it is an ideal place, but because they have no better option. The queen mother of Agyatakope said in an interview that most people in her community are only there because they have no better livelihoods in their areas of origin. For her in particular, she prays that her son who is now in the third year at the university gets a good job so that he can take her away from the village. Some other respondents however viewed the overbanks as their new permanent homes, whether the situation there improves or deteriorates. The distant factors that made the people to settle where they are now are both political and economic. In an interview with the village chief of Kpedzi, he recounted how they have gone through two successive relocations to settle at where they are now. According to him, the community is made up of people from various ethnic groups. He said during the creation of the Volta Lake in the 1960s, the government resettled them in some communities but they had to leave because of the limited livelihood opportunities. They then settled around the Digya National Park but were later evicted in 1989 where they find themselves in their current location. That notwithstanding, there are some people who are there willingly because of economic reasons. The land there is good for the cultivation of yam and that part of the lake is a good breeding ground for fish. The queen mother of Agyatakope for instance recounted that her parents

were migrant fishermen who used to come on fishing expedition to those areas. She said they decided to establish permanent settlement there because of the long distance they always had to travel and the good catch they used to get. To her, in spite of the lack of basic amenities, food is abundant in all those communities.

Political, social and economic reasons are therefore the main reasons why people in the study communities are engaged in hazardous activities or live in hazardous locations. It may be a political decision to relocate people for a development project to be constructed that will serve the economic needs of the whole country, but the process put the livelihoods of the local people at risk. In a bid to ensure their survival, affected households always undertake economic decisions without considering much about the hazards involved or the disadvantages that they have to live with. As found out by the study, whether people go to settle in isolated places or undertake their livelihood activities across a lake, their main motive is to ensure food security. No matter how cognitive they are about the hazards involved or the absence of other basic necessities, their current condition is best for their well-being. The major root cause of people's vulnerability in the study area therefore stems from the resettlement which was precipitated by the creation of the Volta Lake. As described above, this led to the loss of livelihood entitlements, changes in the nature of access and availability of important livelihood resources such as land both among native and settler ethnic groups, and population increases in the settler communities with their attendant livelihood problems.

5.4 Disasters and vulnerability change among boating accident households

In the section above, I have looked at the progression of vulnerability and explained the reasons why the study households are engaged in hazardous activities or located in areas rife with boating hazards. In this section, I take a look at the vulnerability that households undergo after experiencing boating hazards. This is in accordance with Davies' (1996) differentiation of vulnerability into structural and proximate. The nature of vulnerability discussed above is that of structural since it is inherent in a particular group of people. The vulnerability discussed in this major section is that of proximate, after the impact of a boating hazard. Households suffer from many disasters when they experience a hazard event because such events most at times alter their livelihoods. Households whose member(s) died through boating accidents or those that lost significant amount of property may begin to experience

disasters either immediately or gradually as their resilience becomes weaker with time. In the livelihood approach, sudden deaths or loss of property are examples of livelihood shocks that make people vulnerable to contingencies. However, as stated earlier, households will only begin to experience disasters immediately if they already have depleted assets and their livelihoods are built around the property or the household member that perishes in the accident. Households with many positive livelihood options may therefore not suffer any disasters after the loss of a member or some property through boating accidents. As mentioned above, people's ability to respond adequately to disasters depends on their livelihood characteristics both before and after the impact of a hazard.

The Access model by Wisner et al. (2004) assumes households live a normal life before they suffer from hazard events. But the question is how normal is this *normal life*? There are households who had secure livelihoods before the impact of a hazard and those households who were already struggling to make ends meet. But so far as the post hazard period is concerned in which living conditions may grow worse, both households can be said to be living a normal life. A household with either a secure normal life or an insecure normal life can suffer disasters and become more vulnerable or may not suffer any disaster at all after the impact of a hazard event.

To make clear the disasters households suffer and the nature of their vulnerability after experiencing an accident, the study distinguishes between households with insecure normal life and those with secure normal life in the following two subsections. As it is difficult to assess the "size and composition" of rural incomes (Wikan 2004) just like in the study areas, the poverty situation used here is relative. This is because people or groups undergo poverty differently (Hesselberg 1997). However, Hesselberg in Wikan (2004) makes a point that the differential poverty experienced by people should be termed relative deprivation since the meaning of poverty is complex. The distinction of the status of households in the study area is therefore based on relative deprivation and considered factors such as the asset base, housing condition and in-kind income levels of the households prior to the accident. As is described below, variations exist in the nature of vulnerability between households with the same income levels and between households with different income levels. Some households (both with secure and insecure livelihoods) may experience immediate, intermittent, gradual or no vulnerability change at all after suffering from a boating accident. The two sub-sections below are mainly descriptive of the rate at which the different households fall into vulnerability after losing a member or property in a boating

accident. Here indicators are used to assess the level of vulnerability change by comparing the ability of a household to provide basic services in post-disaster times to pre-disaster times or before the impact of a hazard. These indicators are the ability of the household to feed itself, to educate itself, to access basic healthcare and to have self-esteem. Negative or positive trends show increasing or decreasing household disasters respectively. As mentioned above, in describing the nature of vulnerability of households, the assets that they fall on to cope are outlined.

5.4.1 Vulnerability change among households with insecure normal life

This section looks at the vulnerability change in low income households after they suffer from boating accidents. Low income households in the study communities have fewer assets (such as livestock), may not receive remittances, and live in mud houses which are locally referred to as *Atakpame* in all the study communities. The *Atakpame* houses are mainly built of mud and are thatch roofed. It was found that the disasters low income households suffer fluctuate with time. The immediate period after the accident is always very harsh for the livelihoods of many of the low income households interviewed and around that time, these households share similar livelihood characteristics. The differences among low income household livelihoods appear with time after the accident has occurred depending on the resources available and other social factors. Some households may therefore obtain relatively better livelihoods with time while others continue down the line of vulnerability to a condition of helplessness. The livelihood stories below show the sequences of disasters and vulnerability change among low income households.

In the study communities, women who remain as household heads suffer the most disasters. Such is the case of Akua, who lost the husband in a boating accident and now lives with her five children. She lived with her husband in a rented two-bedroom *Atakpame* house. The husband was however able to put up a four-bedroom brick house (zinc roofed) in his hometown (Borae). She now lives in a one-bedroom *Atakpame* house with her five children. Akua is a *Banka*, a settler ethnic minority in Dambai. She narrates that before the husband started farming across the lake, things were very hard because he was just a farm labourer. However, within the four years of farming across the lake, their condition greatly improved until the accident. She narrates that:

“We had everything that we wanted. We used to get plenty food and could sell some to cater for our medical bills or pay our children’s school fees. We used to have food all year round and even used to give some, especially yams to relatives and friends who would visit us. Due to that, we used to get many visitors all the time. My husband was even able to acquire some poultry, furniture and some decent clothes. At least all I can say is that things were very good for my household. However, things have become really difficult after his death. In the immediate period after his death, I would go to my parents to ask for food. Sometimes they would give me, but most at times they used not to have themselves. I now have a small land given to me by my landlord on which I farm vegetables. Things are still very hard. Apart from problems acquiring food, I have problems paying my children’s medical bills and school fees. Two of my children frequently fall sick. One has a heart problem and I frequently send her to the hospital for medication. I cannot even afford decent clothes for social events such as funerals or festivals or even to mix with my colleagues. It is my mother who sometimes gives me her old clothes. Nobody comes around again to greet me, because I have nothing now.”

Akua’s household is therefore suffering from many livelihood disasters and their vulnerability situation appears to be increasing. Her household’s livelihood story also shows the intermittent nature of the livelihoods of low income households living with disadvantages. Here is a low income household which after barely struggling to come out of its vulnerability, suffers from a hazard and falls into more vulnerability. She does no longer have food security as before, and finds it difficult to cater for the household’s educational and health needs. Above all, she has lost her status in the society as no one respects her again. To add salt to injury, the frequent sickness of her children constitutes another source of disasters. As put forward by Chambers (1993), a new threat to a poor household is to have sick relatives or household members during disasters. This also confirms the assertion in the Access model by Wisner et al. (2004) that disasters have a time dimension, as series of disasters can follow each other if attempts are not made to reverse the disaster in the first time after the impact of a hazard. And with all her hope in the children who still have a long way to go in the educational ladder, her household will probably suffer more disasters. With no economic assets to fall on, Akua has to fall on the social capital (extended family) to cope with the disasters her household experiences. The livelihood condition of Akua is much similar to Chamber’s (1983) conception of deprivation trap mentioned earlier as her vulnerability ushers in other deprivation events. Once most low income households stumble upon hazards in their livelihood ladder, it is hard for them to get up.

There is however a difference in vulnerability change between women who remain as heads of their households and those who remarry after losing their husbands through boating accidents. The only exemption is that they tend to share similar characteristics in the

immediate period after suffering from the hazard. The livelihood story of Abena's household therefore varies with that of Akua's. Abena is a 44-year old *Nchumuru* (native of Dambai) woman who lost the husband in a boating accident about ten years ago. They had two children and were both into farming. She remarried the husband's brother four years after his death and has three children with him. They now live in the deceased husband's house which is a three-bedroom *Atakpame* house. She tells her story that:

“The time my (first) husband was alive, I cannot say we had everything but we were not having many hardships. My husband was not farming across the lake. He had land in this town but he was a member of a cooperative where they engaged in group farming in each other's farms. The accident occurred when they went to farm in a member's farm across the lake. Because of the group farming we used to get enough labour to farm large tracts of land. We could get enough harvest to satisfy our food and other basic needs to some extent. Things were however very hard for me within the first four years after the death of my husband. My husband did not really have any property of value apart from this three bedroom house. His relatives were so kind to allow me to inherit it. Looking after the children was so hard. I had to withdraw them from the school in order to reduce the burden on me. My interest was to ensure that they were in good health and well fed. However, after I have remarried one of his brothers, things have changed for the better. I do not struggle to get food now. He has a farmland in Dambai here so we are farming together. All the five children are now in school and with the National Health Insurance Scheme, we are able to access health care. Though we still lack several things, things are becoming better for us.”

Akua's livelihood condition began to get better only when she remarried. Remarrying means she still has security and access to farm land. Disasters in the household are therefore likely to be reduced. This contrasts with the case of Akua where she is the head of her household and has to rely on benefactors to get a small plot of land for vegetables as women do not have access to their own lands. It can therefore be argued that whilst marriage by men in low income households during disasters may be detrimental to their livelihoods because they may have to pay bride price, for women, marriage is an important livelihood asset. Many of the women in low income farming households interviewed in the study communities face intense livelihood disruption in the immediate period after the death of their husbands, because of the loss of access to livelihood resources. Therefore, where a woman heads a purely agricultural household in a largely dominated patrilineal system as the study communities, the vulnerability of the household will be beyond description.

It is not only women in low income households who are prone to proximate vulnerability. The livelihoods of some male-headed households get worse from the impact of disasters from boating hazards. Such households who found it difficult to meet some of their

basic needs most at time find it much more difficult to withstand the disasters that are associated with the accident. The livelihood story of Tekuni fits into this category of low income households. He is a *Konkomba* by ethnicity but was born in Dambai as his parents migrated from the Northern Region. He farms across the lake because he does not have a farmland in the town. He lives in a three-bedroom *Atakpame* house. He has eight children with her wife who died in a canoe accident when they were returning from the farm. According to him:

“My household was not having much. We were barely into subsistence farming. We used to get good harvest from the farm so food was not a problem. I used to farm plenty yam, and when we ran out of other foodstuffs such as maize, I would sell some tubers to buy. However, there were some things that I could not provide adequately the time my wife was alive. Three of my children who had gotten to the Junior High School could not continue because we had difficulties in catering for their educational needs. I had some few goats and poultry. The only decent clothing I had and still have is a funeral cloth. I was also able to buy a canoe which was very important to my household because of the farm. We were also able to pay for the National Health Insurance premiums for all my children. After the death of my wife, our livelihood situation became worse. My wife used to help me in the farm and I have not been able to marry because I do not have the money to do so. The canoe wrecked beyond repair and because I have no money, I have not been able to buy a new canoe. I now join a neighbour’s canoe to my farm but I am having problems. Anytime he is not going to the farm, it means I would not also go. This has affected my farming. I therefore find it hard now feeding my family. The rest of the children who were in the Primary School have also dropped out because I cannot buy them books and uniforms. Also, I have not also been able to renew the Health Insurance premiums for the children and have to be buying drugs from peddlers anytime one falls sick.”

It is obvious Tekuni’s household has slumped into more vulnerability and may therefore find it difficult to respond to the series of disasters that may follow. He could not provide all the basic needs of his household before losing the wife in the accident and still find it much more difficult doing so now. He has also fallen on the social capital (neighbour’s canoe) to enable him to continue with his economic activity.

From all indicators, the livelihoods of women in low income farming households in the study communities are built around male members in the household. Therefore, once such members perish accidentally, they immediately start experiencing disasters. Also, in many low income households, when their productive assets are hit by hazards, they become more vulnerable. This is because they have fewer economic assets that can be pawned to replace the productive ones. Canoes owned by households can best be described as an economic capital because they enable them to continue with their farming activities across the lake. As

described above, when low income households wreck their canoes, it becomes much difficult for them to continue with their economic activities. The above illustration also shows that households that are most structurally vulnerable are not only more susceptible to proximate vulnerability, but also have different rates at which they fall into proximate vulnerability. Low income households therefore live under delicate circumstances and so any hitch in their livelihoods may result in disasters. The findings above further confirm the assertion in the livelihood literature that most low income households fall on the social capital during disasters (Chambers 1993, Ellis 2000, Burawoy et al. 2000, Devereux 2001). This social capital helps them to cope with the disasters that they experience.

5.4.2 Vulnerability change among households with secure normal life

After describing the vulnerability change among low income households, this section describes the vulnerability situation of relatively high income households after they experience a boating accident. Relatively high income households have larger asset bases such as numerous livestock and poultry, live in brick houses with zinc roofing, and may receive remittances. The disasters and vulnerabilities that high income households suffer are not also uniform. After suffering from a boating accident, some high income households immediately experience disasters while others do so gradually or may not even experience any disaster at all. The livelihood stories of the three households below illustrate these differences.

As found by the study, no matter how secure the livelihoods of a household is, it is likely to crumble in the face of disasters if its livelihood is built around a single chain of activity. Yaw, a 35-year old man in Tsevi had a secure livelihood per the standards in the community until he lost the wife and two children through a boating accident. He had two fishing canoes and lots of goats and pigs. The wife would smoke the fish he caught and sold it in major markets. He lives in a four bedroom brick and zinc-roofed house. He tells his story that:

“My wife was always trading with my fish and we would ply the profits back into the household business. My elder daughter who died with her was 17 years old and was always helping her mother sell the fish. We were receiving annual income of about GHS 4,000 (USD 2,000). Things were much better before the accident. We used to have food all year round. Anytime our farm produce ran out of stock, we would sell fish to buy food. I had sent my children to schools in Kpando which is a town with

better educational facilities. We could access health care any time a member of the household fell sick. I also had many goats, pigs and poultry and could dress decently to any important occasion. However, the living condition in my household has greatly deteriorated after the accident. Apart from the trauma from the death of my wife and children, I also lost our fish business money. She was returning after selling the fish for the week in the market. That is what I use in buying and maintaining the fishing nets and my canoes. I had to sell one of my canoes and some goats to sustain myself, while some goats were also stolen. Now I cannot even buy my own fishing net, it is another fish monger who buys me a net and I always sell my catch to her at a reduced price. I do not get much money from that now because fresh fish does not sell high. My house has now become hell. I cannot feed my children any longer and have even withdrawn them from the school. I have sent them to live with some relatives now as I cannot look after them again. As for me, I most at times go hungry. I am now a bird, I have to beg before I can get food to eat. It is mid-afternoon now and I have not eaten since morning. My hope is now on my remaining animals and because there is no one else in the house to look after them, I cannot go far into the lake to fish as I used to.”

From above, Yaw’s household had a secure livelihood as he could provide the basic needs for his household. In the overbank communities, it is only the better-off families that are able to send their children to schools in the towns. Yaw’s household has therefore become vulnerable after the accident as it can no longer provide for the needs of its members. The household has been unable to respond to the disasters that they face due to the depletion of its assets (livestock and labour). Due to the increasing vulnerability of Yaw’s household, it may suffer more disasters. As demonstrated by Vatsa (2004), the resilience of households becomes weaker with decreasing levels of assets. Yaw’s household vulnerability can therefore be said to be setting in gradually as he continues to lose his assets.

However, some households with secure livelihoods can start experiencing disasters immediately after suffering from a hazard event. This especially applies to people who build their livelihoods in marginal areas. Such households, like that of 75-year old Abdulai in Abotoase normally have no back up plans when disasters strike. Abdulai’s household was thriving in wealth at a village in the Digya National Park until their eviction and the boat wreckage they got involved in. Abdulai is a migrant from Burkina Faso in search of economic gains and found that place to be a good haven for gaining a living. He had a five-bedroom house made of bricks and zinc roofing. He was mainly into farming and animal rearing with little fishing. He had many livestock. Food, education and health care were not also problems for the household until the accident. He narrates that:

“Life was very comfortable over there as I could afford anything I wanted. I had been staying there since 1964 and I had lots of properties. All my children were in school and we were having a good life. However, I lost all my lifetime belongings in the accident

when we were forcefully evicted. My 62 year old brother also died in the accident because he could not swim. I had about one hundred and six sheep in the boat and I hoped to sell them to start life with my family in Abotoase here but I lost all. First I had to throw away the young ones when the boat was getting overloaded. After the accident, the rescuers told me they only found three of my sheep but they did not give them to me. The only thing I came to this town with was the clothes I wore on that day. I am now living in misery. I am old now and do not even have much energy to work if I had any job. I only stay with three of my younger children and my wife in a two bedroom *Atakpame* house. It is a rented house and because it leaks, we cannot sleep anytime it rains. There is not much space so the elderly children have all dispersed and are living with other people. They have also stopped schooling because they have to work to earn a living for themselves. My wife now sells charcoal on market days and the proceeds used for the upkeep of the house, but that barely covers our feeding. We can no longer afford to go to the hospital when we fall sick. It was my brother who managed to pay the National Health Insurance premium for my three younger children. Though I have lived in Ghana for over forty years, many people still consider me a foreigner, and I do not have land here. I cannot also go back to my country because I will be a total stranger there. People no longer respect me. People knew the kind of person I was before the accident. At that time if I told a lie, no one could tell me it was a lie, but now when I speak the truth, even a 'small' boy can tell me it is a lie.”

Abdulai's household had a secure livelihood by all indicators. However, after losing all his properties in the accident, his household immediately experienced disasters. Coupled with the fact that he is now old and weak and have fewer assets, his vulnerability has soared. With most households in marginal areas therefore, no matter how secure their livelihoods are, they may not be robust enough to withstand the impacts of a hazard event. Livelihoods are more at risk where it is a migrant household. As gathered from the field, some of the evictees in the same boat who survived and were natives had gone back to start their lives in their hometowns. Others too had defied all odds and have gone back to the village in the Digya National Park just because they have nowhere to go and nothing worthwhile to do. It was mostly the external migrants, especially the *Zambarimas* who were stationed in Abotoase, partly because of the trauma they went through.

There are some other households who barely experience any disaster at all after a boating accident. As I have mentioned earlier, most households who have many livelihood options can withstand shocks. The case is the story of 78-year old Koffi who lost the daughter and five grandchildren in one boating accident. The daughter was widowed and had been staying with Koffi for about four years until the accident. He has four fishing canoes and he gives out three to other people who bring back some agreed amount of fish each day. Koffi has three wives who are about his age. The daughter was trading with the fish he catches since she was the youngest in the household. She would process the fish (smoking and

salting) and sold them in major markets. She was therefore playing an important role in the household's economy. He has a seven-bedroom house (brick and zinc roofed), many goats, sheep and cattle. He has food all year round and is able to cater for the basic needs of his family. Things have not changed very much in his household when the daughter died. According to him:

“The death of my daughter has not had much impact on our household's livelihood apart from the grief and trauma it has brought me. She was contributing so much to the household economy because she was the one processing and selling the fish I caught. However, upon her death, my younger wife who is about fifty years old is now in charge of selling the fish. Because of that we still get the usual income. I also have many grown up children who are living in other places. Any time I lack something, they usually give me money to buy. But most at times I have to make the request before they give me. So they give me money to buy new fishing nets and to repair the canoes when there are holes in them.”

Koffi still has a secure livelihood because he has assets that are robust to withstand shocks. Though his livelihood is organised along a single chain of activity, he still has many livelihood options. He was able to find a replacement when the daughter died and is therefore able to maintain his fish business. He also does receive remittances from his grown up children anytime there is a pressing problem facing his household. This is in contrast to the case of Yaw who could not find anybody in his household to take charge of marketing his fish after the demise of the wife and does not have anybody to rely on for monetary help. Though it may sound unethical, it can also be argued that the death of the daughter and five grandchildren reduced the burden in Koffi's household as there are fewer mouths to cater for now.

Households with secure livelihoods therefore have different livelihood outcomes after suffering from boating accidents. Apart from the special case of the evictees, the disasters that they face are more often gradual in nature. Their progression into vulnerability depends on the speed with which their assets are depleted. The ability of households to secure livelihoods after a boating accident greatly depends on the availability of productive resources or availability of other members that can take charge of the household business and ensure continuity. During disasters in the study communities, relatively high income households interviewed fall on a blend of their economic and social capital, depending on the nature of the household and the loss in the boating accident. The vulnerability of households usually has long-term consequences for their well-being. When households are no longer able to cater for their children for instance and have to withdraw them from schools, they create a

cyclical gap of vulnerability. These children may grow up with vulnerabilities that will define the conditions they live with and the livelihood options they undertake. Also, as argued by Davies (1996), when households with secure livelihoods fall into proximate vulnerability with little options for improving their conditions, they join those that are structurally vulnerable. As shown by the responses above, Yaw and Abdulai's households have not only fallen into proximate vulnerability, but have also become structurally vulnerable.

5.5 Explaining the differences in household disaster vulnerability

From the discussion so far, it is obvious that there are differences in disaster vulnerability not only between low income and high income households, but also among both low income and high income households. Households with similar living standards undergo different processes of disasters and are faced with different setbacks in their quest to regain their normal lives. The factors below explain why one household will fall into vulnerability immediately and the other may do so gradually or may not even experience any disaster at all. They also explain why some households have better prospects of achieving their normal lives than others. Some of these factors are implicit in the household disaster vulnerability analysed above. As mentioned before, the livelihood characteristics of households greatly determine their level of resilience and resistance to disasters. The major livelihood characteristic that explains the differences in post-disaster vulnerability has to do with the asset base of the household. As I also mentioned earlier, the asset base of a household greatly determines the degree of resistance it can put up in the face of disasters. Most low income households have fewer economic assets and are not always able to resist the disruption in their livelihoods. Due to fewer productive assets, low income households tend to build their livelihoods around the social capital, especially, around male members of the household. That is why such households as shown in the livelihood stories above experience immediate disruption of their livelihoods once those key members perish in an accident. After suffering from a boating accident, low income households interviewed in the study area tend to fall back on the extended family members. Akua had to rely on the parents to feed her family while Abena remarried the husband's brother. Most high income households in the study area also tend to build their livelihoods around both their economic and social assets. As indicated above, high income households tend to fall back more on their economic assets during disaster times.

The differences in household disasters and vulnerability in the study areas mainly relate to assets. They are due to changes in access and ownership rights of livelihood assets and other asset depletion agents such as customary rites, conflicts and theft. These are considered in the subsections below. It is however important to state that in explaining these differences, other characteristics of the household such as the type of the household head (female or male headed), existing vulnerability, and minority status (native, migrant or ethnic minority) come into play.

5.5.1 Change in access and ownership rights

Access to assets is very crucial to responding to household disasters. Moser et al. (2001) argue that the strengthening and enforcement of rights, including the right to claims is very important to securing the livelihoods of poor people in traditional societies. The concept of access is core to the Access model by Wisner et al. (2004) in which access to resources in both pre and post-disaster times is seen to explain the vulnerabilities among households. In the study communities, most at times when a disaster hits a household, access rights change hands. Minority groups are more at the disadvantage. Female-headed households, migrants and ethnic minority are particularly at a disadvantage and experience more and prolonged vulnerabilities than the rest of the households interviewed in the study communities. The comparative livelihood stories of Akua and Abena above attest to this view. Akua is both the female head of her household and also an ethnic minority in Dambai while Abena remarried and she is native of Dambai. As argued by Wisner (1993), though there is mostly a broad classification of vulnerable groups such as female-headed households and migrants, those that combine other negative characteristics will suffer more disasters after experiencing a hazard event. For example, a high income female-headed household may not suffer more disasters after suffering from a hazard event as compared to a low income female-headed household. Akua's household therefore possesses two negative characteristics of being both a low income female-headed household and an ethnic minority.

Local laws play a major role in post-disaster resource access. One important law to rural livelihoods and especially to minority groups are the laws governing resource inheritance. As mentioned above, Abena still has continued access to farmland after remarriage while Akua has no farmland because women do not own lands by themselves. The inheritance system is based on the laws of each ethnic group and can therefore vary

among the ethnic groups in one society. These laws are very important with regards to women who lose their husbands. In the focus group discussion in Dambai, participants acknowledged that among the *Nchumurus*, women are allowed to inherit some property. This explains why Abena, an *Nchumuru*, was allowed to inherit the husband's house. Akua, a *Banka*, in particular blamed her household's vulnerable conditions on the inheritance system. She started earning some income when she got her husband's house back by renting it out. According to her:

“It was my husband's relatives who worsened the condition in my household. I did not inherit anything from my husband and they have refused to take care of the children. They took care of the harvest of the year he died and I did not get anything though I toiled on that farm. They also took over everything he had including the house he had in Boraie and some other properties. This house that I am staying in now, it was my father who rented it for me and he still continues to pay the rent. It was only my husband's house in Boraie that I got back later, when my parents took the matter to the chief's palace. The chief told them if they were not taking care of the children, then they should give out the house. I now rent out the house for GHS 60 (USD 30) a year and that is what helps me in providing for the household.”

Access to resources such as land is a problem for migrants and ethnic minority groups in the study communities. In Dambai especially, though there is plenty of land at the overbanks, it still belongs to the natives. The migrant farmers across the lake do not have permanent use rights over the land and can therefore not preserve it for their generations. Nakuja, a *Konkomba* man from the Northern Region used to farm across the lake with his father, but when the father died in a canoe accident he was denied access to the farm land. According to him:

“After my father died, I went to the farm only one day at the start of the farming season. The following day the owner of the farm called me and told me to stop farming there. He said he gave that portion of land to my father and not his children. I have no land here, and I am now trying very hard to learn carpentry.”

Such households who lose access to productive assets may therefore experience many disruptions in their livelihoods and may become more vulnerable. In comparing two households with the same experience of boating hazards, the household that has continued access to productive resources is more likely to experience fewer disasters than the one that has lost access rights. Post-disaster access right is therefore a good explanatory factor for differential household vulnerability, especially for households with similar livelihood conditions.

5.5.2 Post-disaster customary rites

Social obligations such as customary rites that households perform after suffering from a hazard event drain them of their assets and make them more vulnerable. Such resources spent could at least delay the deterioration of their livelihoods. As argued by Chambers (1983), these social obligations may worsen the vulnerability situation of disaster stricken households. When Akwasi's wife who was a trader died through a canoe accident, he said he had to pay the bride price of the dead wife. He spent much money and that has deteriorated his living condition. He did not pay her bride price the time she was alive because he did not have enough money to do so, and he had to do that without choice at the death of the wife. According to him:

“When my wife died, her parents forced me to marry the dead body. This is because I had not paid her bride price yet though I had four children with her. She was not going to be buried until I paid the bride price. I had to sell all my goats to do that. I provided GHS 300 (USD 150), calabashes, and bottles of schnapps. That has affected me so much. It is two years now and I still have not remarried because I do not have enough money to do so. Not being able to marry is also affecting my work. This is because, being a single parent, I cannot work much because the children are still young and I have to spend much time looking after them.”

This alone constitutes another shock for the household of Akwasi. These assets that he sold could have been used for the upkeep of the house. A woman also responded that she had to abandon her trading business and left the community (Borae) with her two children to Abotoase. She used to go by canoe to neighbouring farming communities to buy groundnuts. She would keep it in her storehouse and sold it anytime the price went up. She said it was lucrative and her household was doing well until the death of her husband in a canoe accident. The husband was living in a farming village across the lake and would come home every weekend with his canoe. The tradition demanded that she left the husband's house one month after his funeral. She said she did not have enough money to rent a house in the community so she had to come all the way to live with her parents in Abotoase. She now finds it hard to look after herself and the children.

Though these customary rites apply to all deaths, those deaths that occur in accidental hazards are special cases because they are impromptu and do not give the households much time to mobilise resources or to make viable livelihood decisions.

5.4.3 Conflict

Another factor that leads to the depletion of assets is the conflict between livestock owners and food crop farmers and it is a widespread phenomenon in all the study communities. Livestock rearing is mostly undertaken by the people engaged in fishing and mostly closer to the banks of the lake. Food crop farming is mostly done further away from the lake. Most at times, there is a conflict of interest when animals go to destroy food crops. In the first place, in Dambai especially, some people farm across the lake in order to avoid animals destroying their crops. Such people may end up falling victims of boating accidents which will have grave consequences for their household livelihood. There are some people who because of the conflict may prefer not to keep animals at all or may be forced by the food crop farmers to dispose of their animals. When disasters occur, they do not have a strong asset base to fall on. Responses from Selasie, in Agyatakope indicate the extent to which this conflict has effect on post-disaster household livelihood. She was formerly into trading but lost her money in a boating accident. She complains that:

“I had a lot of goats, about twenty-five. I bought them from the profits that accrue from my trading. But one *Konkomba* man who farms a little up there used to come to worry me that my goats were destroying his crops. I used to tell him that the goats were also my source of living as were his crops. One day he came threatening to shoot me and my goats if his crops were destroyed again. I had no choice than to sell them all. Animals are not like human beings where you can tell them where to go and where not to go. If I still had them after I lost my trading capital in that accident, I would have sold some to continue with the trading and my livelihood condition would have been better”

There are some households whose conditions are worsened during disaster times by the same conflicts. Just like the case of Yaw above in Tsevi community. He said that his livelihood was made more vulnerable because a farmer killed his pigs. According to him:

“After my wife perished with all our fish business money, my hope was solely on my pigs that numbered twenty-two. However, when I went to my wife’s hometown to perform the funeral rites, one man named Kanton from Chagukope (a farming community) had come to shoot eighteen of my pigs. He traced them to my house and shot them. He claimed they had gone to destroy his crops. I even had to pay for the bullets he used in shooting the pigs.”

There is a widely accepted view in the study communities that it is normal for a farmer to kill or injure animals that destroy their crops. However, in doing so it puts the livelihoods of livestock owners at risk as they are major assets in all the study communities. If a household does not keep livestock because they fear they will be killed or loses its livestock after experiencing a hazard event, it is left with a depleted asset base to fall on when disaster hits.

This conflict partly explains the differences in vulnerability among households. The deplorable livelihood story of Yaw described above could have been different if his economic assets (pigs) were not killed.

5.4.4 Theft

Another asset depleting agent that explains the differential household vulnerabilities is stealing which is rampant in the study communities. Where hazard stricken households are not lucky enough, their economic assets can get stolen in the heat of their disasters. Such act makes them more vulnerable to respond to the disasters in their households. Stealing is much more frequent among households who lose members in a boating accident. During the funeral period where they do not go to their work places, thieves can be free to operate. Stealing of food crops is very common in the communities and as mentioned earlier, that is one of the reasons why people farm across the lake. Even farms across the lake are not safe from thieves in the aftermath of hazard events. An informant in Dambai responded that his wife died when they were transporting groundnuts from the farm across the lake to the house. He said after the funeral of the wife, he got to the farm only to realize that someone had gone to steal the rest of the groundnuts they had left to dry. Another widow in Dambai responded that it was the canoe of her deceased husband that they stole. The canoe capsized and was still in good condition. She said the intention of the household was to give the canoe to the eldest son to be using for the farm, but after the funeral rites, the canoe was missing and they had no money to buy a new one. Much of the theft cases involve livestock, especially when there is a reduction in the household numbers. A 55-year old watchman who used to farm across the lake in Dambai shared his experience. His wife died in a canoe accident and all his three daughters are now married. He said that: *“I had so many goats and sheep but they have all been stolen. I used to sell some in times of need after the death of my wife, but they stole them all and I had nothing to rely on.”*

Stealing is therefore one core factor that depletes the assets of people and hence increases their vulnerability. It also partly explains why one household will suffer more disasters than another. A household that has all its assets intact after suffering from a hazard will suffer fewer disasters. On the other hand, no matter how wealthy a particular household is, it will have nothing to respond to disasters if its economic assets are stolen. In reference to the vulnerability stories above and comparing the livelihoods of Yaw and Koffi, the latter has

all his livestock intact while some of Yaw's animals (goats) were stolen. Yaw cannot even go far into the lake for better fish catch because of the fear of the theft of his remaining animals.

5.5 Summary

Both inter and intra-household power analysis is important to understanding post-disaster livelihood conditions. The native ethnic groups are at the top of the power structure in the study communities as they command the resources. At the household level, women are at the bottom of the power structure as is the case in most African traditional societies. Political, social and economic reasons explain why people in the study communities are engaged in hazardous livelihoods or live in areas that have many disadvantages. Apart from people making conscious economic decisions, the study found that the creation of the Volta Lake brought about many livelihood problems and these explain why some of them are living with unsafe conditions. The study also found that most households, both high and low income, have experienced some disasters after losing a member or property through boating accidents. This vulnerability change among the study households was assessed by comparing the ability of households to provide their basic needs both before and after they experience a boating accident. There are however differences in the disasters households experience and in the levels of their vulnerability. These differences are largely due to the differential household characteristics and in some asset depletion agents. The study further found that some marginalised groups such as female-headed, migrant and settler households lose access rights to their livelihood resources after they suffer from a boating accident. It was also revealed that other social factors such as theft, conflict, and customary rites during disasters helped to deplete the asset bases of households and partly account for the differences in vulnerability among both high income and low income households.

6 Post-disaster household livelihood strategies and support services

“If I stumble with my bicycle and fall on the way to the farm I can quickly pick myself up and continue but I cannot pick myself up with ease if I have an accident with a canoe.”

Kwabena in Dambai, who formerly owned a farmland across the lake

6.1 Introduction

In the last chapter, the vulnerability situation in post-disaster times and the reasons for the differences in vulnerability were outlined. This chapter continues the analyses of responses by looking at the livelihood activities households undertake in post-disaster times. It also looks at the support systems available to households when disasters strike. In this chapter, I make the argument that because of the limited livelihood opportunities in the study areas, most boating households try to adapt their activities related to boating after experiencing an accident. This chapter complements the previous chapter and therefore helps give a holistic understanding of post-disaster livelihoods in the study areas. As it can be recalled, I am not concentrating on the assets households use in coping as outlined in the last chapter, but in the activities. I want to repeat here that livelihood assets cannot clearly be divorced from the activities.

6.2 Revisiting the literature on coping, adaptive and substitutive strategies

Coping and adaptive strategies are two important concepts that come to mind in the livelihood literature in post-disaster times. The destruction of productive assets forces households to adopt new strategies in order to ensure their future survival (Ellis 2000). However, there may be some cases where there are limited strategies for households to undertake and they will have to maintain their hazardous old strategies or undertake the old activities in a different way. The difference between coping and Adaptive strategies is only a matter of time. Davies (1996) explains coping strategies to be short-term responses to shocks in the household and adaptive strategies as long-term readjustment of household livelihood activities. Most hazard stricken households therefore adopt coping strategies first with the onset of disasters. These short-term measures are undertaken not because of their

“effectiveness”, but also to avoid future long-run cost to the household (Devereux 2001). I however argue that this depends on the nature of the hazard that causes the disaster. If a disaster sets from a sudden hazard event, the immediate aim of most households will be to take care of its basic needs and not so much concerned about the future. A key feature is the manner in which the disposal of household assets is sequenced in order to cope with catastrophic events (Ellis 2000). Though households will always dispose of their assets according to their importance to the family with the productive one last (Davies 1996, Ellis 2000), there may be nothing like sequencing with regards to low income households as they will have to activate whatever asset they have in stock because of the lack of or low asset bases.

On the other hand, adaptive strategies which are the long-term livelihood strategies that households adopt during disasters can be negative or positive. Positive adaptation is a conscious household decision and it can increase security while negative adaptation is an unconscious and irreversible livelihood decision which may not increase security (Ellis 2000). The adaptive strategies undertaken by households in sudden catastrophic events may therefore be different from those hazardous events that set in gradually.

A related concept in post-disaster household livelihoods is the ability of households to substitute one asset for another or one livelihood activity for another. The most important aspect in poor households is how they are able to find viable livelihood activities to replace their old ones as they generally have fewer assets. Low potential for substitution increases the vulnerability of households (Ellis 2000). Households that find themselves in locations with little mix of livelihood options will therefore find it difficult to find an alternative viable strategy during times of disasters. This is contrary to Davies’ (1996) assertion that households in marginal areas have knowledge of which pathways to take during crisis. I repeat my argument that households in marginal areas, especially those who experience sudden hazard events, may not have any back-up plan at all.

6.3 Post-disaster livelihood strategies in the study areas

This major section is divided into two sub-sections. I look briefly at the short-term livelihood activities that disaster households undertake. I also analyse the long-term livelihood activities that households undertake in relation to boating after experiencing an accident.

6.3.1 Short-term post-disaster livelihood activities

Short-term activities that boating disaster households undertake include activities in the immediate period of disasters and those activities that households undertake from time to time to support their main livelihood activity as the disaster unfolds. Contrary to some literature that seeks to view coping strategies as a normal part of the livelihoods of people, I refer to the short-term activities that boating disaster households undertake as survival strategies. The notion of coping strategies assumes a common pattern and cycle of activities that households follow anytime disasters set in (Davies 1996). As mentioned above, such notions are however best applied to cyclical disasters that are caused by gradually occurring events such as seasonal droughts or seasonal floods. As argued by Wisner et al. (2004) in the Access model, the activities that households undertake during disasters caused by sudden hazards are not based on conscious decisions.

As mentioned above, this section looks at the short-term activities, and most of the strategies considered here are those undertaken by low income households. As it can be recalled, low income households interviewed generally do not have valuable assets to dispose. The only available asset that low income households cope with in the short-term is their labour. Most women undertake survival strategies immediately after losing their male household heads by dispensing their labour. This is mostly because such deaths are sudden and they may happen at a time when there is absolutely no money or food in the house. As the case of Akua above, her husband died in the farming season (lean) where she had nothing in the house. Her main interest was to provide food on the table for her five children. She said that in addition to the help from her parents (mentioned above), she used to go to the market place in Dambai to carry the wares of traders for wages when they arrive by boats, canoes or cars. She said there were times she would not get anything to carry and that during those times, her household would go hungry. Furthermore, according to Abena (also cited above), she used to carry water from the lake in a basin to people who needed it after the husband died in a canoe accident. This was the immediate period before she remarried the husband's brother. She narrated that it was more of begging people to allow her fetch water for them and would collect any amount of money they paid to her. Similar trends are associated with trading households at the overbank communities. Adjoa in Tsevi also reported that she managed to survive the 2002 boat accident (Appendix 1) but lost her trading capital. She is the household head of four children and had to engage in short-term activities to ensure their survival until she got some money to resume her trading business. According to her, she used

to help other fish mongers in processing their fish for the market. She said she used to spend the whole day looking for anybody who needed her help. She also used to accept any amount of money they would offer to pay her as she had no choice of bargain.

These short-term strategies are not very different from that of male-headed households who fall into disasters after experiencing accidents. They also dispensed their labour. Farmers were especially engaging in wage labour. Kwabena moved from the overbanks to farm in a small land in Dambai after losing his brother in a boating accident. He said because of the small size of his farm, he used to finish farming very early during the farming season and would employ the rest of his time farming in other people's farms. He said some people pay for his services in cash, while others pay in the form of foodstuffs. Mostly, those who pay with food items are people he approaches voluntarily asking to help. He said he does not care much about the amount he is paid as he needs to feed his household. Obour in Dambai is also another farmer who engages in wage labour. As for Obuor, he mostly leaves his own farm to engage in wage labour on other people's farms anytime the household faces pressing problems. Some of these times are when he needs to buy food, pay school fees or send any member of the household to the hospital. These strategies are merely aimed at diversifying household income sources. This also confirms the argument by Ellis (2010) that low income farming households mostly diversify within the farming sector.

These short-term survival strategies undertaken by boating disaster households are mainly aimed for the immediate consumption of household members. Such strategies may have future negative consequences for household livelihoods. According to Davies (1996), these short-term strategies, especially among households with little options only enable them to stand at one place without moving forward. Both Akua and Abena reported to have developed neck and waist health related problems respectively, from the impact of the weight of the items they were carrying. This also confirms the assertion by Wisner et al. (2004) that there is a tendency for ill health as poor people rely more on physical work to cope. Ill health further prevents them from engaging in works that are physically demanding and reduces their income earning opportunities. As mentioned above, human capital is an important asset among low income households. Also, Obuor also reports of a decreased food production because he always leaves his own farm to work on other people's farms. He narrated that most at times, he would return to his own farm to find it outgrown with weeds which affects the yield he gets. These coping/survival strategies are therefore undertaken as a result of the

necessity for immediate consumption as none of these households anticipated suffering from boating accidents at such times that they are already vulnerable.

6.3.2 Adaptive strategies by boating disaster households

The main thrust of this section is to look at the long-term livelihood activities that households adopt in the wake of disasters in relation to boating hazards. As I have been discussing all along, without boating, it will be impossible for households to farm across the lake or for traders in the overbank communities in particular to transport their fish and other agricultural products to market places and cities. I have made it clear in the previous sections that the livelihood options available to households engaged in boating are limited. I further stated that most households engaged in boating are structurally vulnerable and that their vulnerability can be traced back to distant socio-economic and political factors. In household disasters caused by sudden hazard events in areas with little livelihood opportunities, adaptive strategies are mainly to ensure the continuous survival of the household members without mainly gearing towards secure livelihoods. Most boating disaster households interviewed were very careful not to fall victims of losing a member or property in boating again. As can be recalled, the fact that boating is tied to the livelihood activities of households studied boils down to the question of whether to continue with boating or not after experiencing an accident. The study identified three main categories of long-term strategies among boating disaster households. As mentioned, these strategies are based on considerations on boating hazards. These strategies are the avoidance adaptive strategies, partial avoidance adaptive strategies, and coping adaptive strategies. In analysing these strategies, attention is paid to the viability of such strategies as to whether they constitute positive or negative adaptation according to Ellis' (2000) conception.

Households that adopt the avoidance adaptive strategies are those that stop boating completely or reorient their livelihoods away from boating after suffering from boating hazards. I want to repeat here that, households interviewed included those who farm across the lake or those traders that mainly utilise boating services and have suffered from a boating accident. In Dambai, some of those farming households that suffered an accident try to avoid boating by accessing farmlands in the community without considering the quantity or quality of the land. Such is the strategy undertaken by Kwabena's household in Dambai after losing his brother in a canoe accident. After the accident, he got a land to farm around the

community. He said the land is small and they get less harvest as compared to the time he was farming across the lake. He however said he was happy to have stopped farming across the lake. According to him,

“I do not want to risk me or any member of my family dying. If I stumble with my bicycle and fall on the way to the farm I can quickly pick myself up and continue but I cannot pick myself up with ease if I have an accident with a canoe. It is tough here but I am managing to provide for the household. To me our lives are important for our future survival.”

It is not everybody that is able to access farmlands in the community. In the focus group discussion in Dambai, participants reported that there are many instances where people migrate from the community to other communities mainly because they could not get farmlands in the community. This is particularly attributed to the characteristics of the household and asset depletion forces discussed above. It also confirms the view by Scoones (1998) that migration is in essence a livelihood strategy that is undertaken by households during desperate times. However there is a difference between migration that is undertaken by households by choice and a distress migration (not by choice). Davies (1996) argues that distress migration has negative implication for future household livelihoods. The migration of boating disaster households as gathered from the focus group discussion is distress in nature and arises from the two cutting edges of unwillingness to continue with boating and not being able to access farmlands in the community. There are also some trading households that undertake their livelihood strategies away from boating. As I have mentioned before, trading is very important among women in the overbank communities. The queen mother of Agyatakope reported that almost every woman in her community was going into fish mongering (trading with processed fish). Most trading households stop boating either because they no longer have the means to engage in their normal trading activities or because of the trauma from their experience and the fear of getting involved in another accident. Selasie, a former fish monger in Kpedzi abandoned trading because she no longer has the economic power. She is the head of her household as her husband passed away some few years ago. As mentioned above, she lost her trading capital when the boat she was travelling in capsized. She is now into compound farming where she farms vegetables. According to her, the new activity is less lucrative but she is trying to raise some money so as to resume her fish mongering business. She said buying fresh fish from fishermen is expensive especially for those women whose husbands are not into fishing. Though Selasie has not been trading for about two years, she expressed the hope to resume anytime she has enough money. There are

however some households, especially the evictees from the Digya National Park who deliberately abandoned their boating activities. As noted above, some of the evictees went back to the park in defiance and partly because human rights activists are interceding for them. Ramatu's household in Abotoase is an example of households that have stopped boating. She is not the household head but is currently the one working and providing for the husband and five children. She used to trade in processed fish and groundnut. She used to move with her goods by boat to sell in Accra or Kumasi. However, when she got involved in the boating accident after their eviction, she decided she would not undertake boating again. She now sells *Kokoo* (porridge) and fried Bean Cakes on daily basis in Abotoase. She said she has been doing this for about five years now to feed her family. According to Ramatu, it is not the best for her household but she sees it to be a worthy strategy. To her:

“What is the point in going back and continuing with my trading? I used to get plenty money but I lost all. My husband also lost all his property in the accident. Now those who have even gone back are living in fear because they do not know whether things will go in their favour or not. I did not go there because I have the fear that I may get involved in another accident. I am traumatised by the accident I had and I do not even like going to the banks of the lake again. It is better for me to stay in my poverty here.”

Just like the farming households, trading households who stop boating activities do so in order to avoid suffering from another accident. It may also be because they no longer have the means to continue with their trading activities as in the case of Selasie.

Furthermore, those boating disaster households that adopt coping adaptive strategies still continue wholly with their boating activities. Such cases were confirmed in the focus group discussion in Dambai among farming households. Participants in the discussion attributed this to households who could not access suitable lands in the town and do not also want to migrate. Better still, such households consider boating hazards an inevitable aspect of their livelihoods and would continue with it even after suffering an accident. The chief of Dambai in the focus group discussion responded that: *“Canoes that people use to their farms here are also like cars that people use to go to their offices. When someone dies in a car accident on the way to the office, does his/her family members stop boarding cars?”* It is therefore important to repeat the argument that many of the households continued with boating activities in the post-disaster period because they do not have many livelihood options. This is exemplified by the story of Obuor in Dambai who lost his 25-year old son in a boating accident. They were both farming across the lake. He reported that his wife advised him to stop farming across the lake, but he did not do so because the land they own in

Dambai is very small and less fertile. He said he does not have any skill such as in carpentry or masonry that would enable him to abandon farming completely. He continued that it is even more difficult to farm across the lake now but he has to make do with it. According to him:

“I used to rely on my labour and that of my son’s. Now I am the only one and I have no money to hire labour. To make matters worse, my canoe got wrecked beyond repair and I cannot afford to buy a new one. I now have to join my brother’s canoe to my farm but most at times the canoe gets full and some of us have to walk along the lake to a village called Njare so that the canoe comes back after dropping the first batch of people. Njare is closer to the farm but it is far to walk from here. Sometimes after getting to Njare, we have to wait for a long time for the canoe to come back. I always end up wasting so much time going to my farm. This affects the output I get from the farm. The only thing is that it is better to farm across the lake than here. When you are farming in Dambai here, you have to clear weeds about four times but only two times in the farming season across the lake. This is good for me since I am the only source of labour. I am just continuing to farm there in order to prevent my family from starving.”

An important consideration for Obuor’s household is to ensure the efficiency of his household labour. This is because apart from the low yields, farming in the community would have meant spending more energy clearing weeds. One major reason why people continue to farm across the lake after an accident may therefore be to manage the only asset they have, that is, the household labour, especially when it is reduced by deaths through accidents. Furthermore, some trading households who fall victims of boating accidents also remain in boating. Ama was also a victim of the Digya boat accident and she lost the husband in the process. She has since returned back to the village where she resumed her trading activities. The interview was granted when she came to Abotoase market with her wares to sell. She claimed she has nothing to do and she would take her chances. She said going back and continuing with her boating activities is the best strategy for her household. According to her, without continuing with her boating activities, her household would have to beg before they eat because there was no viable livelihood activity they could undertake in Abotoase.

Lastly, households that adopt partial avoidance adaptive strategy try to continue with their boating activities while putting in measures to prevent loss of lives or property after experiencing disasters through boating hazards. This strategy is particularly common among traders in the overbank communities. Among traders in the overbank communities, some households who suffered boating disasters prefer to send their processed fish through the boat operators. They establish contact persons at the other end (market centres) who would then sell the fish for them. After selling the fish, the contact person also sends the money back

through the boat operators again. In such a case these women traders do not use boating often, except when they are going to the hospitals or to take care of some urgent issues in the towns. There is however some amount of money that is charged on both the fish sent and the money that is received. According to responses from the field, a basket of processed fish is charged between GHS 200 and GHS 500 (USD 100 and 250 respectively) depending on the weight. The money that is also sent back attracts a charge of between 5 per cent and 10 per cent of the total sum. The advantage however with messaging the fish is that if anything happens to the boat, the boat owners refund the money or pay for the cost of the goods. All monies that are collected are always recorded at the boat station in Abotoase so that they would not be any confusion as to amount lost in any boating accident eventuality. However, the boat owners do not pay monies that the traders carry on them when they go to the market centres themselves. Adjoa in Tsevi is one such woman who does not send her fish to the market by herself. She was involved in a boat wreck in 2002 and has since been sending her processed fish through the boat operators. She explains her reasons below:

“After the 2002 accident that I was lucky to survive, I find it much safer to send my processed fish through the boat operators. My children are still young and I do not want to die early and leave them. When you send the processed fish through the boat operators, you lose so much money than when you go with it yourself. Apart from the fact that the charges for transporting them are high, I could always bargain for higher prices if I were to be selling it myself. Secondly, the contact person who sells it may not be honest with me, but there is nothing I can do. Once I get a little profit on each basket that can enable me look after my children, I am content with it. To me that is the best way to protect the money I use for trading. Unlike the 2002 accident in which I lost so much money, I did not lose any money in the accident that occurred in September 2011. The boat operators were returning with my money worth about GHS 5,000 (USD 2,500) from the fish that was sold. It sunk in the water but they had to refund everything to me. If I were in the boat I would either be dead or would have lost my trading capital.”

The queen mother of Agyatakope also started sending her fish because of a trauma she had. She never got involved in an accident but said she had to witness all the bodies that were pulled out of the water in the September 2011 boat accident around her locality because she is the traditional leader. Since then she finds it safer not to undertake boating herself. These stories were also confirmed by an assistant in the September 2011 *accident boat* who said they ran out of business for about a year because of all the monies they had to refund.

Many reasons therefore explain why people undertake the activities they do after experiencing boating disasters. As being discussed, boating goes side by side with the livelihood strategies of the study households. Any adaptive strategy that households

undertake during disasters most at times concerns boating. Most households who abandon boating mostly do so for fear of losing a member or property. As stated above, among low income households, especially, the human capital is their most important asset. When such households lose a member through boating accident for example, they try to adopt measures that will prevent the loss of another member. Assessing from the responses above, it is possible to state that a reduction in the human capital of a household leads to a reduction in the number of activities that such a household can undertake. For instance as argued by Ellis (2000), a household with many members in the active working group can afford to allow some of its members migrate without perishing. The loss of economically active members in low income households is therefore very detrimental to their future survival. Also, from above, it is obvious that households interviewed that continued with boating would wish to stop but do not have many options available to them. They therefore continue with boating whilst conscious of its destructive effects.

The most important consideration is the extent to which these post-disaster livelihood activities are viable. As mentioned above, the viability of these activities will determine whether the adaptation of households is negative or positive per Ellis' (2000) conception. It is worth mentioning that most of these households undertake negative adaptation because they are engaged in generally far low rewarding activities or conditions (if still into boating) than the pre-disaster period. The only exception of households with perhaps promising continuity of stable activities are those that have been messaging their items through the boat operators. At least if they do not get higher profits, they will be assured of their capital base whether there is a boat accident or not. Faced with limited livelihood options therefore, disaster households are in the dilemma of continuing with their relatively more rewarding but disaster risk activities in boating or move to less rewarding non-boating related activities.

6.4 Support services available to disaster households

In the foregoing discussion, I have shown the vulnerability processes that different households undergo during disasters. I have made it clear that most households have suffered some forms of disasters and that the severity differs among households. I have also shown the post-disaster livelihood strategies that households adopt which gives the impression of a negative adaptation per the conception of Ellis (2000) for most households. This section takes a look at the support services that households receive when disasters strike. If I repeat the

definition of disasters here as the disruption of the livelihoods of households that makes it impossible for them to cope with their own resources without external assistance, then support systems available to such households are very crucial in assessing their future livelihood viability. As implied above, this external assistance can come from any entity outside the household and can therefore include assistance from the community, government and NGOs. The nature of assistance from these sources and problems related to the assistance are discussed below. It is important to note that during times of disasters, these institutions do not operate individually. Most at times households can access assistance from different sources at the same time.

6.4.1 Community support services to disaster households

The community plays a major role at least in ameliorating the effects of disasters on households in the short while. Devereux (2001) refers to such community assistances that are drawn from social networks as “informal safety nets”. He however noted that such assistances do not help much to improve the livelihoods of disaster households since there is now an increasing trend of horizontal transfer (asset transfer within poor groups) in sub-Saharan Africa. However, since not all households in the study communities experience boating accident as may be the case in other hazard events such as earthquakes, it differentiates between affected and unaffected households. Assistance from unaffected households is therefore of importance to disaster households.

As mentioned above, there is a sense of self-help among members of the study communities. The assistance starts from dealing with the boating hazards and it is in the form of kind or cash. When there are deaths in an accident for example, community members help in retrieving the bodies. In all the communities that the study is based, the tradition is that, people that die in the lake are buried at the banks of the lake. It is a taboo to bring the bodies to burry in the communities. In the focus group discussion in Dambai, participants reported that during funerals, community members help the bereaved families in cooking for the funeral guests either by using their own foodstuffs or those provided by the bereaved family. In most cases however, it is the bereaved family that provides the foodstuffs to be cooked. However, when community members use their own foodstuffs to cook for hazard stricken households, it means that they (affected households) can be able to save some of their own food for future use. Other kind contributions which include the provision of food, housing

and clothes by community members help disaster households to cope with their vulnerable conditions. Abdulai (cited above), one of the evictees that got involved in an accident reported that he had to stay in the house of the *Zambarima* chief in Abotoase for about a month before he found a place to rent. He said it was even the chief that helped him with the initial payment of the rent. As described above, Abdulai is a migrant from Burkina Faso and therefore could not do much on his own after losing all his property. Another evictee, a woman, narrated how community members in Abotoase donated clothes to her since she was only left with the clothes she wore after surviving the accident.

Apart from the kind contributions, cash contribution by community members is very important to disaster households. Akua in Dambai described how the money she got from the community members helped her to keep her household from starving in the immediate period after the husband died through a canoe accident. She said she got a total of about GHS 150 (USD 75) from the contributions. According to her, she used the money to buy food since it was the lean (farming) season and there was no food in the house. Another man in Dambai responded that he used the contribution that community members gave to him after the death of the wife to repair his canoe. His canoe was wrecked in the accident. Repairing the canoe enabled him to continue with his farming activities across the lake.

Other community assistances include kind gestures towards the children of disaster households, especially orphaned children. As mentioned above, the future of low income households mostly depends on their human capital and this is why most households interviewed put their hope in the children. However, when households cannot cope with disasters and have to give out their children to other people as illustrated in some of the stories above, it paints a bleak picture for the future welfare of their households. This is why supporting the education of disaster children by some individual members of the community is essential to the livelihoods of disaster households. One such person is the former Assemblywoman of Abotoase. She owns a private school in the community and a home for disaster children. She mostly admits children who are particularly orphaned through hazard events in the home with majority of them from boating hazards. She said her motive is to promote the welfare of the children. According to her she had about eighteen boating disaster children in her home but some of them have completed the Junior High school level. She said because some were doing well in school, their external family members have taken them under their care. She added that there are some of the boating disaster children who are staying with other households in the community but attends her school for free. In her school,

the fees for the Primary School and the Junior High School levels for regular students are GHS 15 and GHS 25 (USD 8 and 13 respectively) respectively. Though these assistances to disaster households are not exclusively for boating households, they help a lot in improving the human capital of the disaster households towards a bright future for their livelihoods.

It is important to point out that community members are the first point of assistance that disaster households are able to access. As indicated above, such assistances make the affected households to cope at least in the short while. Devereux (2001) actually classifies community support systems under the coping strategies of disaster households. In essence, assistances received by disaster households from members of the community prevent them from falling into complete misery and deprivation. However, this assistance from community members cannot help disaster households to return to their normal lives. The development of state welfare system is still in the initial stages in most developing countries. The traditional self-help spirit and sense of oneness in most African societies is also fading away. As in the study areas, there is now a transition period between the good old traditional system and the undeveloped future formal state welfarism. This therefore has consequences for the livelihoods of disaster households in their attempts to gain back their normal lives. This is also attributed to the fact that most people in African rural societies share similar vulnerable livelihood characteristics and therefore cannot give more than they have themselves.

6.4.2 State support services to disaster households

In every disaster that comes, the state is expected to play a major role in improving the livelihoods of the affected households. These roles are embedded in the concept of social protection. I will not discuss the concept of social protection into detail but will only highlight some important concepts with regards to benefits to disaster households. I will limit my discussion to the social assistance part of the concept. Social protection is interventions by public institutions to help households manage risk and provide support for the vulnerable in society (Holzmann and Jørgensen in Devereux 2001). Chambers (1993) has stated that the state must put in place measures to ensure the welfare of poor households, especially, those that are already suffering from disasters to enable them obtain secure livelihoods. Samson (2009) has stated that without effective social protection, disaster stricken poor households normally undertake strategies that prolong their vulnerability. The level of access to social protection by disaster households has been stressed in the Access model by Wisner et al.

(2004) as key to regaining normal lives. It is however important to point out that the Access model put much emphasis on the role of social protection to preventing the occurrence of hazards. Most disasters in developing countries, especially in countries such as Malawi and Ethiopia have seen the provision of social protection by the state in the form of safety nets (Chambers 1993, Devereux 2001, Slater et al. 2009). Social protection is especially important to the livelihoods of households who have limited livelihood options or low asset bases to fall on when disasters strike. Low income households that experience disasters through sudden hazard events such as boating accidents are particularly in need of assistance since they find it difficult to marshal resources on their own at a very short notice.

However, the general impression of the support provided to boating disaster households by the state is that it is meagre and palliative. During boating disasters, the state mainly provides support to affected households through NADMO which coordinates with other local institutions such as the district assemblies. This assistance by NADMO to boating disaster households is mainly in the form of relief items. The NADMO district coordinator responsible for Dambai reported that they mostly give out relief items to boating disaster households in the form of food and clothing. He said since he took over office, they have never given out money to disaster households. These relief items are however delivered on a short-term basis. In both Abotoase and Dambai, NADMO sometimes provides temporary shelters and help in the burial process of the dead especially where there is a large scale loss of lives and property per accident. For instance, the NADMO District Coordinator for Abotoase reported that they erected tents for victims of the Digya evictees who were involved in an accident in 2006. He also said his organisation helped to provide shelter and food for rescuers who were retrieving dead bodies for the 2011 accident at the overbanks as it took them about a week of rescue efforts.

According to the two district coordinators interviewed, it is not every disaster household in their registry that benefits. They reported that most at times, relief does not get to households that are far away at the overbanks. This they blame on the lack of their own means of transport to ply on the lake. However, much of the problem relates to inadequate funds available. The two coordinators lamented that their offices were supposed to be entitled to 5 per cent of the District Assembly Common Fund, but that it is not enforced and their District Chief Executives do not release the said amount. Due to that, they are not able to provide assistance to all the disaster households that they always register in accidents. Moreover, the assistance from NADMO most at times gets to the disaster households very

late. According to the coordinators, they always file a report on the disasters to the regional office which also awaits action from the head office. These bureaucratic practices results in the delay in delivery of relief items to people who may be in dire need of immediate help.

As I mentioned above, several agencies provide assistance especially where there is large scale damage which complements the efforts of the state institutions. This was confirmed by the former Assemblywoman in Abotoase. Several boating accidents happened during her tenure as a local government representative so she has a fair idea of the sources of assistance. According to her:

“During the Digya accident for example, the District Assembly and NADMO provided tents, mosquito nets, blankets and foodstuffs such as cooking oil, rice, and maize. The Inland Canoe Fishermen chairman also came down with his team and they brought along used clothing and foodstuffs. Some people also came from France after hearing about the accident in the news with many relief items. However, because they came late, most people had left the camp to stay with their relatives. They went back with many of the items because they wanted to give it out directly. In all, these assistances comforted the people in the short-term as it lasted for one month.”

In Dambai, the few households that ever received assistance got it from NADMO. However, according to beneficiaries, it was mostly a one-time donation of food items. In the overbank communities, informants responded that much of the assistance (mostly cash) they got was from the Member of Parliament for the area as well as the chief of Bassa. As mentioned above, the land that the three communities occupy belongs to the people of Bassa.

6.4.3 Perception on the sufficiency and fairness of assistance

Since the study areas have limited livelihood options as indicated above, the availability and access to social protection is important to the livelihoods of disaster households. As stated in the Access model, the nature of access to state services varies among households as it is influenced by among other things, structures of domination (Wisner et al. 2004).

To begin with, the process of distributing relief items to disaster households ranges from planned to ad hoc. According to the district NADMO coordinators, the department has its own criteria for distributing relief items to affected households. According to the coordinators, NADMO distributes relief items based on the size of the affected household. A household with larger members is therefore likely to receive more relief items. They however added that a household with more children and women receive more assistance. Since the

analysis above show that the study households undergo vulnerability differently, such criterion for distributing relief items has many implications for poor households. This implies that a low income household with smaller size can receive less assistance while a high income household with larger household size can receive more assistance.

Whilst disaster households perceive community assistance to be mostly guaranteed either directly or indirectly, assistance from the government, especially through NADMO is laden with mixed feelings. In conducting interviews in the study communities, many of the households I visited said they never received any assistance from NADMO or any government institution. According to the NADMO coordinator for Dambai, apart from the fact that the unavailability of resources for NADMO may limit the number of households that receive assistance, most people in the community do not report boating disasters to his office. According to him, the few recorded cases were done by the NADMO Zonal Coordinators. These Zonal Coordinators are people who reside in the various localities. This was confirmed when some informants in the interviews responded they were not aware they could get assistance from NADMO. Others had knowledge about the activities of NADMO but did not apply for help because they think the assistance NADMO gives is not enough. According to a woman interviewed in Dambai, she did not apply for assistance from NADMO because of the experience of her neighbour. According to her:

“My neighbour lost the husband in a canoe accident and she had high hopes in NADMO. She kept going to the office almost every day and what did she get in the end? A bar of ‘key’ soap and a bowl of rice.”

She therefore decided not to apply for any help from NADMO because she will spend so much time making follow-ups only to receive little help. This may be attributed to the funding problems NADMO is experiencing and may also explain why most disaster households do not try to seek any help from the office.

Apart from issues relating to the availability and sufficiency of assistance, informants that received some form of assistance expressed mixed views about the fairness in the distribution of such assistances. These views do not only concern NADMO’s assistance, but assistances that pour in from other government institutions, NGOs and individuals. There were reports of nepotism on the part of the Zonal NADMO Coordinators. Some informants were of the view that during disasters, these coordinators manipulate the system to get more relief items for their relatives and close associates. Furthermore, some informants accuse those in the top hierarchy, especially those leaders who are always in charge of making the

distributions of lacking transparency. According to Ramatu, much of the relief items were hoarded by the local government representative and elders in Abotoase. As mentioned above, she is one of the evictees that got involved in the 2006 accident and they received relief items for about a month. When asked whether she received a fair share of relief items, she replied that:

“To tell you the truth, there were so many things going on. They were distributing the items as they were donated. Any time there was a donation from either an NGO or government body, they would call us and distribute to us. They never disclosed the exact quantity of items they received. And interestingly, all the items were put at the back of a ‘dark’ room where they would fetch and bring it out for us. It even came out that the elders and local representative shared some bags of rice and maize amongst themselves. If all that was given to us, it would have helped us a lot.”

The same story was also told regarding the assistance that was given to the victims of the September 2011 boating accident at the overbanks. According to one victim of the accident, so many bags of rice and maize were donated to be given to them but they did not receive any of it. According to him, the foodstuffs were kept in the house of one elder whilst they (community leaders) were determining the best way to distribute it. They however got a report that everything got rotten and was not worth consumption. He was of the view that they might have sold it or shared it amongst themselves as he said he did not see any proof of rotten food items.

Moreover, in the overbank communities, some informants were of the view that monetary assistance given out by the Member of Parliament, the District Chief Executive, and the Chief of Bassa was political and discriminatory. Yaw (cited above) was very bitter about the amount he got from these sources. According to him:

“They were not fair to me at all. There was one woman who lost her trading capital in the September 2011 accident and she got GHS 300 (USD 150). As for me, I lost my wife, two children and my household’s trading money, but I got only GHS 90 (USD 45). I did not really know the criteria they were using to distribute the money.”

Disaster households are therefore not faced with only problems of availability and sufficiency of assistance (especially from the state), but also problems with the manner in which such assistances are given out. Assessing from the above, I can state that the nature of distribution of assistance is not fair to households that are in the lower scale of vulnerability. It is therefore important to state that assistance given to households in post-disaster times follows

the social and power dimensions discussed above. The overall impression is that, assistance from the community though inadequate, benefits many vulnerable groups as households are able to access it. The assistance from the state as shown mostly follows the patron-client relationship that is described in the Access model in which the structures of domination do not favour the most vulnerable (Wisner et al. 2004).

6.5 Summary

In this chapter, I have discussed both the short-term and long-term strategies that households undertake after experiencing boating disasters. I have stated that the short-term activities are best described as survival strategies as they are ad hoc in nature and are as a result of sudden and desperate decisions households have to make. I have also made it clear that in the long run, households adapt with boating hazards in mind and have identified three forms of adaptive strategies. These are the avoidance adaptive strategies, the partial avoidance adaptive strategies, and the coping adaptive strategies. I further intimated that apart from those households that adopt the partial avoidance adaptive strategies who may have better future livelihood prospects, the other households can best be said to have adopted negative adaptation strategies. Moreover, the fact that the study households have limited livelihood prospects means that support systems from the community and the state are essential for their livelihoods activities. It came to light that community support systems are the first source of help available to disaster households and the most widely accessed. The state support system on the other hand does not make much impact on the livelihoods of disaster households as it is laden with problems of availability, sufficiency and fairness.

7 Conclusions

7.1 Introduction

This last chapter briefly touches on the major issues discovered from the field with regards to boating accidents and household disasters. The usefulness of the models/approaches applied is further related to the findings of the study. I then make some suggestions on how the impacts of boating hazards can be minimised and how disaster households can be empowered to move towards their normal or better livelihoods. As stated in the introductory part of the thesis, the main objective was to find out the livelihood viability of households who suffer from boating disasters, especially for households using boating as a major economic activity. I repeat here that the households interviewed were mainly farming and trading households that lost member(s) or property through boating accidents.

7.2 Summary of findings and usefulness relationship of models

There is no doubt that boating is an important source of livelihood for some households in the study areas as it enables such households to go about their daily livelihood activities. It is particularly important to farmers who use it to their farms and traders who use it to sell their wares in major market centres. The unfortunate thing however is that boating on the Volta Lake pose as hazards that mostly halts or reverses the economic wheels of the households that utilise it. As I mentioned above, most of the people in the study communities are living with their own vulnerabilities and their livelihood situation gets exacerbated once they lose a member or significant amount of property in an accident.

Based on the PAR model, I was able to point out some of the distant factors that made the study households to be engaged in hazardous livelihood activities or to be living in areas plagued with disadvantages. I stated that the major reason that explains why some households have to rely solely on *hazardous* boating stems from the creation of the Volta Lake which necessitated the resettlement of people and the subsequent loss of livelihood and resource entitlements. This as I found out from the field, led to among other things the segmentation of communities into native, settler, and migrant ethnic groups with different implications for land (a major livelihood resource) ownership and access. However, responses from the study shows that operating on the general assumption that all households in a particular marginal

area live with the same unsafe conditions is flawed as the livelihood characteristics of households differ. In the overbank communities (Kpedzi, Tsevi and Agyatakope) where basic amenities such as schools and health centres are lacking, the study identified some households who were able to send their children to schools in towns where there are better educational facilities. For such households, the absence of basic amenities does not affect the development of their human capital. Employing the PAR model to the study however provided the basis for the vulnerability situation of boating disaster households to be investigated.

One major finding of the study is that there is a difference in vulnerability between households with the same income levels and between households with different income levels, after they experience boating accidents. The livelihood approach and the Access model were of immense importance in providing the guide for the assessment of vulnerability change among households. The idea of *normal* life in the Access model acted as a bedrock for comparing the livelihood conditions of boating disaster households to the period before they experienced the accident. In order to analyse the disasters that households suffer, I maintained that people suffer from disasters when their livelihoods are disrupted in ways that make it difficult for them to cope without assistance from either internal or external agencies or individuals. In this regard, I used Davies' (1996) distinction of vulnerability into structural and proximate sense to analyse the differential vulnerability of households that suffer from boating accidents. In general, many of the households interviewed were found to have experienced some disasters after losing a member or property through boating accidents. Accordingly and as widely documented in the livelihood literature, the study found that high income households are more resilient to disasters as it mostly takes them relatively longer time before they experience disasters. Low income households on the other hand mostly experience immediate disasters after experiencing shocks through boating accidents. However, the study found differently that in marginal areas where such disasters are caused by sudden hazards, such distinction may not be clear-cut. As I illustrated above, some high income households immediately found it difficult to cope with the disasters they faced, just like some low income households. The role of assets in assessing the livelihoods of people stressed by both the livelihood approach and the Access model enabled the difference in vulnerability change to be explained. High income households have large physical and economic assets that they fall on during disasters while low income households barely have any economic asset at all and always fall on the social capital, mostly on external family

members who are also in the structurally vulnerable group. The findings on the differences in vulnerability are therefore in consonance with the general documentation in the livelihood literature that usually makes reference to the asset base of households and other traits of households that involve migration status, type of household head (male or female), and ethnicity (minority or native). The households with negative characteristics were also found to be disadvantaged in accessing livelihood resources during disasters. Households with positive characteristics were therefore more resistant to disasters. However, the study found that much of the vulnerability literature focuses on household characteristics in explaining the differential vulnerability households experience and ignores the role of social forces in depleting assets. The study identified social forces such as customary rites, conflict of livelihood interests, and theft that occur in the post-disaster period to partly account for the differential vulnerability households undergo after experiencing hazard events.

Furthermore, I identified the short-term and long-term livelihood activities that households undertook after experiencing a boating accident based on ideas from the livelihood approach and the Access model. It came to light that there are limited livelihood opportunities among the study households and that for most households, the boating related activities that they are engaged in are their only source of livelihood. I made an argument that because the impacts from boating hazards are sudden, the short-term strategies undertaken by households are best described as survival strategies. The study therefore principally found that, boating disaster households undertook long-term livelihood activities based on whether to continue with boating or not and this was mainly due to the limited livelihood options available to many of the study households. I identified three groups of long-term strategies undertaken by affected farming and trading households which include those that stop boating completely, those that continue with boating, and those that continue partially (especially traders at the overbanks) with boating activities. As to whether these adaptive strategies are positive or negative according to Ellis' (2000) conception, I came to the conclusion that most of the adaptive strategies are not viable. The study therefore added to the livelihood literature that in communities where there are limited livelihood options, many disaster households undertake adaptive strategies in relation to the hazard event that caused the disaster.

The last major finding of the study was that, support services from the community was the most widely accessed source of assistance by boating disaster households. Due to the limited livelihood opportunities for disaster households, I intimated that without external assistance, there was no way disaster households could inch towards their normal lives. I

stated that this assistance could come from outside the household and could be from the other members of the community, state or non-governmental organisations. The concept of social capital in the livelihood approach was used to assess assistances that boating disaster households obtain, especially from other community members. The state which is supposed to ensure the welfare of vulnerable groups through social protection only provides a one-time palliative assistance to few households. Assistance from the state has therefore been perceived by informants to be insufficient and not fairly distributed among disaster households as it does not take into consideration the differential wealth categories of households. As I stated above, this state of affairs has negative implications for disaster households to return to their normal livelihoods as the community members also have their own vulnerabilities and their assistance does not make much positive impact in the long run. Though the livelihood approach assesses the effects of state institutions and policies on livelihoods, the approach is not explicit on the role of social protection provided by the state in securing livelihoods. The Access model on the other hand acknowledges the role of social protection but places much emphasis on the prevention of hazards. Responses obtained by the study however points to the fact that social protection should be accorded much importance in the livelihood study of disasters caused by sudden hazard events.

The findings of the study have relevance for boating dependent households in the other communities that lie along the lake. Most of these communities share similar livelihood and boating characteristics. There is however the need to be conscious of the relative availability of livelihood options in the various communities. It is important to state that, even among the communities studied, the livelihood opportunities that households can explore vary. As compared to the overbank communities, Abotoase and Dambai are small towns and therefore have more livelihood opportunities that households can venture into after suffering from a boating hazard event. For example, it is probably that in other communities along the lake, households may not solely depend on boating to obtain their livelihoods and may therefore not experience many disasters after suffering from a boating accident. Making generalisations of the findings to other communities along the lake must therefore take into consideration the boating and livelihood characteristics as well as the livelihood opportunities available to households.

7.3 Recommendations

With people obtaining their livelihoods in marginal and hazardous areas, much needs to be done to improve their living conditions. Basing on the fact that the study households live with many disadvantages in communities where a majority of the people are structurally vulnerable, I argue that the role of the state in providing social protection is paramount. To ensure a certain level of decency on the livelihoods of disaster households and to prevent more households from experiencing disasters, the social protection provided by the state should be a two-pronged approach. It is important to state that, in both approaches, a tripartite coordination is needed involving the state, community and household.

In the first approach, as preventing the complete occurrence of boating accidents will be mostly impossible, social protective measures should be aimed at either minimising the occurrence or reducing the impacts of such accidents especially in the number of deaths. As it can be recalled, the definition of social protection I cited above includes some element of risk management. Boating accidents pose a livelihood risk to boating dependant households. I also stated above that some households abandoned their only livelihood activity that requires some form of boating just because of the fear of getting involved in another accident. Efforts in minimising the rate at which accidents occur and in mitigating the impacts of such accidents are therefore crucial to the livelihoods of boating households. Informants themselves had some ideas of what the government can do to minimise boating accidents and many of them suggested that the government provide them with fibre boats, uproot all tree stumps and chart the lake. However, there is no need to mention that these are costly activities to undertake by a developing country like Ghana. In an interview with the director of inland waters at GMA, he acknowledged that the government had initiated the uprooting of tree stumps and that plans were under way to chart the lake and provide fibre boats. However, these activities will take a long time to materialise. Whilst these activities are ongoing, I suggest the government should concentrate more on minimising the number of deaths in event of any boating accident. The government must therefore step up its efforts in hazard awareness and skill training, and provide more hazard safety equipments such as personal floating devices. It was a worrying discovery I had from the field that training and other safety assistances from the government are always channelled through the respective boat owners associations in the various landing sites. However, as I also mentioned above, it is not every boat owner that is part of the associations with the main reason being the inability to pay membership fees. These non-members therefore do not benefit much from

such assistances and have to rely more on their own resources and experience. Furthermore, almost all the households interviewed that suffered from canoe accidents reported they never had support (in terms of life jackets) or safety advices from government agencies. Most of them claimed the interest of the government is on the boats. The approach to safety should therefore be a holistic one. It should be one that targets and benefits both union and non-union boat owners as well as canoe owners. One major activity that also needs to be examined by the state is the monitoring of adherence to hazard safety measures. As Paton and Johnson (2001) put it, providing information about hazards or risk events does not mean people will adopt safety measures. In this regard, the government could in the mean time provide boats that the navy can use to patrol the lake on regular basis. As I have mentioned earlier, most of the community members have not cultivated the habit of wearing life jackets (even if available) and violate much of the safety rules once they are on the lake away from the Ghana Navy. Regular patrols by security agencies will therefore act as a deterrent to such attitudes. The community and households also need to participate in minimising the impacts of boating hazard events by adhering to safety precautions, participating in hazard training and education, and helping to monitor and report unsafe hazard practices to law enforcement agencies.

In the second social protection approach, measures need to be aimed at empowering the livelihoods of both the community members and disaster households. Livelihood empowerment by the state can therefore have both an indirect and a direct effect on disaster households, towards helping them gain back their normal lives. Since I mentioned earlier that some of the communities lack essential basic amenities, the state must provide basic health care and educational facilities that will help improve the human capital base of the communities. Also, since it was evident from the field that there are limited livelihood options, the state needs to make room for the creation of alternative income earning opportunities. Furthermore, basing on the fact that some particular groups of people slumped into a state of helplessness because of the loss of their access rights to important resources, the state should act to empower these groups. Based on Chambers (1993) recommendation, the state must regulate and formalise laws governing resource access and ownership. This involves checking and formalising local laws such as those governing inheritance in order to ensure equity and fairness. This will ensure that marginalised groups such as migrants, female-headed households, and ethnic minorities are assured of continued access to important livelihood resources during disaster times. Above all, social protection can undertake direct

activities to target disaster households such as providing safety nets in the form of food to smooth consumption, and regular cash transfers to disaster households. In providing this direct assistance, a merit-based approach must be adopted in which the more vulnerable households benefit more.

Two outcomes of the above social protection approaches will emerge. In the first outcome, there will be less possibility of hazard impacts, that is, a reduction in the number of deaths per accident. In the second outcome, disaster households will have better prospects of regaining their normal and better livelihoods. This may happen in two ways. The first is that the direct policies on disaster households to smooth their consumption and provide them with regular cash transfers will eliminate their misery. Also, by empowering community members to have alternative income earning activities, they will always be able to contribute meaningfully and substantially towards ameliorating disasters that hazard stricken households face, since there is a sense of self-help among members of the communities. This contrasts with the meagre contributions community members can make when they also have their own vulnerabilities. The total effect will therefore be that, disaster households will have improved access to resources, increased resilience, and be in a position to undertake positive adaptation strategies.

7.4 Further research

Though many studies have been done on vulnerabilities and disasters, there are still areas that need further research especially where such disasters are caused by sudden hazards. One area of concern with regards to sub-Saharan Africa is the frequent conflict between livestock keepers and food crop cultivators. This is not only evident in the study area but in other parts of Ghana. Where this happens in areas where there are frequent hazards such as accidents, flooding, or seasonal hunger, there is the need for a vulnerability study of such areas. Moreover, the role of social protection has to be assessed with regards to disasters that are caused by sudden hazards since most developing countries are torn between inadequate social support system and undeveloped state welfare system.

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Appendices

Appendix 1: Commercial boat transport accidents on the Volta Lake and death tolls (1990 to 2012).

Dates of accidents	Types of boats	Market centres	Death toll
April 1990	Wooden (Open)	Yeji	46
April 1995	Wooden (Open)	Kpando Torkor	100
March 1997	Wooden (Open)	Kpando Torkor	6
June 1999	Wooden (Open)	Abotoase	70
September 1999	Wooden (Open)	Dzemeni	5
January 2001	Wooden (Open)	Yeji	7
April 2001	Wooden (Open)	Yeji	6
April 2002	Wooden (Open)	Abotoase	50
April 2006	Wooden (Open)	Abotoase	10
August 2006	Wooden (Open)	Yeji	27
August 2009	Wooden (Open)	Ket Krachi	6
October 2009	Wooden (Open)	North Dayi	18
September 2011	Wooden (Open)	Abotoase	21
December 2011	Wooden (Open)	Abotoase	4
February 2012	Wooden (Open)	Kete-Krachi	10

Source: Ghana Maritime Authority (2012)

Appendix 2: Some safety activities on the Volta Lake by the Government of Ghana.

Boat station	No. of boats surveyed	No. of personnel trained	Presence of Naval Task Force?
Kpando-Torkor	10	86	Yes

Dzemeni	10	166	Yes
Dambai	6	45	Yes
Ketekrachi	6	80	Yes
Yeji	52	151	Yes
Tapa Abotoasi	23	164	Yes
Total	107	692	

Source: Compiled from GMA (2011)

Appendix 3: List and description household informants mainly used in the study.

No.	Informant	Location of household	Characteristic
1.	Akua	Dambai	Female, 33, head of household <i>Banka</i> (settler),
2.	Abena	Dambai	Female, 42, Remarried, <i>Nchumuru</i> (native)
3.	Tekuni	Dambai	Male, 35, head of household, <i>Komkomba</i> (internal migrant)
4.	Yaw	Tsevi	Male, 33, head of household, <i>Ewe</i> (internal migrant)
5.	Abdulai	Abotoase	Male, 75, head of household, <i>Zambarima</i> (external migrant)
6.	Koffi	Kpedzi	Male, 78, head of household, <i>Ewe</i> (internal migrant)
7.	Nakuja	Dambai	Male, 29, Grown up child and head of household, <i>Konkomba</i> (internal migrant)
8.	Selasie	Agyatakope	Female, 40, head of household, <i>Ewe</i> (Internal migrant)
9.	Kwabena	Dambai	Male, 35, head of household, <i>Banka</i> (settler)
10.	Ramatu	Abotoase	Female, 45, breadwinner of household (but not head), <i>Zambarima</i> (external migrant)
11.	Obuor	Dambai	Male, 50, head of household, <i>Nchumuru</i> (Native)
12.	Adjoa	Tsevi	Female, 45, head of household, Akan (internal migrant)

Appendix 4: List of key informants used in the study.

Key Informant	Location	Description
Former Assembly woman	Abotoase	Most major boating accidents happened during her tenure Owns a Home for disaster children
NADMO District Cordinator	Dambai	His office attends to all boating accidents in Dambai area
NADMO District Cordinator	Abotoase	His office attends to all boating accidents in Abotoase and the overbank communities
Queen Mother	Agyatakope	Traditional head of Agyatakope area She is also a trader who uses boating
Headman	Kpedzi	Traditional leader of Kpedzi community
Headman	Tsevi	Traditional head of Tsevi traditional area
Former fisheries worker	Abotoase	Elderly man. Has worked at the lakeshores in Abotoase for a long time.
Chairman of ABOA	Abotoase	Head of boat owners in Abotoase
Chairman of DBOA	Dambai	Head of boat owners in Dambai

Appendix 5: Household in-depth interview guide

1. Background data
 - a. *Status in the household now and at the time of the accident...../.....*
 - b. *Age now and at the time of the accident...../.....*
 - c. *Occupation (s) now and at the time of the accident...../.....*
 - d. *Education now and at the time of the accident...../.....*
 - e. *Length of marriage with spouse (that passed away).....*
 - f. *Number of children in household.....*
 - g. Children in the household in school? A) None B) Some C) All
 - h. Levels of education of children in household A) primary school level... B) JHS.....C) SHS..... D) Tertiary..... E) None....

- i. Number of older children in the household able to work and not in school.....
2. Can you please tell me about the year your spouse (family member) died and what the cause of the accident was?
3. What was his or her main occupation and why did he/she choose to engage in this occupation?
4. Can you please tell me about the consequences his/her death has on your household livelihood?
5. How important was boating important to your household livelihood before and after the death of your spouse? (Or, what are the changes in household livelihood strategies since your spouse passed away?)
6. Can you please tell me how viable these new strategies (if any) are in helping your household gain a living?
7. What are the sources of 'in kind' income in your household?
8. Do you get remittances: A) regularly B) sometimes C) when ill D) never
9. How many of the following assets do you have in your household: A) Lorry.....b) boat....C) livestock.....D) poultry.....E) television....F) radio....G) bicycle..H) Motorcycle I) Other...
10. How would you describe your household living conditions now as compared to the time your spouse was alive, in terms of:
 - *Your ability to feed your household, that is, to have adequate food all year round?*
 - *Your ability to pay your children's school fees?*
 - Your ability to access health facilities and to pay medical bills when members of your household fall sick.*
 - *Your relationships with your neighbours and members of the community?*
 - your ability to wear appropriate clothing and to attend social gatherings such as funerals, weddings or naming ceremonies?*
11. Have you: A) Ever B) Never C) Sometimes or D) Regularly receive support from any department or organisation since your spouse passed away?

12. If, yes in what form is/was the support? How significant is/was the support and what is your view in the manner it was/is distributed?
13. What assistance did you get from neighbours and community at the time of the accident both in the short-term and long-term?

(NB: questions 14 to 17 only for households with boats)

14. What kind of boat did your household have?
15. How did your household obtain the boat that got involved in the accident?
16. If the boat was wrecked, how would you describe your livelihood without a boat?
17. If boat is in good condition, who has taken ownership of the boat and why?
18. What kind of assistance (and from which institutions or bodies) do you get on safe navigation on the Volta Lake?
19. In your view, in what practical ways can accidents on the Volta Lake be minimised?
20. How would you forecast your livelihood condition in the next ten years? Explain
21. What are the main livelihood problems you face and how do you think these problems can effectively be addressed?
22. Please is there anything that I have not asked that you think you can talk about?

Appendix 6: Interview guide for district NADMO coordinators

1. What specific roles does your organisation play in boating accident prevention on the Volta Lake?
2. What kind of support does your organisation provide to boating disaster households?
3. With regards to past boating disasters, what specific support has your organisation provided for households?
4. What are the major criteria you use in distributing relief items or providing support for boating disaster households?
5. What are the major problems associated with support from your organisation to boating disaster households?

Appendix 7: Focus group interview guide for Dambai

1. Can you please tell me about the different ethnic groups and how they came to settle here?
2. What are the economic activities in this community?
3. What determines access to farmlands in this town?
4. How important is boating to members of this community?
5. What is the cost of obtaining a boat/canoe and how do most boat owners obtain their boats?
6. What reasons explain why people from Dambai here farm across the lake?
7. What assistances do people in this community receive when members of their households die through accidents: both from the community itself and public and private institutions?
8. Do people migrate when disaster happens? Why?
9. When a family head dies, what is the nature of inheritance in this community?
10. If there is dispute over inheritance between the wife and deceased husband's relatives, how is it resolved in most cases?
11. Reviewing the past accidents so far, what do you think are practical ways of reducing boat/canoe transport accidents?

Appendix 8: Key informant interview guide

1. Can you please give please give me a brief history of this community and the ethnic composition?
2. How is access to livelihood resources negotiated in this community?
3. What are the major economic activities in this community?
4. How important is boating to members of this community?
5. What are the major boating related activities in this community?
6. What are some of the causes of boating accidents in this community?
7. What are the effects of boating accidents on the households?

8. What kinds of assistance do boating disaster households receive?
9. What are some of the livelihood activities that households undertake when they suffer from boating accidents?

Appendix 9: Interview guide for Chairmen of the boat owners associations

1. How does a boat owner become a member of your union and what are some of the benefits?
2. Where are some of the major destinations of boats in your locality?
3. Do you get safety training and advices from responsible institutions?
4. What are some of the causes of boating accidents?
5. What efforts do members of your association put in place to ensure safe navigation on the lake?
6. What assistance do boat owners give to households that lose property or members in boating accidents?