

Harrison K. Golo

Department of Social Studies Education, University of Education, Winneba, Ghana. Email: harrigol@yahoo.com

Lawrence Odumah

Department of Social Studies Education, University of Education, Winneba, Ghana. Email: lodumah@uew.edu.gh

Vincent Adzalie-Mensah

Department of Social Studies, University of Education, Winneba, Ghana. Email: vazahliemensah@gmail.com

&

Samuel M. Agblorti

Department of Population and Health, University of Cape Coast, Cape-Coast, Ghana. Email: sagblorti@ucc.edu.gh

Influence of vulnerability context on access to assets in two fishing communities in the Ketu South District, Ghana

Abstract

Access to a range of key assets by poor rural households has often been associated with their welfare. Due to prevailing socio-economic situation within Ghana's rural fishing communities in the past decade, this paper sets out to identify the extent to which vulnerability context influence access to key assets in two of such communities, namely Amutinu and Tetekorfe in the Ketu South District. Fifty household heads were captured for the study, using interview and focus group discussion. The results indicate loss of property through flood, serious illness or death of household members and high prices as key factors, which constrain access to key assets. The vulnerable context of the two communities has created a vicious cycle in the sense that those households which were unable to deal with existing vulnerability barely access key assets to enhance their resilience. The findings have implication for coastal rural community development. A holistic resilience-building policy towards the rural coastal artisanal fisheries sector development to enable its dependants to cope with vulnerability is required, and measures to enhance access to assets must be given careful consideration.

Introduction

The fisheries sector provides subsistence livelihood for many people worldwide when and where there are few alternatives (Allison and Ellis, 2001). This is premised on the fact that it is an open access resource, and becomes a fallback option especially for the rural poor when they lose their land or fail to access other activities for their livelihood (Townsley, 1998). The fisheries sector contribute significantly to livelihoods around the world by providing food security, income and employment through various activities in its three sub-sectors: harvesting, processing and marketing (Koranteng, 2010; FAO/IFAD/WB, 2009; Béné, 2004).

Until recently, Ghana was considered as a viable fishing nation in West Africa, especially in the early 20th century, when Ghanaian fishing companies were fully established between countries, such as

Senegal and Nigeria (Agbodeka, 1992). Before then, Ghana's commercial fishing sector had already emerged with modified river boats to handle the surf and rough seas along the West African coasts (Atta-Mills, Alder & Sumaila, 2004).

In Ghana, the sector is largely artisanal in character, and covers marine and inland activities. Inland fishing is mainly carried out on the Volta Lake. The marine fisheries sector is made up of artisanal, inshore, industrial and tuna fleets (Akpalu, 2002; Odotei, 1995), and largely dominated by artisanal fishers (Mensah, Koranteng, Bortey and Yeboa, 2006). The marine landings are within the coastal regions of Western, Central, Greater Accra and Volta Region (Directorate of Fisheries, 2003: 32). The sector's contribution to economic development of rural coastal communities over the last two decades has been largely documented (Koranteng 2010; FAO/IFAD/WB, 2009; Béné & Heck 2005; Mensah *et al.* 2006; Directorate of Fisheries, 2003; Townsley, 1998). Mensah and his colleagues, for instance, assert that the economy of the rural coastal areas is heavily dependent on fishing because artisanal fish processing and trading are largely carried out by people belonging to fishing communities (Mensah *et al.* 2006). The sector thus generates both direct and indirect employment for a large number of rural people who work as crew members, fish processors, traders, fish distributors and porters along the entire coastal zone of about 550 kilometres, stretching from Aflao in the East to Half Assini in the Western part of Ghana (Bank of Ghana, 2008). A number of researches, however, confirm that small-scale fishing communities are considered, especially vulnerable to the negative impacts of vulnerability contexts, endogenous policies, institutions and processes, which mediate access to assets (Adato & Meinzen-Dick, 2002); Elasha, Elhassan, Ahmed & Zakieldin, 2005; Badjeck, Allison, Halls & Dulvy, 2010).

Despite the current socio-economic situation prevailing in most rural coastal fishing communities in Ghana, only limited research exists on how vulnerability context influence access to assets in the Ketu South District of the Volta Region, which largely depends on the fisheries for livelihood. It is assumed in this study that stakeholders' understanding of the factors hampering access to assets in, especially rural coastal fishing communities is essential to grasp the socio-economic dynamics for livelihood decisions and attitudes within these communities for an effective development intervention. This study, therefore, sought to contribute to literature by exploring the above issues in the district's fishing communities.

Review of Related Literature

Vulnerability means defenselessness, insecurity, and exposure to risk, shocks and stress, and thus linked with net assets (Chambers, 1995). Krantz (2001) argues that poverty is not necessarily the question of low income, but includes the state of vulnerability and the general feeling of powerlessness. It should, however, be noted that, although the concept of vulnerability is most often used synonymously with poverty, the two are not the same. Vulnerability according to Moser (1996; 1998) refers to insecurity of individuals, households or communities in the face of a changing environment with its concomitant increasing risk, uncertainty and declining self-respect (see also Rakodi, 2002). Vulnerability, therefore, does not imply lack of want but powerlessness against and exposure (Chambers, 1995) to factors such as:

1. trends of globalization, population pressure (eg. large family), resources, and economic indicators, such as prices, governance, or technology;
2. shocks, such as social pressures, changes in human health, natural disasters, sudden economic changes, or conflicts and;
3. seasonality in prices, employment opportunities, availability of resources, change in weather; and government policies over which people have little or no control (Adato & Meinzen-Dick, 2002).

Within fishing communities, vulnerability could be linked to ill-health and malnutrition; fluctuations in prices and natural resources; theft or loss of fishing gear and access to, and control over, assets.

Although vulnerability normally refers to threats that are outside people's control, Moser (1998) contends that it involves the identification of the threat as well as the responsiveness, by exploiting all the opportunities that help to recover from or to resist the effect of the changing environment as a result. This resistance, however, can depend on the assets and the entitlement of individuals, households or communities, and the extent to which these assets and entitlements can be mobilized and managed in the face of hardships.

Vulnerability in this case, can also be linked to ownership of assets because ownership of assets determines people's vulnerability. Put differently, assets mediate the impact of the vulnerability context upon people in the sense that stocks of capital (assets) are likely to buffer household's vulnerability to shocks (Harpham and Grant, 2001). That is, those with fewer assets are likely to be prone to vulnerability or insecurity, whereas those with more assets are bound to be less vulnerable.

The preceding literature review bear direct relevance to understanding the life situation of fishing communities in the Ketu South District in terms of vulnerability contexts and access to assets. Consequently, the following question emerged and used to guide the study: in what ways do shocks, seasonality and trends (that is vulnerability) influence access to key assets in coastal fishing communities of Amutinu and Tetekorfe in the Ketu South District?

Method

The Study Area

As indicated earlier, this adopted a case study design by targeting two rural coastal fishing communities namely, Amutinu and Tetekorfe in the Ketu South District of the Volta Region of Ghana. These two communities were chosen purposively for two reasons: firstly, they represent typical communities in the district with majority of the inhabitants depending on fishing as a key livelihood activity; secondly, the communities are among the poorest in the district (Ketu South District, 2010). Sea fishing in which the two communities engage, is strictly traditional and done on both individual and company basis (Ahiawodzi, 1997).

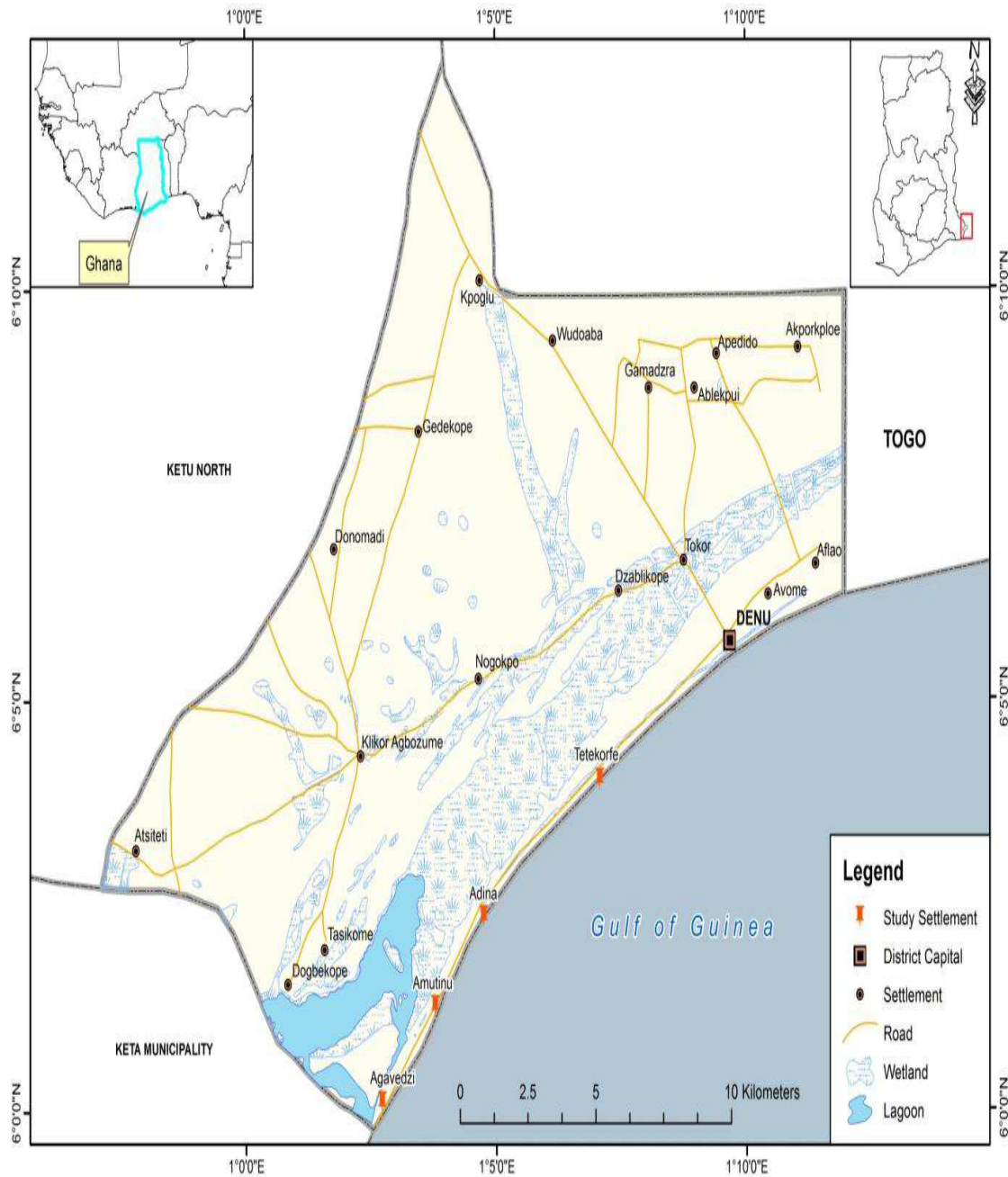


Figure 1. Map of Ketu South District showing the study settlements
 Source: Author, Digitalized at GIS Laboratory, University of Cape Coast (2013)

The Ketu District covers a total land size of about 400 sq. km. with an altitude of less than 15 metres at the coast and 66 metres inland. The district, which is sandwiched between the sea and the Keta lagoon, has a 30 kilometre stretch of lagoon interconnected by streams and small rivers, which subsequently linked with the Volta River. The daily activities of littoral dwellers go on between the lagoons and the sea but the lagoon often gets flooded, especially during the rainy season, destroying

properties of these dwellers, and rendering most of them homeless (Ketu South District, 2010). The limited vegetative cover makes farming less lucrative thereby making fishing a dominant activity (Nukunya, 1997) for a total district population of 160,756 with a rural component of 85,922 (Ketu South District, 2010)

Data collection and instruments

Two instruments were used in the study, namely interview and focus group discussion. Data for the study were collected between February and August 2012 from households within the two purposively selected communities – Amutinu and Tetekorfe¹ in the Ketu South District. Household has been one of the most-used concepts in the study of social organisation at the micro level and thus became a basic unit of social analysis. Scholars usually consider it as a complex concept, since it is not a stable entity but varies in space and time (Beall, Kanji & Tacoli, 1999; Cobertt, 1988; Guyer, 1995). From the perspective of the livelihood framework, for example, the typical unit is the extended household, which includes also members who are away from home but send remittances back to their home stead (Allison & Ellis, 2001). The Ghana Statistical Service considers a household to consist usually of a person or group of persons who live together in the same house or compound, share the same house-keeping arrangements and are catered for as one unit (Ghana Statistical Service, 2002). For the purpose of this study, a household consists of all individuals, who at the time of the interview were living in the same house or compound as the household head and the family members who were staying somewhere else but had an impact on the household activities. Twenty-five (25) houses were selected randomly from each of the two communities; using an enumeration list provided by the Ghana Statistical Service, and one household head was selected from each of these houses for the interview. Specifically, household heads or their spouses were the respondents to the questions.

Data collection was done mainly through focus group discussions (FGD) and interviews. The interview guide was made up of forty closed and open-ended questions. Although we had specific objectives and interview guides, we still wanted to leave room for further exploration during the interview. This enabled us to gain new and previously unexpected information from the respondents, thereby improving the quality of data collected. To attain a convincing result, we framed the interview questions from general to specific knowledge and issues. The interview guide was structured into two parts. The first part solicited information on the socio-demographic and socio-economic characteristics, including age, sex of household head size and composition as well as education. The second part sought information on vulnerability context of households and its influence on access to various assets for livelihood. Two focus group discussions, comprising 8 people in each group, were organised to elicit different views, perceptions, opinions and experiences from cross sections of community members with different backgrounds in terms of sex, occupation and position.

Data collected through the use of the two instruments above were analysed by: 1.) identifying the relevant issues in relation to the themes of the research; 2.) employing descriptive statistics to enable the use of percentages and frequency tables to describe data. The study findings were compared to relevant literature corroborating, conflicting and/or offering new insights.

Results

Background characteristics of respondents

Selected background characteristics of the sampled household heads, some of which do not need further explanation (Owuor, 2005) are presented in Table 1. The more relevant ones which could throw light on assets of respondents will be presented and discussed under various sub-titles in the next subsequent sections.

¹ It should be noted that the choice of the two selected communities was not for the purpose of comparison. Rather, its main aim was to broaden the scope of the study locations.

Table 1: Percentage distribution of selected background characteristics of Household heads

Background	Operational definitions*	Per cent
Ages of household heads		
Less than 25 yrs.	Young	30
25 – 50 yrs.	Middle age	60
Above 50 yrs.	Old	10
<i>Total 100.0</i>		
Ages of household members		
Less than 18 yrs.	Very young	40
18 – 30 yrs.	Young	30
30 – 49 yrs	Middle	20
50 yrs. and above	Old	10
<i>Total 100.0</i>		
Sex of household head		
Male	Male-headed household	85
Female	Female-headed household	15
<i>Total 100.0</i>		
Marital status of household head		
Married	Household with 'married' couple	90
Single	Single man or woman family head	10
<i>Total 100.0</i>		
Household size		
4 – 8 members	Small	2
8 – 10 members	Medium	27
10 –14 members	Large	30
16+ members	Very large	41
<i>Total 100.0</i>		
Number of children per household		
2 – 4 children	Small	12
6 – 8 children	Medium	40
10+ children	Large	48
<i>Total 100.0</i>		

*These are the authors' own operational definitions.
Source: Fieldwork (2012).

In all, most of the household heads (90 percent) were married² and were within the active age group of 25-50 years. Some of the household heads were, however, either widowed or divorced. It is worth noting that all the respondents who reported being widowed (2 percent female and 3 per cent male - fall within the single family head), especially women with many children are more likely to be vulnerable to the current shocks and trends within the fisheries.

In line with the trend nationwide, most of the households in the study area fall within two age groups, less than 18 and 18 to 30 years. The proportion of the second group was 30 per cent. As typical of fishing communities, 48 percent of household heads had more than 10 children and 41 percent had a very large household size of more than 16 members. It is important to point out that although this situation could increase the household heads' dependency rate, with “many mouth to feed”, the

² Further probe into marital issues indicate that most of the respondents, in the true sense of the word, did not marry through the prescribed legal or traditional means but were rather co-habiting - in a marital union.

opposite could also be the case, since fishing activities demand more productive hands for better income.

Table 2: Distribution of household heads by occupation and sex

Occupation	Male	Female	Total
Fishing	32	0	32
Processor/Trader	0	7	7
Dress-making	1	2	3
Driver	1	0	1
Teacher	1	0	1
Carpentry/Boat builder	1	0	1
Hairdresser	0	1	1
Mason	1	0	1
Petty Trader	1	2	3
Others	0	0	0

Source: Fieldwork (2012)

As expected, almost all the household heads were engaged in fishing and fishing related activities as a means of generating income. Of the 38 male household heads, 84.2 per cent were fishermen³ while their female counterparts (N=13), 41.7 percent of them engaged in livelihood activities that were not related to fisheries. In total, only 20 percent of the respondents (N=50) involved in non-fishing related livelihood activities. These activities were hairdressing, petty trading, masonry, driving and teaching (see Table 2).

Vulnerability contexts and access to assets

Respondents indicated that access to assets and their usage are determined, to a large extent, by the external environment in which they operate or live. Three major types of external factors that frame people's vulnerability context from the perspective of Sustainable Livelihood Framework are shocks, seasonality and trends. Virtually all the three external factors have been experienced by all the respondents in the study communities, and resulted in the loss of their income and assets and a reduction in consumption.

Shocks: Shocks can take a variety of forms, and the two types of shocks identified within the two selected communities can be categorized as external and internal. In order to obtain relevant answers, household heads were asked to describe the type of 'difficulties they experienced'⁴ over the last twelve months that hampered their access to assets and well-being. The external shocks respondents mentioned were flooding, sudden increases in prices of goods and government policies. Almost all the sampled household heads (95 percent) identified flooding as the major problem they experienced. They intimated that unexpected floods often destroyed their houses, canoes and other household and personal properties that cost them much money to restore or replace. The respondents also lamented over sudden increases in prices of goods and services as a result of inflation, which they (the respondents) all blamed on government policies. Virtually, all of them (99 percent) made mentioned of increases in staple food prices and high cost of petroleum products. They also mentioned the high prices of fishing inputs, such as nets and outboard motors and their spare parts. The fish processors/traders noted during the focus group discussion (FGD) that they sometimes lost substantial income through inadequate sale of fish any time there was sudden increases in prices of, especially petroleum products.

³ It should be pointed out, however, that all these people, in the real sense of the word, are fishing crews who do not possess their own net or outboard motors but work for others who possessed these facilities.

⁴ We were compelled to use this expression because the exact meaning of the term was difficult to capture in the local language of the respondents by simply asking them what type of 'vulnerability' they experienced.

The four most mentioned difficulties which can be termed as internal shocks were serious illness, motor accidents and accidents at sea as well as the destruction of fishing gears by industrial trawlers. Also reported were the accidental deaths of household heads or members. The sampled household heads who experienced internal shocks within the study period (78 percent) stated that it led to a reduction in their income, decline in access to food and above all rendered them indebted. Sixty-two percent (62 percent) of the household heads experienced ill-health of children, wives or husbands and other household members, while 3 percent experienced accidents. They said the above cases had negatively affected their already precarious economic status, since much money and productive time were spent in solving health-related problems.

The female household heads who had lost their husbands or other household member (2 percent) and ill-health of husbands (3 percent) during a peak fishing season reported reductions in purchasing power and severe reduction in the household's nutritional level. Three percent (3%) of male headed households who lost a household member also intimated that they spent substantial amounts of money and other resources on burial and funeral rites. A few of the respondents (5%) experienced damages of fishing nets by industrial fishing trawlers. Furthermore, more than half of all the respondents (55 percent) encountered difficulties during the period under study which, in turn, affected their already precarious income status. The majority of the participants thus reiterated during the FGD sessions that various accidents contributed to their inability to secure adequate income and other vital assets for their livelihood activities.

Seasonality: From the perspective of Sustainable Livelihood Framework, periodic changes that occur throughout the year influence people's access to assets and livelihood outcomes. Indeed, seasonality plays a very important role in the lives of people in diverse ways. In an open-ended question household heads were asked whether they experienced any difficulties as a result of change of weather or government policies over the last twelve months. A significant number (93 percent) reported difficulties, such as inadequate household food consumption during the main fishing season, which is between June and September each year. According to them, fishing activities are often hampered by prolonged high runoffs and floods during the main fishing season (that is between June and September) with bumper catch in the study area. This unfortunate situation prevented them from taking advantage of this main fishing season. Indeed, almost all respondents during the interview and FGDs indicated that the rainy season hampered their works and income. The season, according to the respondents, generally exposed them to epidemics, such as cholera and malaria due to excessive flooding. Most of the respondents also stated that the flood normally resulted in the loss of properties, such as fishing gears, boats, houses, animals and other personal and household belongings. These occurrences, as they noted, did not only make them indebted, but also reduced the nutritional level of their households.

Trends: Majority of the respondents (98 percent) identified depletion of fish resources as a major problem that was, and is, affecting their livelihood strategies. An elderly chief fisherman lamented as follows:

[...] in the 1980s to early 1990s, we could catch all types of fish almost every day and throughout the year to the extent that we had to throw some back into the sea, but what do we experience these days? [...] people go to sea and come back with virtually nothing or just a small catch, which is not even enough to pay for fuel and other costs. This happens not just a day, a week or a month but throughout the year, and things are becoming worst as days go by [...].

Large household sizes and the growing dependence on fishing resources by the majority of community members have also contributed to their vulnerability. Despite the decline in the fish resources, the study indicates that the practice of polygamous marriage and large household sizes, which are two correlated characteristics of fishing communities (Mensah *et al.* 2006), is still widely

present in Ketu South District. Table 2 presents the level of vulnerability of the household heads by selected characteristics, namely livelihood status and level of access to assets.

Table 2: Occupation, Access to Capital and Vulnerability Context of Household Heads

Occupational Status	Access to Assets (%)			Vulnerability Context(%)		
	High	Medium	Low	Least	More	Most
Fishing (N=32)	0.0	2.0	98.0	1.4	38.2	60.4
Carpentry/boat builder (=1)	0.0	100.0	0.0	0.0	100.0	0.8
Processor/Trader (N=7)	30.4	68.4	1.2	78.2	20.3	1.5
Dress making (N=3)	0.0	87.4	12.6	54.0	40.0	6.0
Driver (N=1)	0.0	100.0	0.0	0.0	100.0	0.0
Teacher (N=1)	100.0	0.0	0.0	100.0	0.0	0.0
Hairdresser (N=1)	0.0	100.0	0.0	100.0	0.0	0.0
Mason (N=1)	0.0	100.0	0.0	100.0	0.0	0.0
Petty Trader (N=3)	27.5	56.5	16.0	73.3	12.4	12.3

Sources: Fieldwork 2013

In Table 2, household heads that experienced both internal and external shocks are categorized as most vulnerable and those who had experienced one form of shock or the other are categorized as more vulnerable. Comparatively, what one deduces from this Table 2 is that household heads with low access to assets, which is somewhat related to their occupational status, are the most vulnerable to shocks during the period under study. The other observation is that household heads with high or medium access to capital are less vulnerable and thus have significant ability to recover more quickly. In contrast, those with limited access to assets may find it more difficult to recover or cope with similar situations that confront them. As a result, they become poorer. This has created a vicious cycle in terms of the vulnerability context of the households and their access to assets in the two communities. Ninety-two percent (92%) of all the sampled respondents intimated that their excessive exposure to vulnerability made them powerless and hampered their access to various assets needed for their livelihood activities. Only a small number (8 percent) of the respondents claimed they were resilient to the prevailing vulnerability context in which they live.

The following remark was taken from an interview with an elderly boat and net owner concerning the influence of the vulnerability context on livelihood activities:

[...] there is nobody here in these communities, whether rich or poor, who can come out boldly that his or her means of generating income is free from frequent increases in prices of food, premix fuel, frequent outbreak of cholera and malaria, in addition to our large family sizes, and above all our 'main enemy', the excessive flood, which always destroys our properties and habitats [...] we are all affected in one way or the other [. ...] for me, nobody is less vulnerable here. That is why almost all the community members here are very poor [...] we only struggle to survive my son.

The above explanation further highlights the nature of the vulnerability context in which fishing communities in the study area exist as well as its influence on their access assets for livelihood activities.

Discussions

A large number of households depend directly on fisheries, while a small number were involved in other livelihood activities such as petty trading, driving, hair dressing and dress-making. From the vulnerability literature, the three major types of external factors that frame people's vulnerability context are shocks, seasonality and trends. This study revealed that virtually all the three featured prominently as some of the main factors responsible for lack of access to assets by households in Amutinu and Tetekorfe.

The study has established that many households in the two selected communities located do not have access to assets due not only to exposure to ill health or loss of household heads or members, but also as a result of excessive floods caused by both the sea and the lagoon. Jentoft (2000) argues on the basis of their findings that small-scale fishers are not only poor, but they are also extremely vulnerable as a result of their locations and work.

Vulnerability towards floods could account for the outbreak of diseases, which could be the result of poor sanitation. The findings resonate with Black and his colleagues' research that has found that small-scale fishers are not only poor, but they are also extremely vulnerable as a result of their locations and work (Paavola, 2008; Black, Bennett, Thomas & Beddington, 2011).

Studies indicate that large household sizes induce the possibility of entry into poverty and reduce the chances of a rapid exit (Bokisi, 2007; Baulch & McCulloch, 1998). This observation seems to be part of the vulnerability context of people in the study locations, as majority of the households had large family size. This pattern of large family sizes coupled with high prices of fishing inputs and food items, as evidenced in this study, could compel many households to reduce their food consumption as they lacked purchasing power. Low consumption of nutritious food by households is likely to make them more vulnerable by exposing them to diseases that can undermine their attempts to come out of poverty.

The study also shows a vicious cycle in terms of the vulnerability context of the households and their access to assets in the study locations. This is because households with limited access to assets were either barely or unable to recover or to cope with shocks and stress, and as a consequence became more vulnerable. The finding, however, that a large number of households' (92.7 percent) access to assets was hampered by shocks and stress as against a small number (7.3 percent) who were quite resilient suggests that the relationship between households' access to assets and resilience to vulnerability in both communities under study is not linear; it is rather complex.

In his study of West African fisheries sector, Bortei-Doku Aryee concludes that, "on the whole, post-independence fisheries policies have tended to favour industrial fisheries at the expense of the artisanal sector" (Bortei-Doku Aryee, 2002: 336). This observation seems to hold true for the findings in this study. It is established in the study that although the two coastal fishing communities (Tetekorfe and Amutinu) were more vulnerable to the activities of industrial foreign fishing trawlers, the Government and other stakeholders were insensitive to their plight, and failed to protect their interests and activities from industrial fishing trawlers. This finding also confirms Akyeapong (2007) and Atubuga and Atta-Kesson's (n.d.) reports that government of Ghana has over the years downplayed persistent complaints from artisanal fishermen on how fishing activities of industrial trawlers have been affecting their access to the fisheries resource. It is worthwhile to state that lackadaisical approach in addressing issues, such as this one, by authorities concerned is partly responsible for the current unsustainable development of rural coastal fishing communities in Ghana with its consequences like child labour and trafficking within them.

Summary and Conclusion

This study explored the vulnerability context in which fishing communities, namely Amutinu and Tetekorfe in the Ketu District of the Volta Region exist, and how they influence their access to vital assets for survival. Using survey questionnaire, in-depth interview guide and focus group discussion, 50 household heads were interviewed through random sampling technique. The study has shown that vulnerability contexts, such as loss of property through flooding, sudden price fluctuations, serious illness or death of household members, and government policies were the factors that constrain access to assets of households. Data analysis from the study reveals that households with low or no access to capital were barely able to deal with shocks, diseases and stress. That is in a vicious cycle, households in Amutinu and Tetekorfe's inability to deal with vulnerability tend out to hamper their access to

assets to enhance their resilience to vulnerability. This study also revealed that some households within the two communities with high access to assets experience vulnerability.

The general finding that constant state of deprivation through adverse shocks, trends and seasonality experienced by households in Amutinu and Tetekorfe constitute critical barriers in their attempt to have access to vital assets for their livelihood activities, has implication for rural fisheries policy and development. Holistic resilience-building to cope with vulnerability contexts is necessary. As noted by Jentoft (2000), the problem of vulnerability and resilience should not be limited to fisheries regulations. What this implies is that the protection and development of the fisheries cannot be adequately carried out without considering its environment and the people who depend on it for livelihood. This underscores the need for a 'bottom-up' approach by taking steps to involve fishing community members in the fisheries resource management. A better movement towards greater appreciation of fishing communities in managing the fisheries resources through the provision of vital assets will not only help to reduce their vulnerability through the building of a resilient livelihood platform, but will also increase their income. Such approach is also likely to reduce their susceptibility to the ecosystem.

It is worthwhile to note that the present study is restricted to two coastal artisanal fishing communities in only one particular district and region, further comparative studies would be needed to ascertain whether the findings in this study hold true for other artisanal coastal fishing communities in other regions of the country. Studies of this nature could enhance a strong and more valid establishment of generalizations on the situations within these communities in the entire country. In the same field of interest, a similar comparative study could be conducted between artisanal coastal fishing communities and their inland counterparts in the context of their portfolio of livelihood activities and access to assets.

References

- Adato, M. & Meizen-Dick (2001), *Assessing the impact of agricultural research and poverty using the sustainable livelihoods framework*. International fund policy research institute, African Development Bank.
- Agbodeka, F. (1992), *An economic history of Ghana: From the earliest times*. Accra: Ghana University Press.
- Ahiawodzi, A.K. (1997), 'Economic activities'. In: F. Agbodeka (ed.) *A handbook of Eweland Volume 1: The Ewes of southeastern Ghana*, Accra: Woeli Publishing Services, pp. 250-263.
- Akpalu, W. (2002), 'Compliance to mesh size regulations in artisanal marine fishery in Ghana', A paper presented at Beijer Research Seminar, South Africa: Durban Accessed at www.sam.sdu.dk/fame/menu/phdbeskriv/akpalu.pdf on 1st July, 2010.
- Akyeampong, E. (2007), 'Indigenous knowledge and maritime fishing in West Africa: The case of Ghana'. *Tribes and tribals, special volume No. 1*: 173-182.
- Allison, E.H. & F. Ellis (2001), The livelihood approach and management of small scale fisheries. *Marine policy* 25: 377-388.
- Atta-Mills, J. Alder, J. & U.R. Sumaila (2004), 'The decline of a regional fishing nations: The case of Ghana and West Africa'. *Natural Resources Forum* 28:13-21.
- Atuguba, R. & R. Atta-Kesson (undated), 'Of fish, fishing, fisher folk, the law and fishing institutions'. Accra: Ghana.
- Badjeck M.C, Allison, E.H, Halls, A.S, & N.K. Dulvy (2010), Impacts of climate variability and change on fishery-based livelihoods *Mar Policy* 44:375—383
- Bank of Ghana (2008), *The fishing sub-sector and Ghana's economy*. Accra: Bank of Ghana.
- Baulch, B. and N. McCulloh (1998), "Being poor and becoming poor: Poverty status and poverty transitions in rural Pakistan". Working paper 77, Institute of Development Studies, University of Sussex.
- Béné, C. (2004), *Poverty and small-scale fisheries in West Africa*. Dordrecht: Kluwer.
- Black R, Bennett, S.R.G., Thomas S.M. & J. R. Beddington (2011), Climate change: migration as adaptation. *Nature* 478:447-449
- Beall, J. Kanji, N. & C. Tacoli (1999), African urban livelihoods: straddling the rural-urban divide. In: S. Jones & N. Nelson (eds.), *Urban poverty in African: From understanding to alleviation*. London: International Technology Publications, p.160-168.

- Bokosi, F.K. (2007), 'Household poverty dynamics in Malawi: A bivariate probit analysis'. *Journal of Applied Science*, 7: 258-262.
- Bortei-DokuAryeetey, E. (2002), 'Socio-economic aspects of artisanal marine fisheries management in West Africa'. In: J. McGladeet *et al.*, (eds) *The Gulf of Guinea large marine ecosystem*. Amsterdam: Elsevier Science B.V.
- Chambers, R. (1995), "Poverty and livelihoods: Whose reality counts?" Discussion Paper No. 347, IDS, Brighton.
- Chambers, R. & G. Conway (1992), "Sustainable rural livelihoods: Practical concepts for the 21st century", Brighton: IDS, IDS Discussion Paper 296.
- Corbett, J. (1988), 'Famine and household coping strategies'. *World development* 16(9): 1099-1112.
- Directorate of Fisheries (2003), *Ghana post-harvest fisheries overview*, Accra: Directorate of Fisheries.
- Elasha B. O., Elhassan, NG, Ahmed, H. & S. Zakiddim (2005), "Sustainable livelihood approach for assessing community resilience to climate change: Case studies from Sudan", AIACC Working paper No. 17, Assessments of impacts and adaptations to climate change (AIACC), Washington.
- FAO/IFAD/WB (2009), 'Module 13: Gender in fisheries and aquaculture'. In: *Gender in agriculture sourcebook*, p. 561-600. Washington D.C.: World Bank.
- Ghana Statistical Service (2002), *2000 population and housing census*. Accra: Ghana
- Guyer, J.I. (1995), 'Women's farmer and present ethnography: Perspectives on a Nigerian restudy'. In: D.F. Bryceson (ed.), *Women wielding the hoe: Lessons from rural Africa for feminist theory and development practice*. Oxford and Washington DC: Berg, pp. 25-46.
- Harpham, T. & E. Grant (2001), 'Health, health services and environmental health, in Rakodi and Lloyed-Jones (eds), *Urban livelihoods: A people centred approach to reducing poverty*. London and Sterling, V.A.: Earthscan Publications Limited.
- Jentoft, J. (2000), 'The community: A missing link of fisheries management' *Marine Policy* 24, 1, 53-60.
- Ketu South District (2010), *Ketu South District Profile 2010*. Denu: Ketu South District.
- Kraan, M. L. (2009), *Creating space for fishermen's livelihoods: Anlo-Ewe beach seine fishermen's negotiations for livelihood space within multiple governance structures in Ghana*. PhD thesis. Amsterdam: University of Amsterdam.
- Krantz, L. (2001), 'The sustainable livelihood approach to poverty reduction: An introduction', Swedish International Development Cooperation Agency
- Mensah, M.A. Koranteng, K.A. Bortey, A. and D.A. Yeboa (2006), *The state of the world fisheries from a fisher worker perspective: The Ghanaian situation*. ICFS: Samudra Mongraph.
- Moser, C. (1998), 'The asset vulnerability framework: Reassessing urban poverty reduction strategies'. *World Development* 26(1).
- Moser, C. (1996), *Confronting crisis: A comparative study of household responses to poverty and vulnerability in four poor urban communities*. Washington, DC: TheWorld Bank.
- Nukunya, G.K. (1997), 'The land and the people'. In: F. Agbodeka (ed.) *A handbook of Ewe land Volume 1: The Ewes of southeastern Ghana*, Accra: Woeli Publishing Services, pp. 8-13.
- Odotei, I. (1995) "Migration of Ghanaian fishermen within the ECOWAS sub-region", In: K. Twum-Baah (ed.) *Migration research study in Ghana*, Vol. 2, 7- 23.
- Owuor, S.O. (2005), Coping with urban poverty: a case study of rural farming by urban households in farming Nakuru, Kenya. *Hekina-Journal of humanities and social science* 3 (1); 84-101.
- Rakodi, C. (2002), 'A livelihoods Approach—Conceptual issues and definitions'. In: C. Rakodi, and T. Lloyd-Jones (eds), *Urban Livelihoods*. London: Earthscan Publicatons Ltd, pp. 3-22.
- Townsley, P. (1998), 'Social issues in fisheries', *FAO fisheries technical paper* No.375 FAO, Rome, Italy, p.93.