

Borlaug LEAP Paper**Ethnography in Agricultural Research:
A Tool for Diagnosing Problems and Sustaining Solutions****Kwame N. Owusu-Daaku^{1*} and Sheila N. Onzere²****Kwame Ntiri Owusu-Daaku**

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Abstract

In order to meet the future challenges of African agriculture, scientists and policy makers will need to move away from prescriptive measures, to more adaptive ways of understanding and addressing problems based on local capabilities and resources. Ethnographic frameworks and methods are one adaptive tool that researchers can use in parsing out complex situations within the context of local practice and culture. This paper highlights the use of an ethnographic framework called the Livelihoods as Intimate Government (LIG) approach and its application in Ghana and Malawi. The authors demonstrate how without preconceived ideas about what challenges exist, the LIG approach is able to illuminate some of the most pressing needs that affect the livelihoods of rural smallholder farmers. Preconceived notions tend to lead to poor diagnosis of problems, which then results in misplaced solutions and misapplication of funds to implement recommended strategies. Use of LIG sets parameters that are specific to the local context, which promotes development of appropriate policies, and sustainability of food security programs, ensuring that limited funds are used appropriately.

Key words: Ethnography, field methods, Ghana, Malawi



Background

There exists a growing consensus that in order to meet the challenges of African agriculture (Fischer *et al.*, 2009) such as climate change (Schlenker and Lobell, 2010; Thornton *et al.*, 2011), scientists and policy makers will need to move away from prescriptive measures based on predetermined hypotheses and research designs to more adaptive ways of understanding problems and recommending probable solutions (Herrick and Sarewitz, 2000) based on people's capabilities and access to resources (Gurein, 2007; Hope, 2002). Ethnographic frameworks and methods are one such adaptive tool researchers can use in parsing out complex situations within the context of local practice and culture (Bharwani, 2006; Berkes *et al.*, 2000; Abel, 1998; Roncoli, 2006).

This paper highlights the use of the Livelihoods as Intimate Government (LIG) approach and its application to agriculture in two countries – Ghana and Malawi. The authors demonstrate how the LIG approach is able to illuminate some of the most pressing needs that affect the ability of agrarian communities to make a living without a preconceived notion of what the challenge at hand is. Such preconceived notions tend to lead to poorly diagnosed problems, which then result in unsuitable recommendations and interventions.

Methods

Qualitative tools and methodologies commonly employed by programs and projects provide a way to broadly evaluate local contexts and aspects that define people's capabilities such as access to resources, livelihood activities or power relationships. These methodologies and tools have provided important insights into how social cleavages such as gender, age and wealth impact the vulnerability, adaptive capabilities and resilience of people within particular contexts (Carr and Owusu-Daaku, 2015). Beyond this, however, there is a lack of methodologies and tools, which can articulate the complex interactions and relationships between social, economic and environmental contexts and between various social cleavages. This is where the LIG approach comes in. The LIG approach seeks to understand decision-making in light of competing goals and interests as well as particular individual and community framings of the world (Carr, 2013, 2014). These competing goals and framings form the basis of observed livelihood strategies and outcomes. See Figure 1 for a graphical outline of the LIG approach.

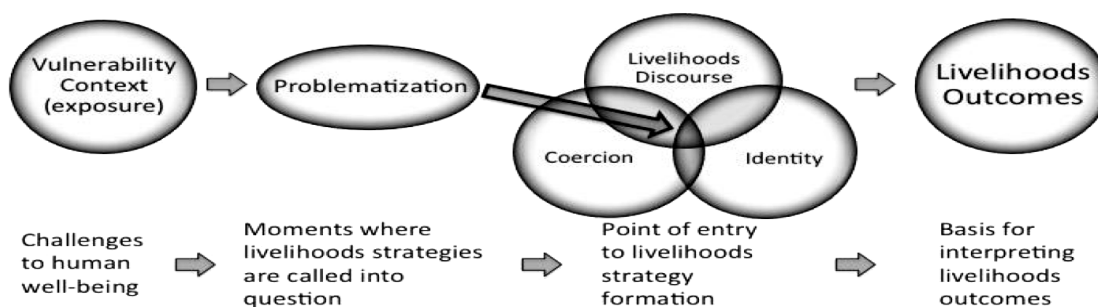


Figure 1: Conceptual Diagram of Livelihoods as Intimate Government (LIG) approach (Carr *et al.*, 2015)

The Vulnerability Context portion of the LIG approach seeks to establish what stressors are affecting livelihood activities or the context within which decision-making occurs (Carr, 2014). In the problematization stage of the LIG approach, the researcher identifies competing claims of different groups of people about a specific issue within the vulnerability context. The third phase of the methodology explores three associated themes as an entry point into understanding decision-making. These themes are *discourses*: the ways in which people think and speak about or act in reference to a phenomenon; *tools of coercion*: practices or technologies by which behavior is influenced, and the *mobilization of identity*: the representations of self, constructed by individuals and society, to which people ascribe or must conform to that influence their discourses and tools of coercion. The final stage of the LIG approach analyzes the reasons for which people make certain decisions or take specific actions by linking outcomes to their production through discourses, tools of coercion or mobilization of identity.

The identification and understanding of the various roles and responsibilities individuals have with regard to their livelihood activities throughout the LIG approach is important for understanding what actions they can take to respond to particular problems (Carr and Owusu-Daaku, 2016; Onzere *et al.*, 2015; Carr[ed], 2014; Carr *et al.*, 2015). The lenses through which these roles and responsibilities should be identified and understood have to be contextual and not assessed on a priori basis (Carr and Owusu-Daaku, 2016; Onzere *et al.*, 2015; Carr[ed], 2014; Carr *et al.*, 2015). This is where the Livelihoods as Intimate Government (LIG) approach (Carr, 2013; Carr, 2014) proves most useful. LIG enables the identification of who does what particular activities and around what social cleavages or groupings people with these various responsibilities fall (Carr, 2014).

Objectives

This paper demonstrates the adaptability of the LIG approach as an interpretive framework and field methodology for agricultural research by illustrating the application of the approach in two different contexts in two countries. The Ghana case study employs the first two stages of the LIG approach in-depth - understanding the vulnerability context and identifying the problematization (see Figure 1) – and the following stages at a more surface level in research on the use of sea defense systems as an adaptation to coastal erosion and flooding (attributable to climate change) in river delta communities where there are large numbers of farmers and even larger numbers of fisherfolk (both men and women involved in the fishing industry). The Malawi case study utilizes the LIG approach in designing and collecting data for a gender analysis within the context of an ongoing climate change project. The Malawi case study focuses on only the vulnerability context to achieve its goals for the gender analysis. These two very different case studies demonstrate that one does not have to employ all the stages of the LIG approach in order for the methodology to have utility.

Description of Research Methods

Each application of the LIG approach involved extensive desk studies which included literature reviews and content analysis of relevant information sources, semi-structured interviews and focus groups, and site and participant observations.



The information presented and discussed in the Ghana case study, is from a sample of 52 residents in communities of the Keta Municipality of the Volta River Delta (VRD) (48 % who are male and 52% who are female) and a sample of 7 government officials (5 municipal level and 2 national level). Since the overall purpose of the study was to evaluate sea defense systems as an adaptation to climate change in river deltas from the perspective of various actors, selecting the study areas was relatively straightforward. The two areas in the VRD with such coastal infrastructure are the Keta municipality and the Ada East district, so these two districts emerged as the geographical areas for the study. This paper discusses only information from the Keta municipality at the community and municipal government levels. The major livelihood divisions of the community residents are fishing-related activities such as fishermen and fish mongers (women who smoke and sell the fish), farming-related activities which include mangrove harvesting, trading activities described as those who do petty trading and do not primarily engage in the sale of fish or farm produce and service providing activities such as hairdressers and an electrician. Some respondents stated more than one livelihood and so could be categorized in more than one division but it was the livelihood they declared as their major livelihood that the authors used to determine which category to place them under. See Figure 2 for the proportions of each livelihood division.

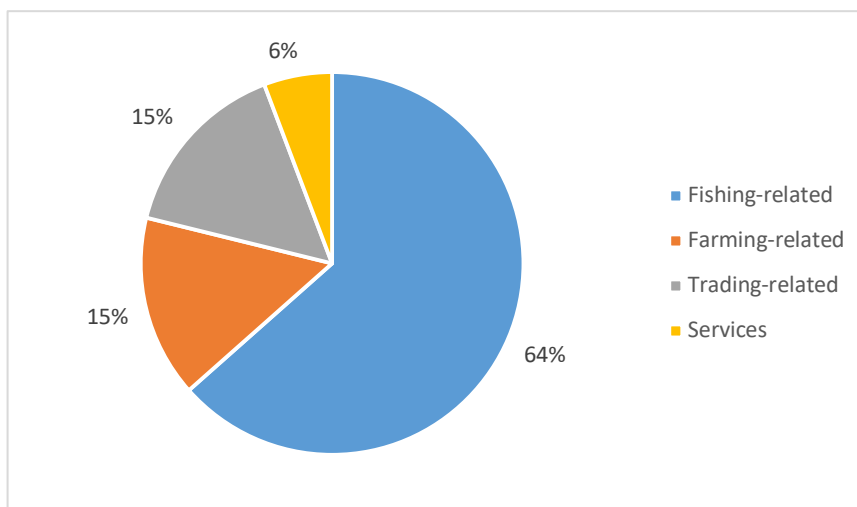


Figure 2: Major livelihood divisions

The information presented and discussed from the Malawi case study is with interviews from eighty respondents within Kwilasya, a community living adjacent to Liwonde Forest Reserve. The forest reserve located in Machinga district in southern Malawi, is part of the extensive Miombo woodlands, which extend across central and southern Africa and cover significant land areas in Angola, Zimbabwe, Zambia, Malawi, Mozambique, Tanzania, and southern Democratic Republic of Congo. In Malawi, Miombo woodlands are important for agricultural based livelihoods since they are water catchment areas and provide an important source of wild fruit and mushrooms for surrounding agricultural communities. A major challenge, however, is that these woodlands have become highly degraded and have been completely lost in some areas

with land clearing for agriculture as one of the major drivers of this degradation. Understanding the vulnerability context of the agrarian communities surrounding these woodlands is critical in designing context-suited interventions in order to reverse and slow down degradation.

Of the respondents interviewed in Malawi, the majority were Yao by ethnicity, followed by Lomwe. Table 1 shows the ethnicity of respondents in more detail. Out of a total of 80 respondents, 50 were women and 30 were men. About 21% of the respondents had no education at all, while 36% of respondents had some primary school education, 13% finished primary school, and 6% of respondents had attended secondary school. With regard to marital status, 61% of respondents were monogamous, 25% were in polygamous marriages while about 8% of respondents were divorced.

Table 1: Respondent Characteristics Kwilasya Forest Co-Management Block

Ethnicity	Frequency	%
Yao	45	56.25
Lomwe	28	35
Manganja	2	2.5
Nyanja	1	1.25
Ngoni	1	1.25
Tumbuka	1	1.25
Total	80	100

Summary of Findings and Recommendations

The Vulnerability Context

Climate Change in the Volta River Delta of Ghana

For the Ghana case study, the vulnerability context is the issue of climate change in the Volta River Delta (VRD) of Ghana. A significant number of studies characterize coastal erosion as the most significant problem affecting the VRD (Addo *et al.*, 2011; Boateng, 2009, 2010, 2012; Bollen *et al.*, 2010; DARA and CVF, 2012; Kusimi and Dika, 2012; Nyamedor and Codjoe, 2013). Although coastal erosion is a natural process, it is expected to be exacerbated by sea-level rise (SLR) and increased frequency and severity of storms as a result of climate change (Wong *et al.* 2014). Many studies attribute the increasing rate of erosion in the VRD to the construction of the Akosombo dam, which was completed in 1961 (Anthony and Blivi, 1999; Addo *et al.*, 2011; Boateng, 2009, 2010, 2012; Boateng *et al.*, 2012, Bollen *et al.*, 2010, Gyau-Boakye, 2001). These studies indicate that the damming of the Volta River reduced the amount of sediment carried down into the delta making the region more susceptible to the action of sea waves. In the VRD, coastal erosion destroys homes, reduces coastal lands and their attendant biodiversity, and causes unemployment for those whose farmlands are affected (Kusimi and Dika, 2012). These changes are happening at different rates in different parts of the VRD specifically in the Keta Municipality, where two sea defense systems have been constructed. The Keta Municipality is located in the south-eastern part of Ghana along the coast, east of the Volta River estuary. According to Ghana's 2010 Population and Housing Census, Keta's total

population was about 147, 618 with 53.5% being female and 46.5% being male (Keta Municipal Assembly, 2013).

For the Keta Township, the average estimated rate of coastal erosion after the seawall's construction is 2 m/year with highs of 4 m/year (Addo *et al.*, 2011). Before the construction of the wall, the average annual rate of coastal erosion was estimated to range from 2-8 m/year (Nairn *et al.*, 1998). The predominant livelihoods of the municipality are fishing, crop and vegetable farming, and livestock rearing (Keta Municipal Assembly, 2013). Human activities in deltas need to be studied in more detail to effectively increase the resilience of deltas and their populations to future changes (Ericson *et al.*, 2006). One such human activity is the construction of sea defense systems to deal with the phenomenon of coastal erosion.

The likely biophysical impacts of climate change on deltas such as coastal erosion have received significant attention. However, relatively little attention has been paid to the ways in which the different stakeholders of deltaic environments frame the vulnerability of residents of deltas to climate change. Such framings are important for three reasons. First, the ways in which residents of deltas frame their own vulnerability is critical to understanding the likely future adaptation pathways these populations will follow to manage the worst impacts of climate change on their lives. Climate change adaptation pathways refer to decision-making options with regard to which actions will be taken to adapt to the impacts of climate change (Wise *et al.*, 2014). Second, how policymakers and others view the vulnerability of these residents is important for understanding if these actors are creating policies and planning for a future that aligns with one envisioned by delta residents. Third, there is the potential for the perceptions and actions of delta residents and policy makers and/or others to be unaligned, which could either exacerbate the existing CCV of these residents or result in new segments of the population becoming vulnerable to the impacts of climate change.

The third reason of misalignment has already been expressed in the form of sea defense systems in the Volta River Delta (VRD) of Ghana. Between 2001 and 2004, the Government of Ghana (GoG) implemented the construction of a sea defense system in the Keta area of the VRD consisting of a 9km road, flood control and sea defense structures and land reclamation (Angnuureng *et al.*, 2013; Boateng., 2009; Cotsapas, personal communication) officially known as the Keta Sea Defense System (KSDS). Later on, between 2008 and 2014, the GoG implemented the construction of a 2.7 km-defense system, in addition to the rehabilitation of a road destroyed by erosion (Andoh, 2014; Blagojee, 2014) between Srogbe and Kplortorkor in the Keta municipality. This second development is referred to in this paper as the Atorkor Sea Defense System (ASDS). Research reveals that the Keta sea defense system is creating greater erosion downshore, east of the system (Angnuureng *et al.*, 2013; Addo *et al.*, 2011; Boateng, 2009).

Malawi: Livelihood Stressors through a Gender Lens in the Midst of Climate Change Programming

For the Malawi case study, the issue was the need to understand the gendered vulnerability contexts of agrarian and forest-based livelihoods, of those living adjacent



to Liwonde Forest Reserve and consequently how the vulnerability context has an impact on trade-offs between prevention of forest degradation and maximization of livelihood opportunities. As earlier stated, the Malawi case study presented does not touch on discourses or tool of coercion as articulated later for the Ghana case study. Instead the data presented for Malawi, show the varying ways in which men and women see themselves as vulnerable to different stressors. This case study, therefore, focuses attention on the ability of LIG approach to carefully illuminate nuanced vulnerabilities within particular contexts.

Figure 3 shows the livelihood stressors, in declining order of frequency of mention as identified by residents of Kwilasya. Financial problems were most commonly cited with 62.5% respondents mentioning poverty, not having enough income or being cash poor as a major livelihood concern inhibiting the ability to meet day-to-day household basic needs. Financial problems were attributed to the lack of a regular source of income as well as not having crop surpluses for sale. Fifty four percent of those who identified financial problems as a major livelihood stressor reported having problems acquiring food, household utensils, clothes, salt, sugar, soap as well as difficulties paying for school fees, making house repairs and needed farm labor. Forest activities including logging and charcoal burning present some of the few opportunities available to acquire and income.

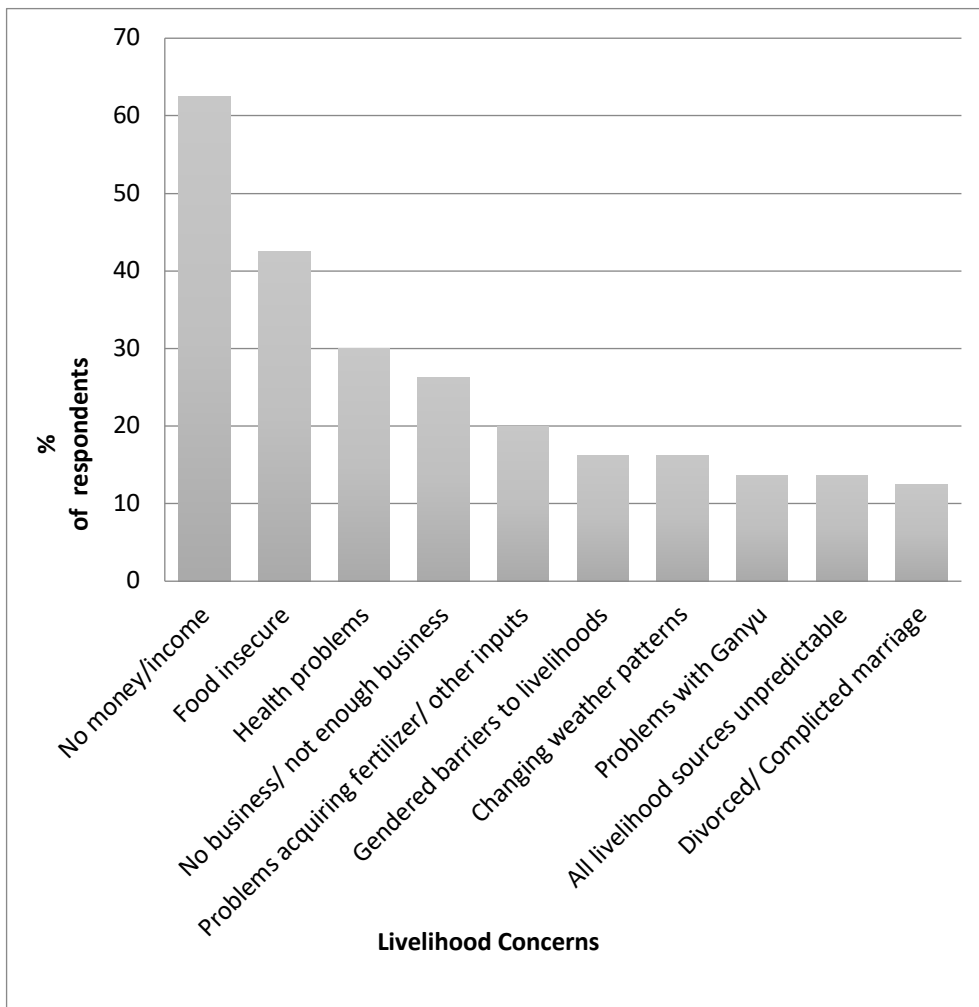


Figure 3: Major livelihood concerns identified - Kwilasya Forest Block

The second most commonly mentioned livelihood stressor (42.5% of respondents) was the inability to feed the household through to the next harvest season. This exacerbated the need for households to have cash purchase food during the hungry season. 16.25% of respondents mentioned changing weather patterns as a primary livelihood concern. This included changes in the dry and rainy seasons of the growing season. Thirty percent of respondents indicated health is a major concern. Sickness of the farmer herself or himself, which reduced the ability to work and make a livelihood, was the most frequently discussed problem under health issues. Lack of access to adequate health care facilities because the nearest reliable health facility is more than six kilometers away in Liwonde town was also seen as a significant health related challenge. Other frequently mentioned livelihood concerns included lack of business/lack of demand for business services provided (21% of respondents), problems acquiring fertilizer and other inputs (20%), gendered barriers to livelihoods (16%), problems with ganyu (day labor) (14%), having unpredictable livelihood sources (14%) and divorce or complicated marriages (13%).

The lower ranking of changing weather conditions as a major livelihood concern (16.25%) buttresses the argument being made in this paper that a problem or challenge should not be assessed a priori. Under research in the context of a climate change program, changing weather conditions (attributable to climate change) was not the main livelihood stressor of respondents.

When the most mentioned livelihood concerns are segregated by gender (and other social cleavages such as age), some interesting similarities and differences can be seen. Figure 4 shows those livelihood concerns reported by both male and female respondents. For both men and women financial hardship and food insecurity remained the most important livelihood concern, followed by food insecurity. For 67% (20) of men and 60% (30) of women financial hardship was a major concern.

In the sample, 40% (12) of men and 44% (22) of women reported being food insecure. Health problems were also a concern for both men and women with 30% (9) men and 30% (15) women reporting illness as a major impediment to making a livelihood. While both female and male respondents were concerned with personal illness, young women also expressed concern about the impact of their children's illness on their ability to carry out livelihood activities since they are the primary caretakers for sick children. A slightly higher percentage of men, 27% (8) were concerned about the lack of business opportunities within the community than women 26% (13). A slightly larger percentage of women (18%) reported changing weather patterns compared to men at (13%).

Around 17% of men and 12% women were concerned with problems with *ganyu*. These problems included the lack of *ganyu* opportunities in the area, less pay compared to the amount of work completed, failure to get paid for work already done, and the fact that *ganyu* is an undesirable social activity. A young female respondent explained the social undesirability of *ganyu* when asked what she liked about her livelihood activities. "*I don't think there is anyone who can say that I am happy or proud to be doing ganyu. I just do it because I am lacking some basic needs (Kwilasya # 1). Ganyu, however is a source of "fast money" (Kwilasya # 75) and is sought when there is a need to supplement other livelihood activities. Another female respondent explained why she does ganyu in this way. "I don't really like it but I do it when I have problems just to make sure that I can be able to support my family throughout the year" (Kwilasya # 53).*

Four percent (7) of women complained about the unpredictability of livelihood resources, compared to 13% of men. Interestingly, many of these respondents had multiple livelihood strategies. For example, the breakdown of women in this group shows that two women practiced rain fed agriculture and sold agricultural produce, two were farming and doing *ganyu*, one woman was farming, selling agricultural produce and selling *mandasi*¹, one was practicing both rain fed farming and *dambo*² land agriculture, and another was practicing both rain fed farming and irrigated farming.

¹ Fried doughnuts also known as "ball floats"

² Marshland



A significant difference was found in concerns about acquiring enough fertilizer for household farming. Forty seven percent of men (14), were concerned about having access to sufficient inputs, particularly fertilizer, while only 12% (6) women reported the same concern. Most respondents rely on subsidy coupons from the government to purchase fertilizer. These coupons, however, require two households to share one bag of fertilizer³ and as a result respondent often complained of having very little fertilizer to meet their needs. Although the number of female respondents reporting fertilizer concerns is rather small, an interesting aspect is that all except one of the women were in polygamous marriages or divorced. More information is needed on whether polygamous marriage or divorce has an impact on women’s access to inputs and in what way.

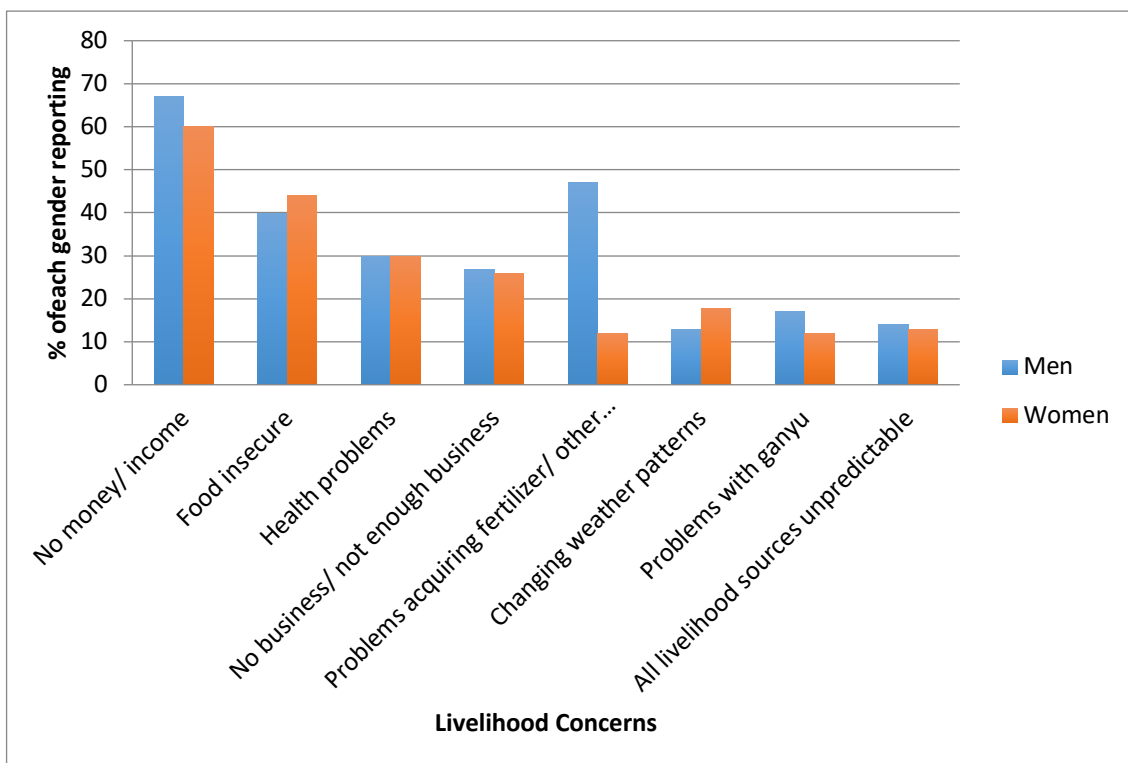


Figure 4: Livelihood challenges by gender – Kwilasya Forest Block

Several gender-specific vulnerabilities, that is concerns only mentioned by men and those only mentioned by women, were reported. For women, gendered barriers to livelihoods were the fourth most mentioned livelihood vulnerability with 16% of women indicating that being a woman is a major contributor to the challenges they faced. Various reasons were provided for this challenge. Married women have limited control of their ability to temporarily migrate outside the village in search of employment or business opportunities – a strategy that was available to and often employed by men. Young migrant women also reported problems with social isolation.

³ 1 bag of fertilizer is 50 kgs

These women lacked the same social support system they would have had while living in their home villages. This made farming and other daily activities more difficult since non-migrant women rely heavily on family members, in particular female relatives including sisters, cousins and friends to assist in farming, domestic work, and childcare responsibilities. One woman discussed exposure to illnesses as an important vulnerability associated with being a woman. The elderly woman explained that she had significant difficulty in managing her day-to-day activities due to complications associated with HIV/AIDS: *“I feel like because I am a woman I was exposed to the disease because of my husband. If I had the power to make decisions, I would not have been exposed to the disease”* (Kwilasya # 70). Divorce/complicated marriages was a concern mentioned by 12% of women. This included divorced women, women in polygamous marriages, and women whose husbands have migrated to South Africa, but are not sending money back home. The main concern was difficulty meeting household needs given limited or non-existent assistance from men.

Four male respondents indicated that having too many people to support was an important contributor to their vulnerability context. Two male respondents expressed concerns that there were no employment opportunities within the country. That is even though men have the ability to migrate to search for better paying work, this work is often scarce within the country. One male respondent explained how this was problematic for earning a living. *“I feel like everywhere I can go I can’t be employed so the main reason is that Malawi is poor”* (Kwilasya # 21). For two young male respondents limited decision-making was indicated as a problem since the in-laws control major farming assets (land, *dambo* land). This also points to a possible second manifestation of age and gender for men with younger men having limited decision-making power over household reproductive resources.

Problematization

In the problematization stage of the LIG approach, the researcher identifies competing claims of different groups of people about a specific issue within the vulnerability context. The problematization is both the object/idea around which the definition of a problem to be solved is formed, and challenges to the order of things around which that definition emerge (Bacchi, 2012). Problematizations emerge around disagreements in a targeted livelihood group around how and why members of a group live the way they do - these disagreements are then identified as a challenge to be solved

Ghana: Sea Defense Systems as an Adaptation to Climate Change

In this research, the differing claims are those of community residents versus government officials on the benefits or otherwise of sea defense systems as an adaptation to the climate change impacts of coastal erosion and flooding.

Claims from Community Residents on Sea Defense Systems

The community residents were interviewed with regard to their thoughts on the two sea defense systems in the Municipality: the Keta Sea Defense System (KSDS) and the Atorkor Sea Defense System (ASDS). Forty-eight (48) percent of interviewees expressed their thoughts about the KSDS (based on where they were located) while 52% made claims about the ASDS (for the same reason as the KSDS). Their thoughts



were summarized under the following categories: Positive (respondents generally thought the sea defense was good and had helped curbed the problem of coastal erosion and flooding), Negative (that the sea defense was not helpful and was causing more problems such as erosion in some instances), Mixed (both Positive and Negative claims) and Ambivalent. See Figure 5 for a summary of the distribution of these thoughts and Figure 6 for the distribution of these thoughts by the sea defense system in question.

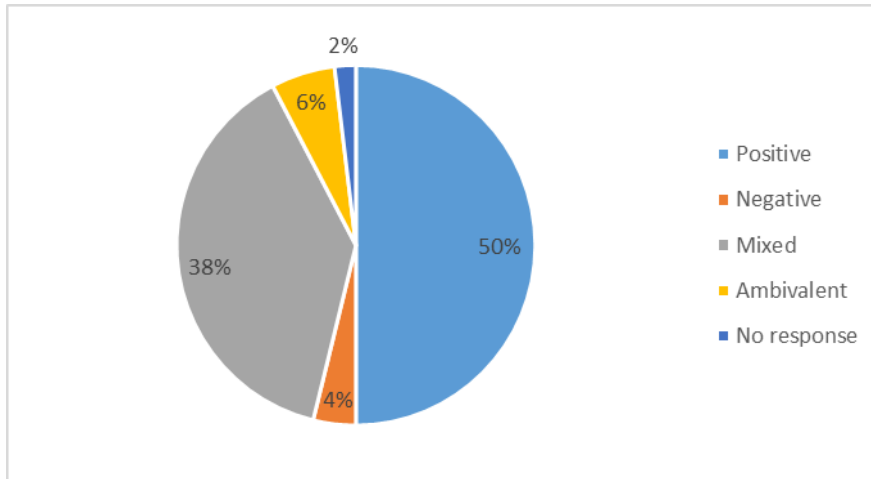


Figure 5: Distribution of Thoughts on Sea Defense Systems

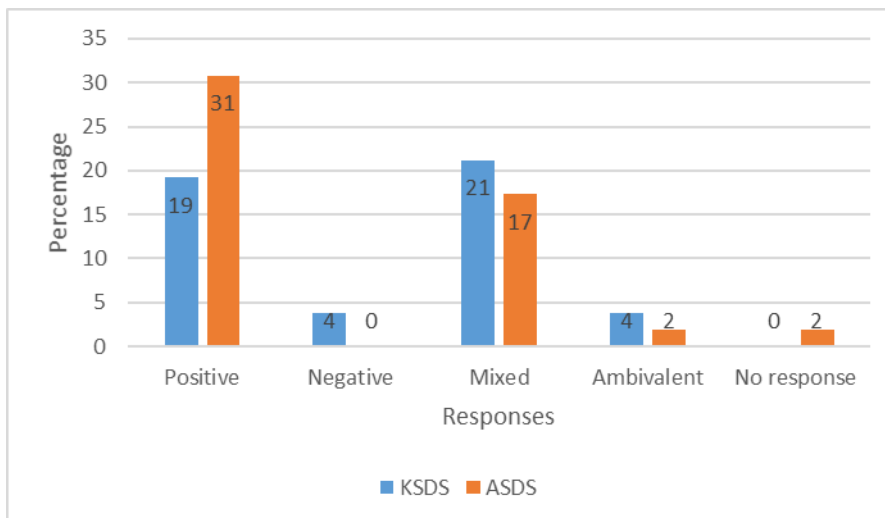


Figure 6: Distribution of Thoughts on the Sea Defense Systems by Sea Defense System

Figure 5 shows that 50% of respondents had positive thoughts about the sea defense system. However, this same figure illustrates that as many as 38% had mixed thoughts on the sea defense systems, with the remaining 12% distributed among ambivalent (6%), negative (4%) and no response (2%). As many as half of respondents not thinking sea defense systems is an entirely positive adaptation to climate change begs further investigation. Figure 6 showing the distribution of these thoughts by either the

KSDS or ASDS also reveals some interesting findings. According to Figure 6, the ASDS has more positive responses than the KSDS; less negative responses (in fact zero negative responses) than the KSDS; less mixed responses than the KSDS and less ambivalent responses than the KSDS. The overall more positive view on the ASDS can be attributed to the fact that the ASDS was completed much more recently (2015) than the KSDS (2004) and so some of the negative views on sea defense systems such as causing further erosion would take a longer time frame to manifest.

Claims of Municipality Officials on Sea Defense Systems

Five municipality officials were interviewed about their thoughts on the sea defense systems. The analysis focused on the district as the level of governmental focus because the District Assembly (DA) is considered the foundation of local governance in Ghana (ILGS and FES, 2010). The departments of the interviewed officials are as follows: economic planning, natural resources management, engineering, disaster management, and information. Table 2 provides a summary of their thoughts on the sea defense systems.

Table 2: Thoughts of Municipal Officials on Sea Defense Systems

Role	Thoughts on Sea Defense Systems
Economic Planning Officer	Mixed
Natural Resources Management Officer	Ambivalent
Engineer	Mixed
Disaster Management Officer	Mixed
Information Officer	Mixed

Contrary to popular research which demonstrates that government views are often different from that of local residents (Muller-Mahn and Everts, 2013), Table 2 illustrates that the views of the municipality officers interviewed are in line with the 38% of residents (mixed thoughts on the sea defense systems). In fact, speaking by majority numbers alone, we could argue that a majority of community residents view the sea defense systems as positive while a majority of municipality officials have mixed views on the projects. This difference in majority views is most likely a function of proximity to the intervention (i.e. the sea defense system) but it is interesting to note that the reverse of the expected outcome (more government officials would view a government implemented project as positive, than community residents) is what the data and analysis so far illustrate. This preliminary finding requires more research and analysis to be more conclusive. The mixed views of the municipality officials arise mainly from their knowledge of the project implementation process and how they generally felt sidelined by the national government in the planning and implementation of all associated activities with the sea defense system. The one ambivalent response was from the officer who stated he had received no contact whatsoever from any government official (either at the municipal or national level) or consultant with regard to the sea defense project.

Claims of National Government Officials on Sea Defense Systems

Two government officials were interviewed at the national level on their thoughts on sea defense systems as an adaptation to climate change. One official's work was related to project impact assessment and the other's work involved climate change related issues. Both these national level officials had positive views on sea defense systems as adaptations to climate change. These officials' overall positive view, as opposed to the municipal officials' generally mixed ones, could be due to the national level officials' both physical and administrative distance from these projects-particularly the fact that they do not have to deal with community residents, over half of whom, according to the information in Figure 5, do not have entirely positive views about sea defense systems. For these officials a problem was identified i.e. coastal erosion and flooding and the problem has been solved by the construction of a sea defense system.

To conclude this session, sea defense systems as a problematization reveals that half of the community residents interviewed have positive views on the system while half do not have entirely positive views; the municipality officials have overall mixed views and the national level officials have positive views. Sea defense systems as an adaptation to climate change clearly mean different things to different people.

Discourses, Tools of Coercion and the Mobilization of Identity

According to the LIG approach, this phase of the methodology explores three associated themes as an entry point into understanding decision-making. These themes are discourses: the ways in which people think and speak about or act in reference to a phenomenon; tools of coercion: practices or technologies by which behavior is influenced, and the mobilization of identity: the representations of self, constructed by individuals and society, to which people ascribe or must conform to that influence their discourses and tools of coercion.

Ghana: Livelihoods, Climate Change and Resettlement

The information for the Ghana case study presented in this paper does not touch on the mobilization identity but analyzes the discourses of community residents, municipality and national officials and discusses one tool of coercion by way of a resident resettlement program for the KSDS.

Discourses of Community Residents

The discourses of community residents were garnered by asking them what their biggest challenge in making a living for themselves was. A variety of responses were received and summarized as follows: climate-related challenges such as flooding and coastal erosion; livelihood-related challenges – challenges that did not have a direct linkage to climate but impacted the respondent's ability to make a living such as competition from fishing trawlers and fluctuating prices of fish on the market; and living-situation related-which had to do with issues that were not directly linked to the climate but had more to do with the particular place in which the respondent was living such as irregular municipal water supply or bad roads. Many respondents described challenges that fell under more than one of these categories. However, the first challenge that respondents mentioned was taken as the one that was foremost on their minds. Based on this assumption, the categories of climate first, livelihood first and living situation first were created to reflect the discourse that was more important to the respondent.

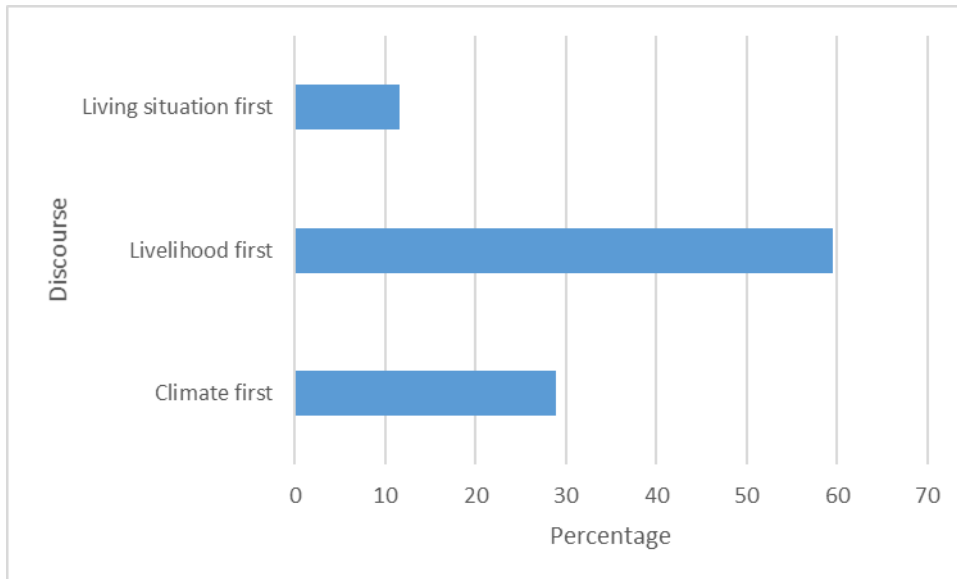


Figure 7: Discourses of Community Residents

Figure 7 indicates that 60% of community residents had a livelihood first discourse with regard to their greatest challenge in making a living or their vulnerability context. Thus, it is not so surprising that about 50% of community residents did not have an entirely positive view on the sea defense systems and that about 38% of these views were a mixture of both positive and negative views. “Climate first” challenges fall in second at 29% while “living situation first” challenges come in last at 12%. This information is in line with research that demonstrates that the climate is often not the most important stressor in the lives of people who live in environments which the rest of the world considers climate-stressed (Nyantakyi-Frimpong and Bezner-Kerr, 2015) and in line with the findings of the Malawi case study with regard to changing weather patterns under the vulnerability context.

Discourses of Municipal and National Officials

The discourses of government officials that their views on sea defense systems as an adaptation to climate change can be traced to stem largely from their roles or job descriptions. This linkage results from the capacity in which these officials granted the interviewer an interview. These officials were speaking to the interviewer as representatives of the state and so the knowledge and ideas they alluded to were based on their positionality to the interviewer who was a non-government official. A summary of their discourses is seen in Table 3.

Table 3: Discourses of Government Officials

Role	Discourses
Economic Planning Officer	Climate Change
Natural Resources Management Officer	Environmental Degradation
Engineer	Project Sustainability
Disaster Management Officer	Disaster Risk Reduction
Information Officer	Climate Change
Project Impact Assessment Officer	Project Impact
Climate Change Focal Person	Climate Change

Most of the discourses in Table 3 with regard to the government officials' roles seem self-explanatory. Two probably non-intuitive ones explained a bit further are those of the economic planning officer and the information officer whose discourses were mainly one of climate change as opposed to economic development of information service provision needs respectively. The officers were aware that the larger project the interviewer's research was related to had to do with climate change vulnerability and adaptation, hence the discourses they harped on, which probably influenced their views on the sea defense system, were of climate change. The interviewer's positionality to them and vice versa played a role in determining which discourse with regard to their job description they tapped into.

Tool of Coercion: the KSDS Community Resettlement Program

Some communities had to be resettled as a result of the construction of the KSDS. This resettlement involved the construction of homes on reclaimed land as part of the KSDS project, into which community residents moved once the homes were complete. While analysis of the information on the community residents' views and experiences is ongoing, a preliminary high-level summary indicates that residents' perspectives on the resettlement program vary. Some residents are satisfied with the new homes they have received, while many others are not, citing poor workmanship, deteriorating structures and inadequate facilities (some homes were alleged to not be connected to a septic tank even though the home possessed a water closet facility). Many residents also wished they could have stayed in their former locations and not had to move despite the fact that they were being affected by the sea. Adequate information is currently unavailable to ascertain the degree to which an attachment to place overrides the impact of a climate-hazard resulting in a desire to "adapt in place" and not have to move but it is clear that place attachment plays a role in this complex situation. The community residents by way of the resettlement program were managed or "policed" as it were. Their ability to move and where they went were all conditioned by an entity outside of them i.e. the national government with support from the municipal government.

The National Disaster Management Organization (NADMO) unit in the Municipal Assembly oversaw the resettlement process. Allocation of homes however was directly managed by a local committee. Recipients of houses had pre-registered with the committee and municipal assembly before construction of the homes had begun.

At the municipal level, there were complaints from some municipal officials about how the national government implemented the construction process with non-locally sourced contractors (One of these officials mentioned these contractors as coming from Accra-the capital of the country). The municipal assembly officers complained about how they could not monitor the work of these contractors as they had no legal agreements with them and the contractors did not live within the municipality. This inability of local sourcing and oversight resulted in some shoddily built or unfinished houses. Presently there is no information on the resettlement program from national government officials but hopefully such views will be incorporated in subsequent analyses in order to make the assessment of the resettlement program more holistic.

Outcomes

This final stage of the LIG approach analyzes the reasons for which people make certain decisions or take specific actions. It links outcomes such as project implementation dissatisfaction to their production through discourses of climate change, or livelihood security and tools of coercion such as a community resettlement program in the case of Ghana. In the case of Malawi, the LIG approach suggests an outcome of a more intersectional understanding of gender by way of a mobilization of people's identity.

Ghana: Uneven Landscapes of Climate Change Adaptation

The outcomes the sea defense system as an adaptation to climate change produce are highly uneven. The process produces a mixture of views on the benefits of the sea defense system where only half of the community level sample sees the adaptation as entirely positive. The other half constitutes a mixture of positive, negative and ambivalent views. The views of community residents on their greatest challenges are more focused on things that directly affect their livelihoods and that are not necessarily linked to the climate. Also, municipal officials who represent the government at the local level are not altogether pro sea defense projects as climate change adaptation. On the other hand, national level officials have wholly positive views on sea defense systems. The reasons for these varying and seeming contradictory views will need analysis beyond the preliminary assessment provided here in order to provide answers beyond those that have already been outlined in this paper.

Malawi: Intersectionality Advances the Identification and Understanding of Vulnerability Concerns

The Malawi case study confirms that operationalizations of gender are indeed intersectional and a matter of process rather than rigid identity and that understandings of gender as illuminated by the LIG approach affect people's vulnerability and ability to adapt to specific stressors in their lives (Onzere *et al.*, 2015).

Recommendations

The two case studies clearly demonstrate that one-size-fits-all-solutions are inappropriate for the future of African agriculture especially in the context of climate change and conservation related issues as the LIG approach had to be tweaked in each context to fit the specificities of the situation under investigation.



In the Ghana case study, the LIG approach has proven a useful lens with which to view sea defense systems as an adaptation to climate change. From this initial assessment, these projects are producing uneven outcomes and the views of stakeholders on their benefits are expectedly varied with some surprising results at the municipal level where government officials have a more nuanced view on the benefits or otherwise of sea defense systems. Further analysis is needed to determine some possible reasons for these varying views, especially with regard to the mobilization of identity component of the LIG approach in order to understand what aspects of people's identity influences their perceptions and how these perceptions interact with wider social forces in the complex project of climate change adaptation.

For the Malawi case study, it is evident that intersectional understandings of gender beyond the male and female binary provide a better understanding into vulnerability concerns so that these concerns can be addressed adequately. A separate analysis into discourses and tools of coercion from the overall Malawi case study would provide an in depth understanding of how exactly residents of Kwilasya navigate the tensions between sustainable forest use and the maximization of livelihood opportunities.

The overall recommendations from the findings presented in this chapter are that ethnographic frameworks and methods such as the LIG approach should be employed in agricultural research in order to better understand complex problems and to facilitate the development of more appropriate solutions that are not ultimately maladaptive.

The application of ethnographic frameworks and methods such as the LIG approach in agricultural research supports programs and projects that advance food security by ensuring that these programs operate within contextually relevant parameters with regard to the threat to food security being addressed – whether that threat be climate change or environmental degradation. Operating within parameters that are context-specific promote the sustainability of policies and programs that advance food security and ensure that limited funds in an era of increasing need are appropriately used.



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