



Shrinking mobility in soaring temperatures

Understanding the impact of changes in mobility on household adaptive capacity in semi-arid rural northern Ghana



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Abstract

The semi-arid west Sahelian plains of northern Ghana have experienced some of the most drastic climate changes on the planet. For many rural northern Ghanaians, internal seasonal migration is an important and long established autonomous strategy to adapt to these changes. The creation of new opportunities, supported by a planned adaptation intervention, is beginning to change patterns of mobility in one rural community in northern Ghana. The primary objective of this research is to explore how these changing patterns of seasonal migration affect household capacities to adapt to climate change. To achieve this, an analysis of the adaptive and maladaptive impacts of mobility on households is presented alongside an investigation into the shifts in patterns of seasonal migration in the selected case study community in the last ten years.

In the context of new income generating opportunities, this research identifies a number of key ways that mobility weakens and strengthens household adaptive capacities and offers interpretations of these findings to determine the impact of changes in mobility on household adaptive capacity. This thesis finds that seasonal migration has declined in the last ten years and that the key reason for these changes is the uptake of dry season farming which is supported by a community based adaptation intervention. Despite the maladaptive impacts, it is argued that the loss of the adaptive benefits of mobility has a damaging effect on adaptive capacity, most notably for households that have stopped migrating altogether, and particularly in the long term.

This thesis recommends that greater attention and importance be afforded to mobility and other autonomous adaptation strategies by intervening agencies. Firstly, in order to identify adaptive outcomes of autonomous behaviour that can be facilitated and maladaptive outcomes that should be prevented or mitigated. Secondly, to identify gaps in the adaptive benefits that autonomous strategies offer as target areas for interventions. Thirdly, to provide a more comprehensive and complete basis upon which adaptation interventions and their net impact on adaptive capacity can be analysed and assessed. Fourth and finally, to increase our collective knowledge and understanding of what adaptation is. At this pivotal moment when adaptation is rising up the international climate change agenda to sit alongside mitigation; acknowledging, understanding and learning from autonomous adaptation strategies will enrich the way we *know* and *do* adaptation, and could be decisive in enabling the world's most climate vulnerable communities to adapt to climate change.

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Acronyms and Abbreviations

ACCRA: Africa Climate Change Resilience Alliance

ALP: Adaptation Learning Programme for Africa.

CBA: Community Based Adaptation

COP: Conference of Parties

ECOWAS: The Economic Community of West African States

IPCC: Intergovernmental Panel on Climate Change

LAC: Local Adaptive Capacity framework

MoFA: Ministry of Food and Agriculture (of Ghana)

NAPA: National Adaptation Programme for Action

NELM: New Economics of Labour Migration

PAS-G: The Presbyterian Agricultural Station - Garu

PSP: Participatory Scenario Planning

PTA: Parents and Teachers Association

VSLA: Village Savings and Loans Association

1. Introduction

The effects of global climate change are likely to have a disproportionately large impact on the poor and in particular, the rural poor. It is widely accepted that poverty is one of the most salient indicators of those who are most vulnerable to climate change. For those who live in rural northern Ghana, on the west Sahelian plains, and who rely on agriculture for quasi-subsistence, climate change is having a severe impact. Shifts in the quantity of yearly rainfall, the growing unpredictability of the onset and cessation of the rains and prolonged dry spells during the rainy season are threatening livelihoods, food security and human development. To put it succinctly; “Sahelian droughts have been observed to be among the largest climate changes anywhere” (Bates et al., 2008). Thus, for households living in rural northern Ghana, the need to adapt is urgent. As Agrawal and Perrin (2008) assert, “the only alternative to adaptation is extinction”.

Whilst the extent and speed at which the climate is changing and becoming increasingly erratic is accelerating, climate change itself is not a new phenomenon. People all over the world have been adapting to climatic stimuli for centuries creating innovative solutions to maintain their livelihoods. Mobility, or migration, is one of these traditional adaptive mechanisms that people have used for many years. Black, R. et al. (2013) suggest that “‘eco-migrancy’ is a deeply engrained and traditional response to climatic stress and variability”. By spreading the risk of climatic impacts across space, diversifying livelihood (ideally in a non-climate dependent sector), reducing the amount of ‘mouths to feed’ at home and building social capital, knowledge and innovation (Agrawal and Perrin, 2008), “migration may be the most effective way to allow people to diversify income and build resilience where environmental change threatens livelihood” (Black, et. al, 2011).

However, autonomous adaptation strategies will not be sufficient for those households living in highly exposed areas and whose agricultural livelihood is highly sensitive to climatic variations (Smit et al., 2001; and, Adger et al., 2003). The need for external interventions to enhance the capacities of climate vulnerable households to adapt to climate change is profound. As the growing need for external support for local adaptation projects has begun to receive more international attention, ‘new’ funds have become available and ‘new’ adaptation interventions are initiated. It is widely accepted that external projects that support and build upon autonomous adaptation strategies are more effective than those that do not (Adger et al., 2003; Agrawal and Perrin, 2008; Tacoli, 2009; Agrawal et al., 2010; Antwi-Agyeyi et al., 2014; Bawakyillenuom et al., 2014). However, the initiation of dry season farming in a small community in northern Ghana, supported by a Community Based Adaptation (CBA) intervention, appears to be changing patterns of seasonal migration. The apparent decline in mobility is viewed largely as a success of the project by the NGO, since new livelihood opportunities have arisen

in the local area which has meant that households no longer need to move in search of alternative sources of income during the dry season.

A fall in outward migration from an impoverished area as a result of an external intervention has often been celebrated as a sign of a successful project and of development. Whilst many have discussed the need for adaptation to be aligned with broader human development goals (Adger et al., 2003; Tacoli, 2009; Huq and Ayers, 2013; Suckall et al., 2014), the view that reduced migration and mobility is desirable for development conflicts with the perspectives and discussion from academics and thought leaders in the climate change adaptation field. These opposing visions of mobility present a conflict between projects that focus on enhancing adaptive capacity and the more traditional development and poverty reducing interventions. Whether or not reduced mobility is viewed as positive may even unveil the hidden backbone or agenda of an intervention and demonstrate if it is truly an adaptation initiative or if the focus is livelihood building and poverty reduction. This dichotomy between development and adaptation; the aligned objectives, and those which conflict, offers the broader realm within which this research sits and contributes towards.

This thesis supplements the valuable research which investigates the relationship between mobility and climate change adaptation (Black, et al., 2013; McLeman, and Smit, 2006; Scheffran, et al., 2012; Tacoli, 2009; Warner and Afifi, 2014); and that which explores mobility and other autonomous climate change adaptation and coping strategies more specifically within rural northern Ghana (Bawakyillenuom, et al., 2014; Rademacher-Schulz, et al., 2014). By examining the impact of mobility on adaptive capacity within the context of new local opportunities, and in particular, exploring the impact of adaptation interventions on mobility and the implications this has for household adaptive capacity, this research contributes to an area of the discipline which has been granted limited focus. With a likely surge in adaptation interventions following the COP21 Climate Summit at the end of this year, this is certainly a corner of the field which demands closer attention.

Considering that mobility is claimed to be positive for climate change adaptation, but in practice, adaptation intervention leaders regard reduced migration as a sign of success, what are the implications of changes in migration patterns on adaptive capacity, within the context of new dry season farming opportunities? How have mobility patterns changed and to what extent has the initiation of NGO supported dry season farming affected this? Furthermore, which societal groups have changed their patterns of migration as a result of dry season farming, and for whom do traditional mobility patterns remain a vital climate change adaptation strategy? It is these dynamics that are the object of investigation and discovery within this research and to these questions this research hopes to provide enlightening and insightful answers.

2. Theoretical framework

Before reviewing the literature that discusses the relationship between migration and climate change which is central to this research, it is first necessary to explore and understand the key concepts related to climate change adaptation. The need to adapt was described briefly in the introduction to this thesis, but what *is* adaptation? In this section, and making full use of the climate change adaptation literature that exists, I outline the inter-related concepts of adaptation, adaptive capacity and vulnerability, explain the ACCRA Local Adaptive Capacity framework – the conceptual model that underpins this research – discuss the different types of adaptation strategies, and conclude with a discussion on the relationship between climate change and mobility.

2.1 Adaptation, Adaptive Capacity and Vulnerability

Adaptation has its roots in the natural sciences but applied to human systems, and within the climate change context, it can be described as the “process of adjustment to actual or expected climate and its effects” (IPCC, 2014, pp1758). The primary goal of adaptation within human systems is to “moderate or avoid harm or exploit beneficial opportunities” which arise from increased climate variability and/or climate change (ibid.). This often involves adjustments by individuals, households, groups, or institutions in order to reduce societal vulnerability to the climate (Smit and Wandel, 2006).

Adaptations can be anticipatory or reactive (Smit and Wandel, 2006), sometimes referred to as proactive (or positive) adaptation and erosive coping strategies (Rademacher-Schulz et al., 2014). Reactive or erosive adaptation strategies are characterised by the diminishing effect they have on the development base of a household, often increasing future insecurity of food and livelihoods (Warner and Afifi, 2014). A good example of this type of behaviour is selling livestock or migration during the rainy season which reduces the harvest due to loss of labour. Proactive or positive adaptation to climatic stress provides greater food security as well as an increase in the household development base and adaptive capacity in the long term. For example, changing crop choices, using climate resistant seeds and engaging in off-farm income generating activities.

Of course, adaptive behaviour can be autonomous or planned depending on the degree of spontaneity, and it can be undertaken independently or collaboratively depending on whether or not there is the involvement of external actors (Smit and Wandel, 2006; Wossen and Berger 2015). External adaptation interventions aim to build or enhance adaptive capacity of individuals, groups or communities. The IPCC describe adaptive capacity as the “ability of systems, institutions, humans and

other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences” (IPCC, 2014, pp1758).

Adaptive capacity is ultimately the combined forces that influence the ability to adapt. At the local level, the ability to undertake adaptations can be influenced by managerial ability, infrastructure, the institutional environment, political influence, social networks and access to financial, technological and information resources amongst other factors (Agrawal and Perrin, 2008; Smit and Wandel, 2006). As such, adaptive capacity is intrinsically linked to the sustainable livelihood approach of analysing development (Huq and Ayers, 2013). Whilst some of these forces are largely local (e.g. social networks), there are others which may be determined elsewhere (e.g. availability of state-subsidised farming insurance). Adaptive capacity has been analysed in various ways, but for the purposes of this research, I will use the Local Adaptive Capacity framework (LAC) developed as part of the Africa Climate Change Resilience Alliance (ACCRA). The LAC is described in more detail in the following sub-section of this theoretical framework, along with an explanation for its selection as the primary conceptual framework for this research.

The concept of vulnerability within the context of climate change is described by the IPCC as the “propensity or predisposition to be adversely affected” (IPCC, 2014, pp1775). Vulnerability aligns the more socially determined concept of adaptive capacity with the physical *exposure* and *sensitivity* to climate risk. Exposure and sensitivity are almost inseparable concepts and reflect the physical distribution, frequency and magnitude of hazards experienced (Agrawal, Kononen and Perrin, 2009). Based on these definitions we can deduce that the extent to which individuals, households and groups are vulnerable to climatic stress is “context-specific and varies from country to country, from community to community, among social groups and individuals, and over time” (Smit and Wandel, 2006, pp287). Differences in vulnerability to climate change and in the impacts of external adaptation interventions between and within social groups is a central theme within this research.

A good way of analysing and understanding the differences in vulnerability and adaptive capacity is by looking at the example of Bangladesh and the Netherlands. Both of these nations have a high exposure to climate stresses in that they are both highly vulnerable to floods. However, the institutional capacity, asset base, managerial capacity, the infrastructure levels and access to technological, financial and information resources varies greatly. This means that the Netherlands has a very high adaptive capacity and has become less vulnerable to climatic stresses and shocks as a result. Bangladesh however, with a much lower capacity to adapt, is far more vulnerable to climate shocks as can be seen from the devastating floods over the last two decades. Since this is a fairly clear and obvious example of high and low vulnerability and adaptive capacities, distinguishing between these

two nations' ability to cope with and adapt to climate stresses does not appear difficult. However, when we consider all the many different enabling and disabling forces of capacities to adapt to climate change, the view becomes rather more unclear and ambiguous. It is especially more difficult when considering groups that are reasonably homogenous or even within groups themselves.

Over time, more focus has gradually been given to understanding the social barriers, limits and forces that influence vulnerability and capacities to adapt to climate change (Antwi-Agyei et al., 2014). This shift from technological, top-down approaches has also directed more emphasis towards the role of institutions. Indeed, in the last 10 to 15 years there have been a number of significant contributions to the literature emphasising the significance of institutions in their influence on household vulnerability and adaptive capacities (Adger et al., 2003; Agrawal and Perrin, 2008; Agrawal et al., 2009; Rodima-Taylor et al., 2012; Antwi-Agyei, 2014). Agrawal, Kononen and Perrin (2009) emphasise the attention that must be given to different levels of institutions by articulating that "adaptation never occurs in an institutional vacuum". Whilst distinctions are made between, public, private and civic institutions (Agrawal and Perrin, 2008), the role of informal institutions is stressed by Rodima-Taylor et al. (2012) as the most important to engage in order to enable effective adaptation to climate change. This is primarily due to the natural gravitation towards informal institutions in the face of unknowns, distrust or perceived high costs of 'new' externally created institutions.

2.2 Deconstructing Adaptive Capacity and the ACCRA Local Adaptive Capacity framework

Having identified some of the key determinants of adaptive capacity from the literature, it is clear that there is not necessarily one way to 'measure' or understand these highly normative concepts. For the purposes of this research, it is necessary to have a clear framework to show how adaptive capacity will be understood or even measured (albeit, in a qualitative, not quantitative sense).

The Local Adaptive Capacity framework (LAC), developed as part of the Africa Climate Change Resilience Alliance (ACCRA), is the product of extensive research and consultations with academics, policy-makers and practitioners and forms a conceptual basis for understanding how external interventions or changes in a system may affect adaptive capacity. It is ultimately an attempt to incorporate the dynamic and often intangible dimensions of adaptive capacity with capital/resource endowments into one model to analyse adaptive capacity at the local level (ACCRA, 2012). It is for this reason that the LAC framework will form the lens through which this research will analyse adaptive capacity.

The LAC framework lays out five distinct yet interrelated characteristics of adaptive capacity, expressed as a Venn diagram in Figure 1. They are (1) Asset base; (2) Flexible and forward thinking decision-making and governance; (3) Innovation; (4) Knowledge and information and (5) Institutions and entitlements. This is the primary conceptual framework which has been used to understand the impact of changes in migration patterns on adaptive capacity.

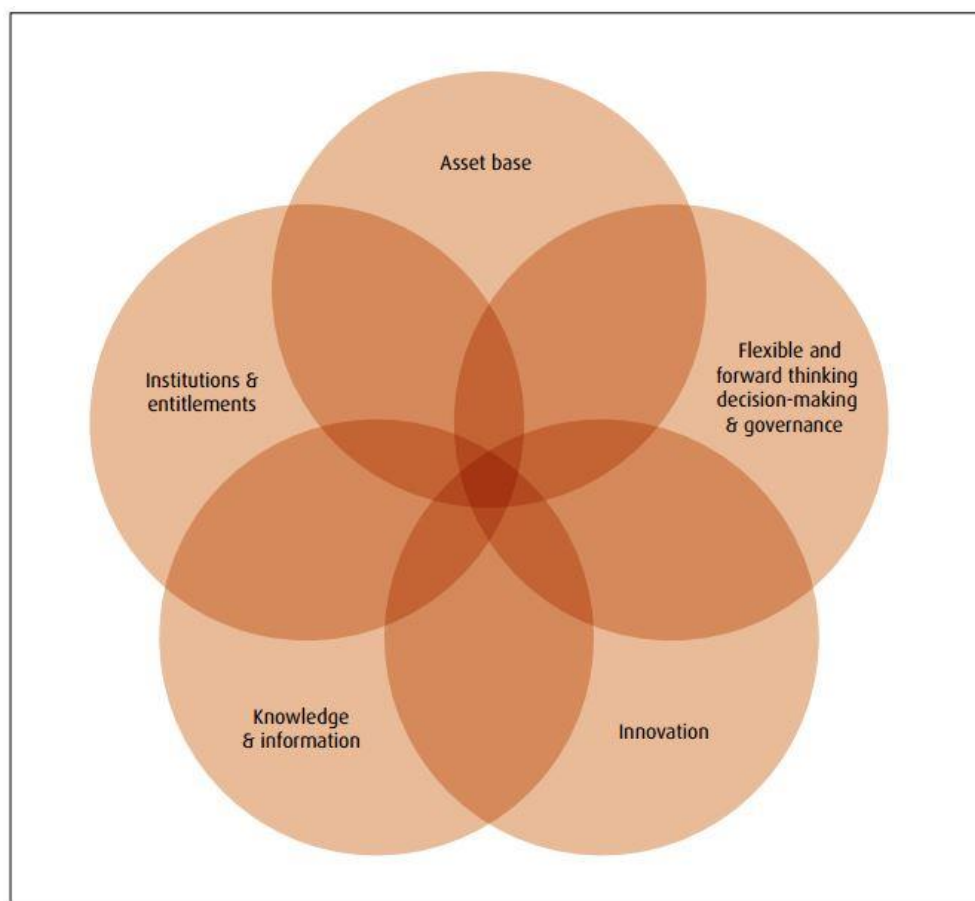


Figure 1: The ACCRA Local Adaptive Capacity (LAC) framework (ACCRA, 2012)

The *asset base* is characterised by the sustainable livelihood components of financial, physical, human, social, natural and political capitals necessary to adapt to a changing climate. Whilst this incorporates traditional forms of wealth in physical assets and money, it also includes important informal elements (e.g. social networks). *Institutions and entitlements* refers to equitable access to key resources needed for adaptation amongst different social groups. An institutional environment that enables equal opportunities (particularly for the most climate vulnerable) as well as representation and participation in decision making are central to this. Successful adaptation also requires *knowledge and information* of future climate changes and adaptation options. Systems to distribute relevant information at national and local levels and open forums for dialogue and discussion to incorporate local knowledge are key enabling features.

Innovation is a key component of adaptive capacity. Within the LAC model presented in Figure 1, innovation can be planned, technical and aimed at large-scale interventions; or it can be local-level autonomous initiatives. Importantly, the system must promote experimentation and protect against the inevitable risks that are intertwined with innovative behaviour. The final characteristic in the model is *Flexible and forward thinking decision-making and governance*. This incorporates transparency and prioritisation enabling local groups to be well informed about future climate change events to ensure they can take adaptive measures. Similarly, the flexibility to allow systems – and the institutions that direct them – to evolve and adapt in a changing environment is a vital component of adaptive capacity. (ACCRA, 2012)

The LAC model is designed as a lens through which one can analyse the impact of changes on adaptive capacities at the local level. A feature central to this model is that a change in any one of its five components will have an impact on adaptive capacity itself, but is also likely to compound the effect by influencing one or more of the other elements of the framework. The model does not however suggest that all of the five characteristics of the framework are weighted equally. Whilst this is also mentioned briefly later in this chapter, unfortunately, this does not appear to be something which is reconciled in the literature and is certainly an area requiring further understanding.

2.3 Types of adaptation strategies

Having discussed the key concepts within the climate change adaptation discourse, and before delving into the literature which discusses the relationship between migration and climate change, it is logical to take a step back to identify and understand the foremost strategies used to adapt to climate change.

The five key types of adaptation strategies often discussed in the literature are: (1) storage; (2) diversification; (3) communal pooling; (4) exchange; and (5) mobility (Agrawal and Perrin, 2008; and, Nakuja et al. 2012). *Storing* or pooling resources spreads risk from climate stimuli over time and is particularly effective when combined with well-constructed infrastructure, low levels of perishability and high levels of coordination across social groups. It could be effective even in the context of “complete livelihood failure” (Agrawal and Perrin, 2008). However, the need for infrastructure may necessitate some external involvement depending on the required materials and knowledge for its construction.

Diversification reduces climate risk across assets owned by the household and can be manifested in consumption strategies, employment opportunities or in relation to productive and non-productive assets. Diversifying is most effective when the new opportunity, asset or behaviour a household

engages in is less sensitive to climate stimuli than that which the household shifted from. (Adger et al., 2003; Agrawal and Perrin, 2008).

Communal pooling is completely dependent on high levels of trust and coordination and refers to “joint ownership of assets and resources; sharing of wealth, labour, or incomes across households” (Agrawal and Perrin, 2008, pp7). It can also entail the use or mobilisation of resources that are held collectively during a time of scarcity. Pooling resources communally shares and reduces climate risk across households.

Exchange is a versatile adaptation response and requires access to markets for the poor and is often viewed as a means to increase revenue flows. However, promoting exchange-based activities as an adaptation response must be approached with caution to ensure that the future development base is not eroded as with “erosive coping strategies” discussed earlier (Agrawal and Perrin, 2008; Warner and Afifi, 2014).

Increasing *mobility* as an adaptive response to climate change spreads household risks across space. It is often combined with diversifying incomes, to either on or off-farm activities in a different location, to enhance household livelihood in ways not possible if the entire household were completely immobile. Often undertaken as an autonomous livelihood and adaptation strategy by the rural poor and climate vulnerable households, the adaptation benefit is compounded by remittances as well as having ‘one less mouth to feed’ at home (Agrawal and Perrin, 2008). The relationship between mobility and adaptation to climate is explored in greater detail in the next sub-section.

As discussed, adaptation strategies or activities can be autonomous or planned (involving external stimuli). Often, autonomous strategies are long entrenched cultural adaptations that have become a significant part of life. They often involve little use of technology, finance or infrastructure and can be a slight or significant change in behaviour to make a household less dependent on vulnerable systems (Adger et al., 2003). Planned or externally driven adaptations typically involve the use or mobilisation of sources of technology, information and finance traditionally unavailable to those in a vulnerable area in order to enhance adaptive capacity (ibid.). Historically, external interventions have focussed more on the technology driven, infrastructure side of adaptation but in more recent years, more emphasis has been placed on important socio-political aspects such as capacity building, advocacy and institutional development which heavily influence adaptive capacities (Agrawal and Perrin, 2008).

Another progression in the general understanding of adaptation strategies in the literature is a rise in the importance and significance of autonomous adaptation strategies. It is widely considered that the most effective adaptation interventions make use of existing informal and formal autonomous adaptive activities (Adger et al., 2003; Agrawal and Perrin, 2008; Tacoli, 2009; Agrawal et al., 2010;

Antwi-Agyei et al., 2014; Bawakyillenuom et al., 2014). The importance of this can be observed by understanding more about the local adaptation context. Since changes in climate are not new, neither is adaptation. Populations in climate vulnerable zones have been engaging in adaptive activities for centuries and as such, before an adaptation intervention is initiated, adaptive capacity does not start at zero. Aiming to build adaptive capacity with new externally created initiatives can have maladaptive results if you hinder or prevent households from undertaking behaviour that has previously built and enhanced their adaptive capacity. This may constitute a challenge for policymakers given the vast variety of adaptation measures that are undertaken autonomously, especially in rural and poor areas (Bawakyillenuom et al., 2014). However, since processes of adaptation inevitably create both winners and losers (Adger et al., 2003), it is vital for external agents to be aware of and to analyse existing adaptive capacities, and the activities that create them, before beginning an adaptation intervention, if they are to create more winners than losers.

2.4 The relationship between migration and climate change adaptation

The debate surrounding the link between climate change and migration has been rather contested in recent years, with reports of hundreds of millions of 'climate refugees' fleeing from natural disasters caused by climate change and arriving at the doorstep of richer, Western nations (Vidal, 2009). Frequently cited figures suggest that by 2050 the number of people forced to migrate due to climate change will be somewhere between 200 million and 1 billion (Myers, 2005 and Christian Aid, 2007). This alarmist discourse has contributed to breeding a fear of mobility and migration as a response to climate change amongst many governments and policymakers. If policymakers discuss migration as a result of climate change, it is often discouraged and plans made to mitigate or control migration (Tacoli, 2009). However, evidence has shown this to be rather unnecessary since global empirical assessments of climate related migration have shown that, whilst internal migration patterns are susceptible to climatic stresses, international migration is "unlikely to be significantly affected" (Black et al., 2013).

A more nuanced understanding offers the perspective that migrants are active agents who make decisions to diversify and improve their individual or household livelihood (Ayers and Huq, 2013; Scheffran et al., 2012). Black et al. (2011) highlight environmental, social, political, demographic and economic factors as the key criteria upon which decisions to migrate are based. With a vast array of different 'push', 'pull' and 'intervening' factors driving decisions to migrate, the implications are that people are "as likely to migrate into places of environmental vulnerability as away from them" (Black et al., 2011 pp448; Black et al., 2013). Indeed, Sen reminded us that famines, such as those in north-

eastern Africa can be as much a consequence of social, political and economic inequalities that affect access and entitlement to food, as they are a result of changes in climate (Sen, 1999; McLeman and Smit, 2006).

Adger et al. (2003) differentiate between 'desirable' and 'displacement' migration as a result of climate stresses. They identify migration as a feasible adaptive response to climate change that will continue to play a significant role in livelihood resilience but warn that if desirable migration is not available or prevented, this will increase the necessity of displacement migration (ibid.). Warner and Afifi (2014) take this further by reflecting on evidence from a global empirical study entitled "Where the Rain Falls". They highlight that migration (temporary, seasonal or permanent) has a particularly positive long term impact on household resilience and adaptive capacity if households have diverse livelihood possibilities. Those households which do not may survive and maintain livelihood levels but are unlikely to flourish, whilst others may experience an erosion in living standards (ibid.).

Despite the evidence from academics and researchers demonstrating the benefits of mobility for climate change adaptation, and the negative consequences of ignoring or preventing it, many governments and policymakers appear to maintain a negative view of the relationship between climate change and migration. In a large study comparing climate change adaptation strategies and National Adaptation Programs for Action (NAPAs), in a range of developing countries in climate vulnerable zones, Agrawal and Perrin (2008) found that no public, private or civic institutions were supporting mobility to enhance adaptive capacity. However, the authors suggest that these results may have suffered from reporting bias from authorities¹ since none of the autonomous strategies listed in the reports included migration. Widely reported, along with diversification, to be the most common autonomous strategy to adapt to climate change, this demonstrates a significant, and potentially problematic opposition towards mobility as an adaptation strategy.

However, the latest IPCC report, does state migration as an adaptive response and suggests "managed migration" as a policy option for interventions, whilst also mentioning the possible maladaptive outcomes dependent on the opportunities and vulnerability in the receiving locality (IPCC, 2014). Although this is not elaborated or explained to a great extent in the report, this might begin to suggest a slight shift in openness to including mobility as a policy option but whether or not this manifests itself in practice remains to be seen. A challenge amongst practical interventions undertaken by government agencies and external NGOs, is to move away from traditional views of migration and mobility as signs of weakness or failure of their project. Outward migration is still often viewed as a

¹ The authors hypothesise that this reporting bias based on a desire of developing nation governments' not to encourage or even acknowledge migration as an adaptation strategy because of the aforementioned fear of millions of climate refugees moving to western countries - on whom many developing countries are reliant for development aid.

failure to create livelihood opportunities and more broadly as a failure of development (Tacoli, 2009). However, if the goal is to enable communities to adapt to climate change, perhaps increased mobility and outward seasonal migration could be viewed as a success.

As previously discussed, the consensus on supporting existing autonomous strategies is strong but which strategy is the most effective at enhancing adaptive capacity? Other than this support for autonomous adaptive activities, there seems to be little harmony in the literature as to the weighting of importance between different strategies or adaptation activities. Smit and Wandel (2006) highlight that adaptive capacity is highly localised and context specific. The vast array of forces that influence vulnerability and households' abilities to adapt varies greatly within and between groups and across space and time. The great variety of different strategies local individuals, households and groups have developed to cope and adapt over time is evidence of this (Bawakyillenuom et al., 2014). Whilst climate change is global, its impacts are inherently local and as such there can be no one adaptation mechanism that is appropriate for everyone. Interventions that encourage and enable participation in design of adaptation strategies and empowerment in decision making, particularly among the most marginal and vulnerable groups, are therefore more likely to have a more positive impact on adaptive capacity (Agrawal et al., 2009).

The question therefore remains; how important is migration to adaptation? And, if alternative opportunities are created in a climate vulnerable area, which reduces outward migration, what is the resulting net impact on household adaptive capacity? This question and the discovery of the answer is a central aim of this research in rural northern Ghana; the regional context for which is discussed in the next chapter.

3. Regional contextual framework

In this chapter, I present the regional context of the research area, in terms of national and local geography and poverty context, livelihoods, the local climate change and vulnerability context, and finally, the historical and current patterns of migration and mobility in the area.

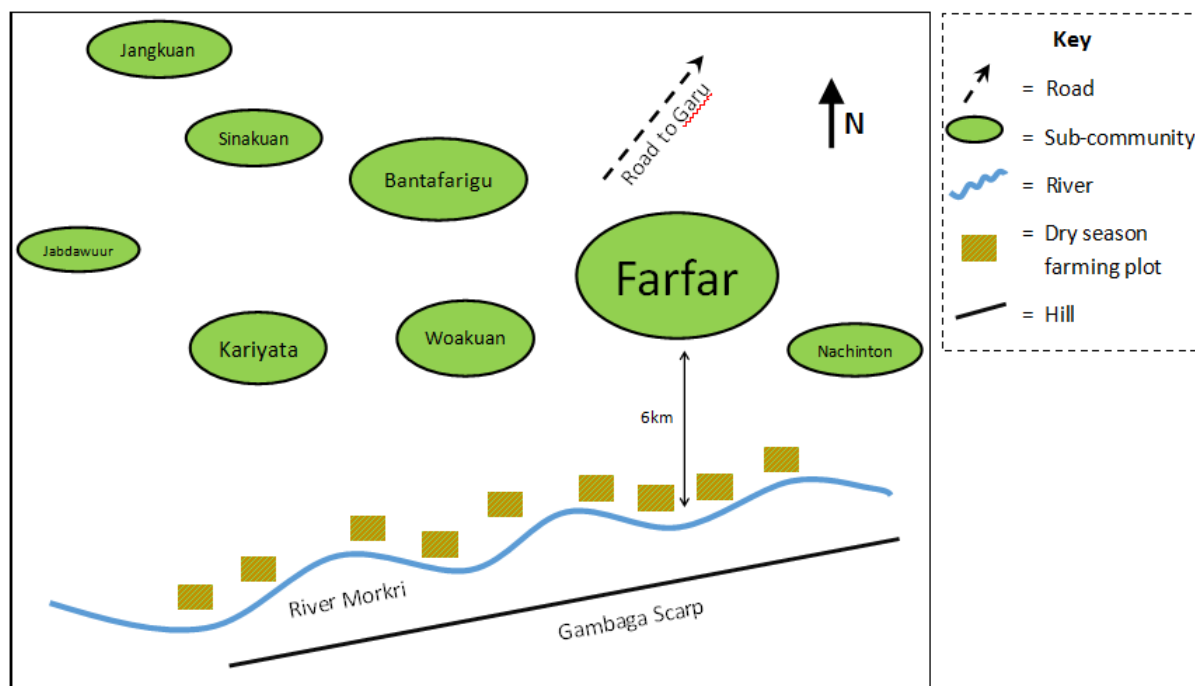
Local and national poverty and livelihood context

This research was conducted in the Farfar-Bantafarigu electoral community (herein Farfar) in the Garu-Tempane district, within the Upper East Region of Ghana. In this community the vast majority of people are of the Bimoba tribe or ethnicity. The approximate research area is highlighted with a red circle in Map 1 below.



Map 1: Satellite image of Ghana (Source: Google Earth)

Map 2 on the next page is a product of observation, using digital maps and GPS ‘pinning’, as well as informal conversations with a number of locals and shows a more granular depiction of the Farfar area being studied, including all eight sub-communities.



Map 2: Sub-community level map of Farfar

Although Map 2 is an approximation, it does include all of the key sub-communities, roughly highlighting their size in population relative to each other with Farfar the largest and Jabdawuur at the other end of the scale. Approximately 6km south from the market square in Farfar is the river locally known as River Morkri. It is along the banks of this river that those who have access to land, and the other inputs required, carry out dry season farming of rice, onions, tomatoes, chilli peppers and watermelon. The river, along with Gambaga Scarp (a long and narrow hill named after the town of Gambaga in the Northern Region) effectively acts as the border between the Upper East and the Northern Region in this area. Approximately 15km north of the Farfar market square lies the district capital of Garu.

The total population of the Farfar-Bantafarigu electoral area, according to projections from the 2000 census, is 3,498², approximately 46% of those are male and 54% female. Sub-community level populations can be seen in Figure 2. The data that informs this bar chart were collected in 2000 and projections have been made using the district office calculations to produce figures for 2015. When this data was collected some of the sub-communities were joined together. However, even without swallowing the population of Nachinton, Farfar is the largest by some distance and the only sub-community which benefits from electricity (although work is currently underway to connect

² Whilst the data for the 2010 census has been collected, community level figures have not yet been collated and distributed by the relevant authorities.

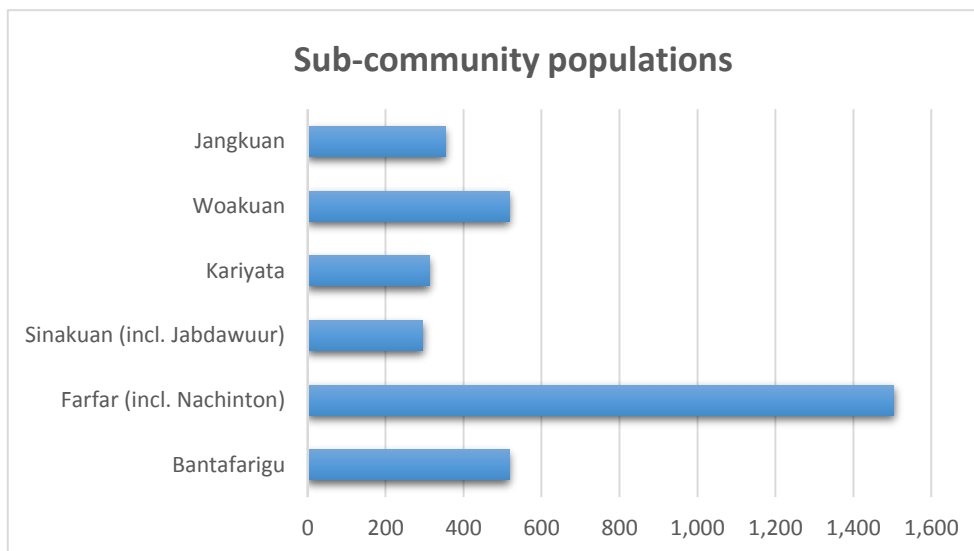


Figure 2: Sub-community populations (Garu District Assembly, 2015)

Banatafarigu to the national grid). As such, Farfar acts as the hub for the electoral area with a regular market every three days that draws people from across the district to sell their wares. Jabdawuur, which in the figures from the District Assembly has been absorbed by Sinakuan, is the furthest from Farfar and by far the smallest, comprising of just four houses.

At the national level, Ghana is characterised by vast inequalities between the northern and southern regions in terms of infrastructure, incomes, access to markets, infant mortality, access to healthcare, literacy, access to clean water for drinking and sanitation, amongst many human development indicators (Black et al., 2013; Bawakyillenuo et al., 2014; Rademacher-Schulz et al., 2014; Care, 2013). This divide in prosperity dates back to colonial times, “when northern Ghana served as a labour pool for the benefit of the economy in the south”. After independence in 1957, “the importance of labour migration for northerners to southern parts of Ghana further increased” (Rademacher-Schulz et al., 2014, pp 47 and 48). Under colonial rule, their British colonisers had no interest in investing in the north of Ghana since they wanted to ensure that people in the north had to move south for employment, often to work in southern-based gold mines. The inequalities only deepened after independence and did not improve in the economically and politically tumultuous period throughout the 1970s and 1980s (Abdulai and Hulme, 2014; GoG, 2014).

In more recent years, since democracy was re-instated in the early 1990s, Ghana’s economy has grown rapidly and has received plaudits even from Barack Obama for being a “role model for democracy” across Africa (Obama, 2009). However, the significant growth in the last decade has only served to exacerbate the inequalities since the benefits of this growth have been rooted firmly in the south (Black et al., 2013). This is despite the urgent need to bridge the north-south divide being explicitly

acknowledged by the Government of Ghana and the African Development Bank in their respective development agendas (GoG, 2014; AfDB, 2012).

Whilst all three of the northern regions suffer significantly worse human development indicators than regions further south, the Upper East is the poorest of the ten regions in Ghana where the poverty level is 70% – very high compared with the national average of 28% (Wossen and Berger, 2015). The Upper East region is also densely populated with 104 people per km², compared with the national average of one person per 75 km² (ibid.). Garu-Tempane has a poverty rate itself of 70%, and an average annual income of less than 130 Ghana Cedis (US \$50) per year, compared with the national average of 1,217 Ghana Cedis (US \$324) (Care, 2013). The Upper East, and Garu-Tempane in particular, is characterised by a very high reliance on agricultural activity (crop production and cattle rearing) as the main source of subsistence and income (Care, 2013; Wossen and Berger, 2013).

Climate change and vulnerability context

In the satellite image of Ghana in Map 1, there is a noticeable difference in the colour of the landscape as you move from the southern, coastal area, to the northern regions. The transformation from lush, green terrain in the south, to a dry, brown environment in the northern regions is gradual but demonstrates quite clearly a stark difference in climate between these two regions. Recent studies show that the temperature has been rising rapidly over the last 50 years in Ghana, particularly in the northern savannah zone (Bawakyillenuo et al., 2014). Future projections suggest that the speed of temperature rise will accelerate in this region; rising by 2.1 to 2.4°C by 2050 (ibid; World Bank, 2010). Already reaching heights of around 45°C during the dry season (November to May), it is anticipated that these soaring temperatures will increase desertification at a rate of 20,000 ha per annum in Ghana (MoFA, 2010; Assante and Amuakwa-Mensah, 2015).

Just as significant is the overall decline in annual rainfall and the increase in intra-annual rainfall variability, with communities in northern Ghana experiencing longer dry spells in the rainy season and heavy downpours during the dry season (Bawakyillenuo et al., 2014; Rademacher-Schulz et al., 2014). The Upper East Region has a very low average rainfall of 921mm which ranges from 645mm to 1250mm (MoFA, 2010). As well as projections of mean annual rainfall reducing between 1.1% and 3.1% across Ghana by just 2020, recent studies predict intra-annual rainfall patterns are likely to become increasingly erratic (Environmental Protection Agency, 2011). This aligns with local perceptions of climate risks with one farmer from the semi-arid region of northern Ghana, when interviewed highlighting that “rainfall now is unpredictable, it stops when it is needed and it rains when it is not needed” (Rademacher-Schulz et al., 2014, pp48).

Households in Farfar, as in much of the Upper East Region of Ghana, are heavily dependent on agriculture for quasi-subsistence. In fact, in the eight communities where ALP operates³, 97% of households earn their primary income from crop production (Care, 2013). This is a significant concern since these communities are also some of the most exposed to climate change. Bates et al. (2008) refer to the droughts that occur in the Western Sahel region as “among the largest climate changes anywhere”. Thus, the households living in the Upper East Region of Ghana are characterised by high exposure (due to its geography), highly sensitivity (due to reliance on agriculture) and low adaptive capacity (due to the poverty context and low institutional capacity). As a result, households in this region are extremely vulnerable to climate change and the need to enhance adaptive capacities is substantial.

A long history of mobility

Since colonial times, seasonal migration has been an important mobility pattern in Ghana and across all of West Africa (Tacoli, 2009; Black et al., 2011; Rademacher-Schulz et al., 2014). As previously discussed, this pattern has been reinforced by increased inequalities in the country and the changing climate. Thus, diversifying household incomes to include sources of financial capital in different regions, coupled with the benefits of remittances and having less people to feed at home, presents a fairly simple but highly effective adaptation strategy. Typically, temporary migration will occur in the dry season, when there are traditionally little or no opportunities for income, for the migrants to return in order to prepare the land for the rainy season. Whilst outward seasonal migration patterns from northern Ghana are not totally exclusive to the dry season, this has been the general trend (Rademacher-Schulz et al., 2014). This is suggested to be the case for more positive adaptation strategies, while erosive coping strategies involving migration are said to be more closely associated with rainy season migration (Rademacher-Schulz et al., 2014; Warner and Afifi, 2014).

However, mobility is highly politicised in Ghana and development programmes run by the government or NGOs are often done so with the aim to prevent north-south migration and to keep people in the north. A project run by World Vision in the Garu-Tempene District of northern Ghana involving the use of Village Savings and Loans Associations (VSLA) has recently been hailed for preventing the need to migrate (Akapule, 2015). Likewise, a request by the Assemblyman in Farfar presented to the District Assembly for a dam in the community to extend the amount of dry season farmland was framed around reducing migration to the south of the country (see Appendix 3).

³ Farfar is one of these eight communities, all of which are located in the three northern regions of Ghana

The initiation of dry season farming in the climate vulnerable community of Farfar in the Garu-Tempane district, and in particular the introduction of watermelon, has provided a new source of income during the dry months and has begun to change these long standing patterns of seasonal migration. This is partly enabled and supported by the Adaptation Learning Programme for Africa (ALP), a climate change adaptation project run by CARE International with local partners the Presbyterian Agricultural Station – Garu (PAS-G). The ALP intervention has helped to start up VSLAs to enable households to purchase the necessary inputs for dry season farming; improved access to markets for farming inputs and certified seeds; provided water pumps for dry season farming; delivered advocacy courses; and begun to combine local weather knowledge with scientific weather data to enable local farmers to better predict weather patterns in the coming season. The onset of dry season farming means that members of some households no longer need to travel down south during the dry months since they can earn a living at home during this previously stagnant period. Indeed, dry season farming has proved highly profitable for some members of the communities, in particular those who are farming watermelon. The introduction of watermelon approximately seven to eight years ago created a rush for a very short supply of dry season farmland. Access to which, as well as the other farming inputs necessary for the practice, is not available to everyone.

Conclusion

In summary, it is clear the Garu-Tempane district in the Upper East Region of Ghana suffers from high rates of poverty and from a history of political and socio-economic marginalisation. When you combine this with a location that is highly exposed to climate risks, and a population reliant on the highly climate susceptible agriculture sector for quasi-subsistence, it is clear that this is a population extremely vulnerable to climate change and increased climate variability. However, community-based adaptation interventions that enable dry season farming, providing a previously unavailable source of income during the dryer months, have begun to change patterns of seasonal migration – an autonomous adaptation strategy that is thought to be highly effective. Therefore, it seems unclear as to what the net impact might be on household adaptive capacities. In addition, if those that are still migrating do so because of inaccessibility of land, what is the comparable impact on their adaptive capacities? These are just a couple of the paths that are explored in this research. The following chapter details the research objectives and questions, and provides further detail on the central themes that will be explored.

4. Research objectives and questions

The first objective of this research is to explore the changes that have occurred in patterns of seasonal migration in the Farfar-Bantafarigu electoral area (herein Farfar) of the Garu-Tempene district, in the Upper East Region of Ghana. The second objective is to uncover the impact that these changes are having on households and their capacity to adapt to climate change. On this basis, the following is the primary question, this research will answer:

How do changes in patterns of seasonal migration affect household capacities to adapt to climate change in rural northern Ghana?

In order to answer this question using the LAC framework (see 2.2) the following sub-questions have been devised. Please note that all of these sub-questions relate specifically to the Farfar electoral area – the direct beneficiary area of the ALP climate change adaptation intervention discussed above and the chosen case study for this research.

- 1) How have patterns of seasonal migration changed in the last ten years in Farfar?
- 2) Why have these changes in patterns of seasonal migration occurred?
- 3) How do these changes in patterns of seasonal migration vary across societal groups?
- 4) How does seasonal migration affect the household asset base in rural northern Ghana?
- 5) How does seasonal migration affect household access to knowledge and information in rural northern Ghana?
- 6) How does seasonal migration affect household innovation in rural northern Ghana?
- 7) How does seasonal migration affect household flexible and forward thinking decision making in rural northern Ghana?
- 8) How does seasonal migration affect local institutions and entitlements in rural northern Ghana?

The aim of sub-question 1 is to discover exactly how patterns of seasonal migration have changed and to leave this question open to explore the full dynamics of these changes rather than one element. The ten year time frame was used because the key change in the area that may have stimulated changes in seasonal migration is the rush for dry season farmland. Whilst dry season farming has been carried out on a small scale for approximately twenty to twenty-five years, the introduction of watermelon around seven to eight years ago created this rush. As such, capturing the levels of seasonal migration ten years ago and today will show how levels have changed before and after the introduction of the profitable watermelon.

Sub-question 2 has been intentionally left open to avoid assuming there is one primary reason and capture all the key driving forces influencing seasonal migration. Of course, if seasonal migration patterns are identical to how they were ten years ago, this question is redundant. However, due to the many different features of seasonal migration, including the time of year people leave and return, and the many different reasons that drive people to start and stop seasonally migrating, it is anticipated that some change will have occurred and that this sub-question will remain relevant.

The first two sub-questions are related to sub-question 3 where I uncover how these changing patterns differ across different individuals, households and groups. This includes (but is not limited to) differences in gender, age, proximity to intervention, access to land and place of origin. Acknowledging differences between and within different societal groups will also be necessary and may reveal some interesting insights. Ultimately, answering this question will reveal for whom these changes are most significant, why, and what the implications are of this to different groups' climate vulnerability and adaptive capacity.

Sub-questions 4 to 8 refer specifically to the characteristics of adaptive capacity discussed in the ACCRA LAC framework. All five of these elements were discussed in depth in the theoretical framework of this thesis (see 2.2).

It is important to note that room was explicitly left within the research questions, to allow the most important and significant changes in migration patterns to come to the fore, as well as the most significant impacts of these changes. As the creators of the LAC model assert, it is not necessary to affect every element of every component in the model, since strengthening one of the five components enhances adaptive capacity in isolation, but is also likely to have a ripple effect as it influences other elements in the framework (ACCRA, 2012). On the same basis, it was not necessary to measure, *per se*, each and every component of the LAC model in equal terms, since not all of them may be heavily influenced by the changing patterns of seasonal migration. Nonetheless, all must be included within the research questions to ensure the research is comprehensive and rigorous, and to provide the complete lens through which this research can analyse and understand the positive and negative impacts of changes in patterns of seasonal migration on adaptive capacity.

The household is the primary unit of analysis in this research, largely due to the fact that decisions to migrate are made at household level. Indeed, it was found that individuals would usually migrate only if there were enough household members remaining at home to take care of dependents and other household responsibilities. Furthermore, farming activities are also organised at the household level for which most able-bodied members will be involved at some point during farming seasons.

The term seasonal migration, in this research, refers to cyclical migratory patterns framed around a given season. The primary 'seasons' during which people typically migrate were found to be the dry season, rainy season and school holidays. The term seasonal migration was used here because the three aforementioned seasons are so important to local lives since everyone in the researched community farms and therefore lives are framed around the dry and rainy seasons. Travelling during the school holidays has also become more important since more people are attending school in the community.

The difference between seasonal and circular migration is not viewed as important in terms of the impact on adaptive capacity. Although, it is possible that the length of stay may change the depth and strength of some of the impacts. The aim of this research is to have implications on how we view all forms of mobility and the impacts on adaptive capacity. As such, attempting to distinguish between overlapping categories of migration, which in reality are extremely fluid, dynamic and very difficult to categorise and distinguish between is unnecessary.

5. Methodology

This research was conducted via field work over a 15 week period from the start of February until the middle of May 2015. The research site and case study is the Farfar community in the Upper East Region of northern Ghana. This community, based in the Garu-Tempene district, is composed of eight different sub-communities (as shown in the Map 2, page 13). The field work incorporated time being spent in all eight sub-communities whilst living for the whole period in the Farfar sub-community.

This chapter highlights the key research methods that were used to answer the aforementioned research questions. This is followed by an outline of the limits, challenges and risks associated with this research.

5.1 Research methods

This research is predominantly qualitative. As such, the primary research methods used to answer the research questions were unstructured and semi-structured interviews, informal conversations, observations, the writing of a field journal, as well as a survey and the use of some secondary data.

Due to the complex nature of migration patterns in the area it became clear that a full understanding of how mobility has changed would not be gathered from interviews alone. As such, a household seasonal migration survey was produced which reached 111 households with a total population of 1,458. The sample frame and total population of the research area is 3,498 from a total of 309 households (Garu District Assembly, 2015). Therefore this research covers 42% of the total population and 36% of households allowing generalisations to be made to the wider population with more confidence.

Surveys were carried out face-to-face by four research assistants, each of whom can read, write and speak English as well as the local *Moar* language (see Appendix 1 for a copy of this survey). The respondents were stratified across the eight sub-communities aiming to capture a roughly representative number of surveys for each of the sub-communities. Respondents were also stratified in terms of gender, age, intra-sub-community location and English speaking competency to avoid bias⁴.

The primary goal of this survey was to understand how many members of a household seasonally migrate, their characteristics (age, gender, location), where they travel to, what time of year they go and what activities they do when they migrate; both now and ten years ago. As such, the results from

⁴ Due to the unfamiliarity with the local area and the fact that the research area covers a vast expanse of savannah scattered with residents' homes, it was seemingly impossible within the time frame to produce a statistically perfect random sample.

this survey provide the primary source of data to answer sub-questions one, two and three. The data this survey captured also enabled interesting comparisons to be made to the qualitative data produced through the interviews and informal conversations and as a result, enriched and improved the quality and validity of the findings. Most importantly, the use of the survey ensures the research and its findings do not rely solely on perceptions and anecdotes for analysing changing migration patterns and enables the triangulation of the data to increase the reliability and ultimately the quality of the analysis and the conclusions that can be drawn from this research.

Semi-structured and unstructured interviews were necessary to gain a more in depth understanding of the different dynamics affecting decisions to migrate, the enabling and constraining factors, the perceptions of local people on migration and its impacts, as well as the exclusions and inclusions in adaptive activities at the local level. Due to the breadth of different areas covered in the LAC framework it was necessary to write a comprehensive list of possible interview questions to cover all aspects. However, no interviewee is the same and each interview took its own path. As a result, not all of the questions were asked all of the time. Sometimes new ones were asked to explore a certain topic highlighted by the interviewee and sometimes respondents were invited to talk about a certain subject and only given prompts to guide them in a certain direction. In this way, most of the interviews demonstrated elements of both semi-structured and unstructured interviews.

Respondents were selected for semi and unstructured interviews and informal conversations largely via opportunistic and snowball methods since almost everyone present in the local area is relevant to the research. Interviews with relevant members of the local NGO PAS-G and with CARE International (the key organisations involved with the ALP intervention) were carried out, as well as those with other people in the area (e.g. school headmasters and the nurse), but the majority of participants were individuals from community itself. The aim was to stratify the sample broadly across gender, age, location, social status, proximity to the intervention and membership to local civic, public and private groups; as well as the breadth of their migratory experiences to ensure a diverse range of respondents. A total of 30 interviews were carried out as part of the research process.

Observations were performed at key events, in the farming areas and in community on a regular basis to understand the social and power relations in the local area, possible inclusions and exclusions, and to analyse the public and civic institutions and forums in the area. Since a large part of the research involved “just being there” (Scheyven, 2014), a field journal was kept to write notes based on daily experiences and conversations for reflection, analysis and comparison. Secondary data was primarily used to capture population statistics and the sample frame within the research area.

Farfar was selected as the case study for this research for the following reasons. Firstly, as a direct beneficiary area of a community base adaptation (CBA) intervention it is anticipated that there may be relationships between activities initiated by the implementing NGOs and changing patterns of mobility, and in turn adaptive capacity. These relationships may be unknown, but nonetheless important, thus it is hoped that the findings and conclusions of this research will be informative, not just to the intervening NGOs in the case of Farfar, but also to others planning climate change adaptation programmes. Secondly, of the eight communities where ALP is active in Ghana, in Farfar more contacts had already been established. This enabled practical matters such as accommodation and translators to be completed more quickly and efficiently than if a different community was chosen.

The analysis of the qualitative data produced from this research began whilst in the field to allow theories and concepts to develop from the data. In this sense the analysis will primarily be undertaken using a grounded theory method (Flick, 2013). The external conceptual framework provided by the ACCRA LAC model ensures there is structure, legitimacy, logic and consistency to the conceptual model and the research process. However, the flexibility to learn new theories and concepts from relationships observed in the data collected was retained.

5.2 Limits, challenges and risks

There were a number of key challenges, limitations and risks encountered during this research. The difference in cultural background between the researcher and the researched community was substantial, which presented a number of challenges. Ensuring that questions asked were culturally appropriate; both from an ethical standpoint and to ensure they were understood correctly, required pre and post testing of survey and interview questions. It also necessitated taking some time upon arrival in the local area, before conducting the research, to better understand the local norms and culture. This has been reflected by having to re-word and re-think the interview questions a number of times (despite carrying out pre-testing).

The difference in cultural background also caused certain status challenges to address. Entering the community as a white European you are afforded a higher social status than one may desire, but more importantly, one that is potentially detrimental to the accuracy of the data you receive. To combat this, I refer back to the time before conducting the research to 'settle' and also to the importance of a humble attitude upon arrival. This included being as independent as possible and trying to 'blend in' to some extent with the community by engaging in normal daily activities. Of course in reality this would take a very long time to do and was not necessarily going to be completely feasible within this relatively short period.

The language barrier was resolved by hiring translators who spoke Moar, the local language, as well as English. Only a small number of respondents spoke English and excluding those that did not would provide significant bias to the sample. However, even with the use of a translator there were potential risks and biases to be aware of. For example, a translator, by definition somebody local who speaks English and Moar, is likely to possess a high level of social status in the local area which may affect responses and the openness of respondents.

The aid of four research assistants to undertake the surveys was sought to achieve the joint goals of speed (since the survey was conceived half-way through the research period) and breadth of coverage across the sub-communities, but this also carried additional risks. Most notably, ensuring that the understanding and the translation of each question was identical across the four assistants. To mitigate this risk survey guidelines were created (see Appendix 1) and three group meetings were held with all four research assistants to standardise the translation, address any challenges they faced and to discuss anomalies in the data.

The limitations of this research also included the lack of weighting of different elements of the conceptual model and the fact that they are relatively normative concepts. Indeed, the operationalisation of these complex concepts to simple questions was crucial to the validity of the research. To try and overcome researcher bias on these concepts, the researcher aimed to maintain an objective view and to use tangible demonstrations of these elements in the findings. Assuming a causal relationship between variables was another potential risk which includes circular reasoning in that a change in adaptive capacity may influence seasonal migration patterns as well as vice versa. Always being aware of possible intervening factors and variables and delving deeper when conducting interviews to explore dynamics in full helped to reduce the occurrence of assuming causal links where there are none. In the measurement of seasonal migration, the survey was reliant on the memories of respondents. This clearly has the potential to produce inaccurate results; however there was no other way of successfully capturing this data. To diminish the chances of inaccurate responses, if more than one person was present in the household during the time of the interview (which was often the case), they were encouraged to confer to ensure they gave an accurate representation of seasonal migration patterns ten years ago and today.

Finally, maintaining ethical relationships throughout the field work and setting expectations accurately helped to improve the overall impact this research had on its participants.

6. Shifting patterns of seasonal migration

To analyse how changing patterns of seasonal migration have affected adaptive capacity in Farfar, first we must establish how seasonal migration has changed. This chapter presents the key research findings which answer the first three sub-questions discussed in 2.2. It begins with an outline of the basic characteristics and the main shifts in patterns of seasonal migration in Farfar in the last ten years, before offering the central reasons for these changes, and concludes by showing how they vary across societal groups. All graphs and charts presented in this chapter are based on data collected from the household surveys unless otherwise stated.

6.1 Basic characteristics and shifts in seasonal migration in Farfar

As discussed earlier in this thesis, seasonal migration is such a long practiced strategy for people to search for income and diversify livelihoods that it has become an institution in rural northern Ghana. Farfar is no exception. At least one person seasonally migrated at some point over the last 10 years in 96% in the 111 households surveyed. The large coaches that rather impressively make the trip across the uneven dusty road to Farfar every three days, and that charge 44 cedis (11 Euros) to take people on the day long journey to Kumasi (the second largest city in Ghana), are testament to the quantity and frequency of those traveling to the south of the country. Figure 3 shows that half of the seasonal migrants surveyed work on cocoa farms, 41% in the (often illegal) gold mining sector and 22% labour on other farms including maize, millet, rice, plantain, cassava and cowpea.⁵

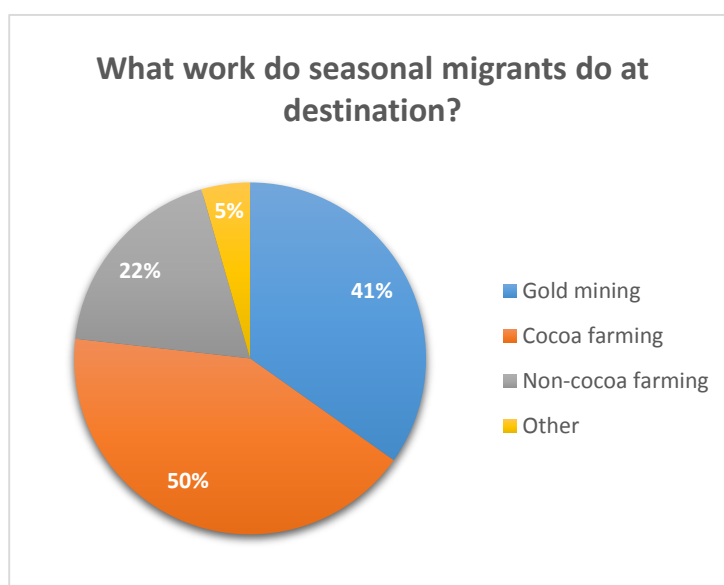
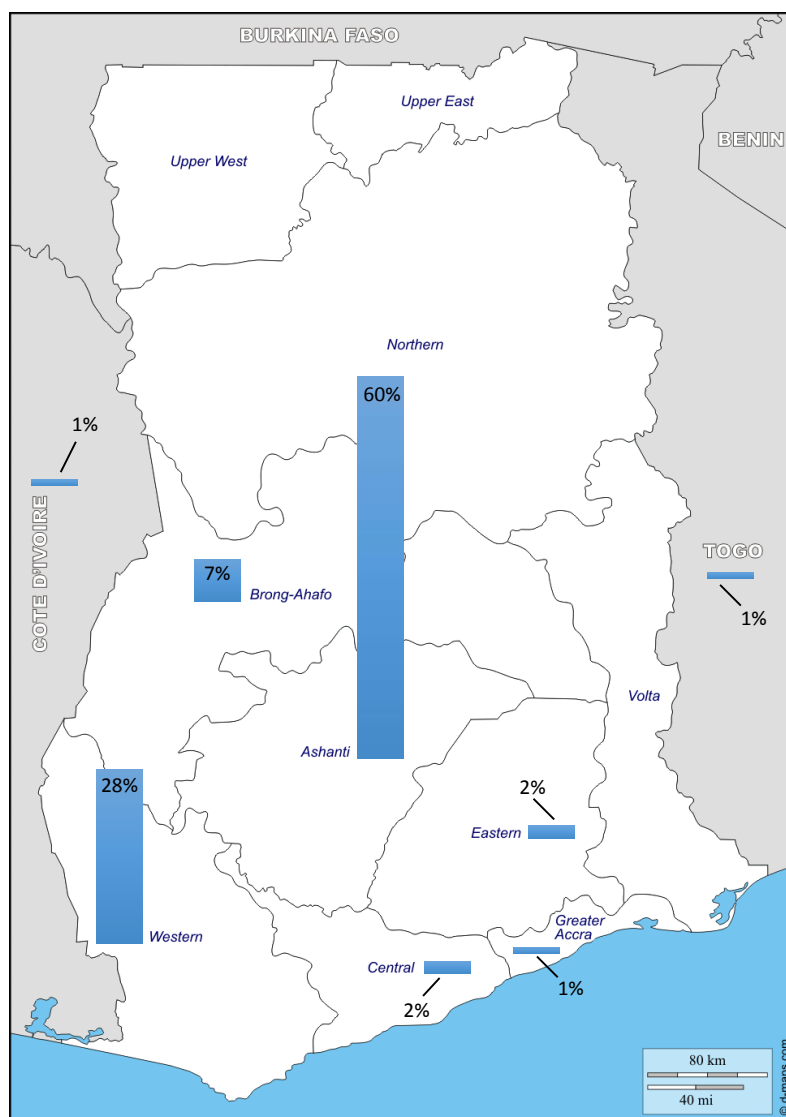


Figure 3: Pie chart showing the work seasonal migrants do at destination

⁵ Please note: one person in a household may do more than one job and travel to more than one place. Also, more than one person from a household might migrate. As such, households may offer more than one answer to these questions and therefore the aggregate per cent of household answers will be greater than one hundred in Figure 3 and Map 3.

Map 3 shows the most popular destinations for seasonal migrants from Farfar. The majority go to the Ashanti region of Ghana (60%), with the Western (28%) and Brong Ahafo (7%) regions the next most popular destinations⁶.



Map 3: Destination regions for seasonal migrants from Farfar

With a very small minority of households not seasonally migrating in the last ten years, it is clear that seasonal migration is still highly prevalent in Farfar, but how has this changed?

Figure 4 shows that, in the 111 households surveyed, the number of seasonal migrants in Farfar has reduced from 286 to 191 in the last 10 years⁷. This represents a fall of 33% in the number of people seasonally migrating.

⁶ The research found that international migration occurred only to neighbouring Togo and Cote D'Ivoire and, given the free movement of labour within ECOWAS, and that tribal languages span both sides of borders, national borders are largely meaningless. The poverty context in the Farfar community doesn't typically allow opportunities for migration further afield.

⁷ These results are the product of answers to questions 9 and 14 on the survey (see appendix) which ask how many people in the household travel on a seasonal basis now and how many travelled ten years ago.

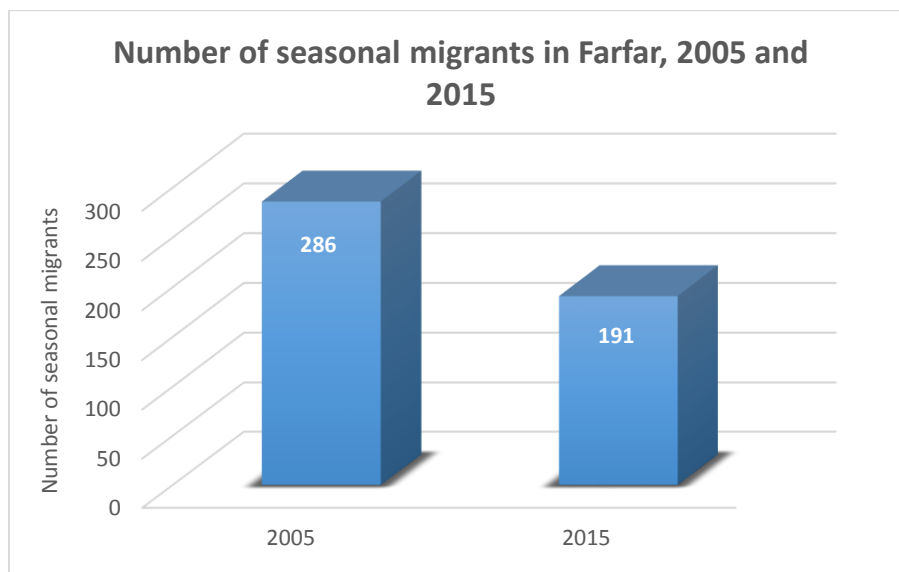


Figure 4: Number of seasonal migrants in Farfar, 2005 and 2015

This decline in the number of seasonal migrants becomes even more significant when viewing these changes at the household level. The pie chart in Figure 5 shows that seasonal migration has reduced in more than half of the households surveyed (58%) between 2005 and 2015. However, within these households only 14% completely stopped migrating, whilst the remaining 43% still had at least one household member seasonally migrating in 2015.

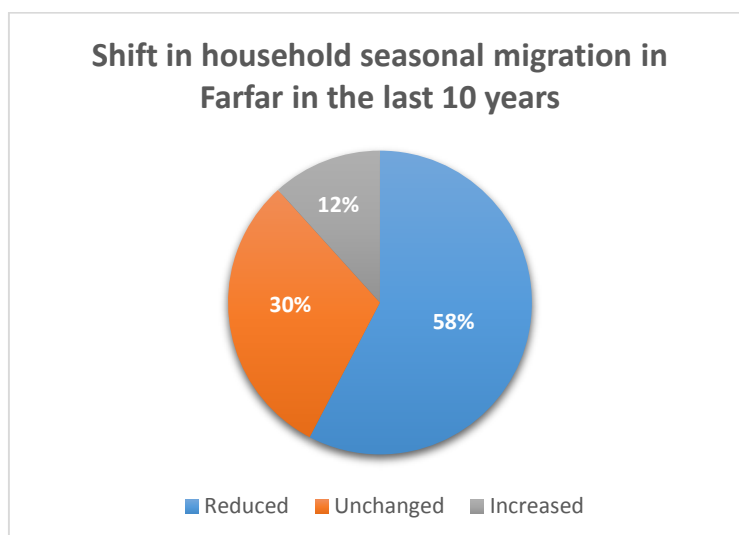


Figure 5: Shift in household seasonal migration in Farfar in the last 10 years

Delving deeper into the data collected from the household seasonal migration survey we can see how these changes manifest themselves in the different times of year that people migrate. As discussed earlier in this thesis, categorising mobility was more problematic than expected simply because migration is extremely dynamic. Indeed, one man interviewed from Jabdawuur suggested exactly that;

“I think my travelling was very dynamic. I could travel for the whole year and sometimes I would travel during the dry season then when it is time for the rainy season I come back to farm but it is not always fixed. Mostly I used to come home to farm [in the rainy season] but sometimes I would go and spend one year over there and come back”.

This pattern of sometimes travelling seasonally and occasionally migrating for longer is quite common, and, is often reliant on the number of physically able individuals and the number of dependents in the household. However, since all of those spoken to in Farfar during this research farm and are reliant on agriculture for subsistence or quasi-subsistence, migratory patterns are often defined by the time of year, and how this time of year relates to their agricultural practices. Typically, this is represented by the dry and the rainy season.

Dry season migration occurs after the rainy season harvest and before the land needs to be prepared for the coming rainy season (December to April) - a period where traditionally there is little or no work to do in the local area as highlighted by Adams from Farfar;

“In the dry season, you know, this place there is no work. If it gets to the rainy season you can support yourself in the farming. So, in the dry season we go down south to see if we can get money for the raining season.”

Rainy season migration occurs after planting for the rainy season farming and before the harvest (approximately June/July to October). The two are however not mutually exclusive and some travel in both the rainy and dry season in the same year. A third ‘season’ that was found to be important in relation to seasonal migration patterns was the school holidays. It is typical for students to travel during holiday periods (primarily July and August, but also Christmas) in search of money to pay for school fees, uniforms, books and other learning materials.

Figure 6 shows that while seasonal migration has reduced in all three seasons in the surveyed households, the decline in the number of dry season migrants is more pronounced; representing a 36% fall in the number of dry season migrants while rainy season migration reduced by just 11%. Contrary to many opinions given by locals in Farfar, the survey results show that the number of seasonal migrants in the school holidays has also reduced by 32%.

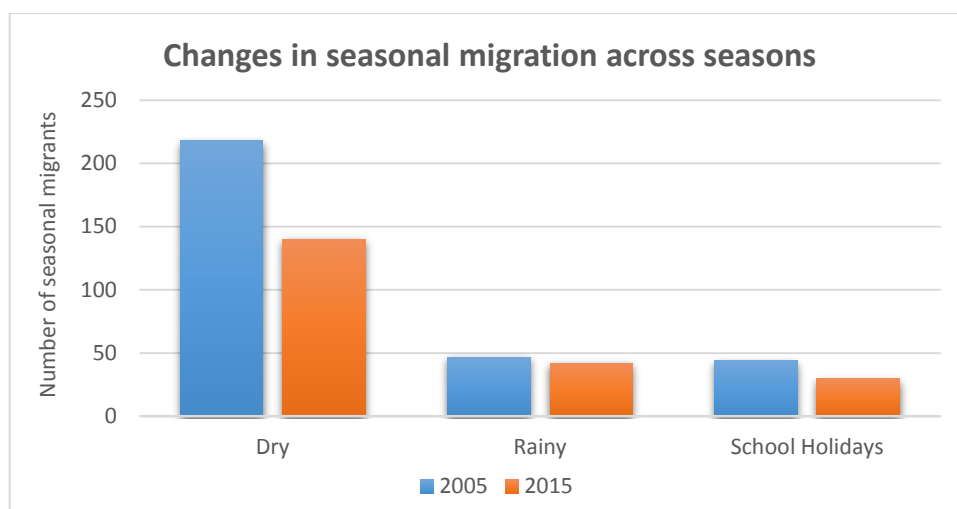


Figure 6: Changes in number of seasonal migrants across seasons

According to the survey results, the dry season remains the primary season during which people in Farfar migrate although this has diminished slightly. The proportion of seasonal migrants that travel in the dry season has reduced from 71% to 66%, while rainy season migration has become slightly more predominant, now accounting for 20% of seasonal migration, up from 15% in 2005 (for graph of these figures, see Appendix 2.1). The proportion of seasonal migrants traveling in school holidays has remained constant at 14%. Once again, it is important to observe the data at the household level, not just because decisions to migrate are mostly made at household level, but also because large changes in the number of seasonal migrants in a small number of households can have a significant impact on the figures.

The survey results have shown that, at the individual level seasonal migration reduced the most in the dry season. When we analyse household seasonal migration patterns this trend seems to intensify. Figure 7 shows three pie charts that illustrate the proportion of households in which migration has increased, reduced and remained unchanged in each season over the last ten years.

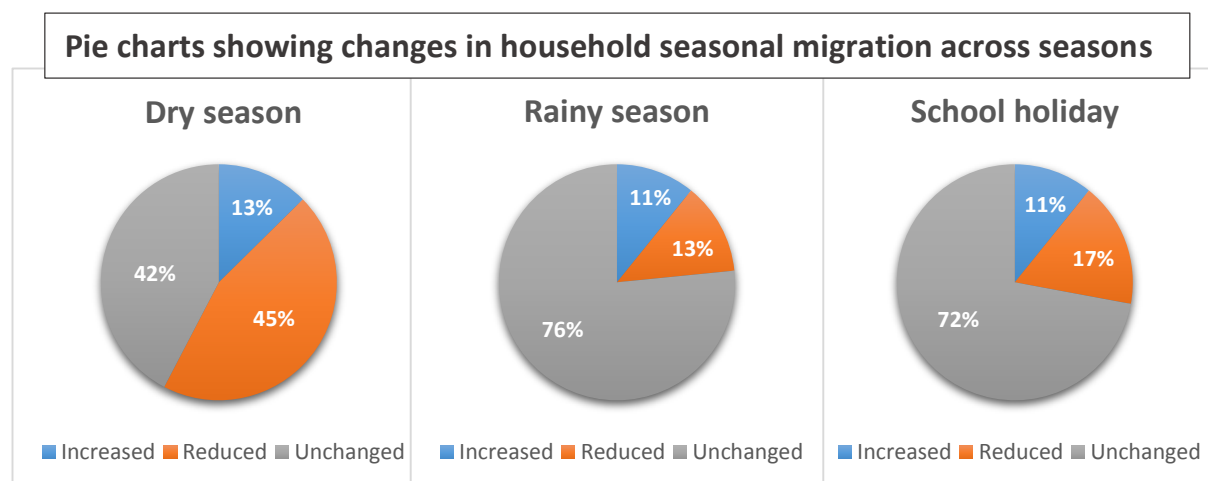


Figure 7: Three pie charts showing changes in household seasonal migration across seasons

As illustrated in Figure 7, dry season migration has reduced in 45% of households surveyed, while rainy season and school holiday migration has reduced in 13% and 17% respectively. The smallest changes in seasonal migration at the household level were found in the rainy season since, in more than three quarters of households, there was no change and, those households that have seen a rise or fall in seasonal migration during this period are almost equal in number.

This downward shift in seasonal migration, particularly in the dry season, is corroborated by the stories given in interviews. Jacob, a local farmer from Bantafarigu who started dry season farming approximately five years ago suggested that;

“Now [the dry season], you could find that all the youth would have been in the southern sector, down south. Doing some little galamsey, cocoa, labour jobs, many other things... but not now.”

We can deduce from the figures presented here that seasonal migration has reduced in the majority of households in Farfar, and that the largest reduction is in dry season migration, but *why* have these changes occurred?

6.2 Why have these changes occurred?

There are a plethora of reasons and driving forces that influence a household’s decision to seasonally migrate and to stop migrating. Table 1 demonstrates how a multitude of different factors can influence if someone decides to travel while Table 2 shows many of the reasons that explain why people stop seasonally migrating.

Why migrate?
Lack of income opportunities at origin
Lack of water for farming in dry season
To maintain harvest to sell or eat later
To see family and friends
To see new places, new ways of living
To pay for school fees & other learning materials
To pay for farming inputs
To support family and dependents (at origin and destination)
To receive and encourage remittances (e.g. financial, clothes, farm inputs etc)

Table 1: Drivers to migrate

Why stop migrating?
Become weak, too old or injured
New income opportunities arisen at home (dry season farming or other e.g. nurse)
Stay to build or repair the house
To look after children, family or elderly
Family or friend’s funeral(s)
Lack of money to pay for bus fare
Needed at home to work (farming or other)
Finished school so do not need the money from migrating to pay for fees any longer

Table 2: Drivers to stop migrating

All of the reasons to migrate and stop migrating in tables 1 and 2 were given during interviews and informal conversations during this research and, despite these lists not being exhaustive, they demonstrate just how fluid and dynamic seasonal migration can be at the individual household level. There is an abundance of small, very local stimuli that can affect household seasonal migration. On this basis, linking the aforementioned aggregate changes in patterns of seasonal migration to any one particular driver becomes difficult. However, asking why these changes occurred did produce some interesting patterns; as shown in Figure 8.

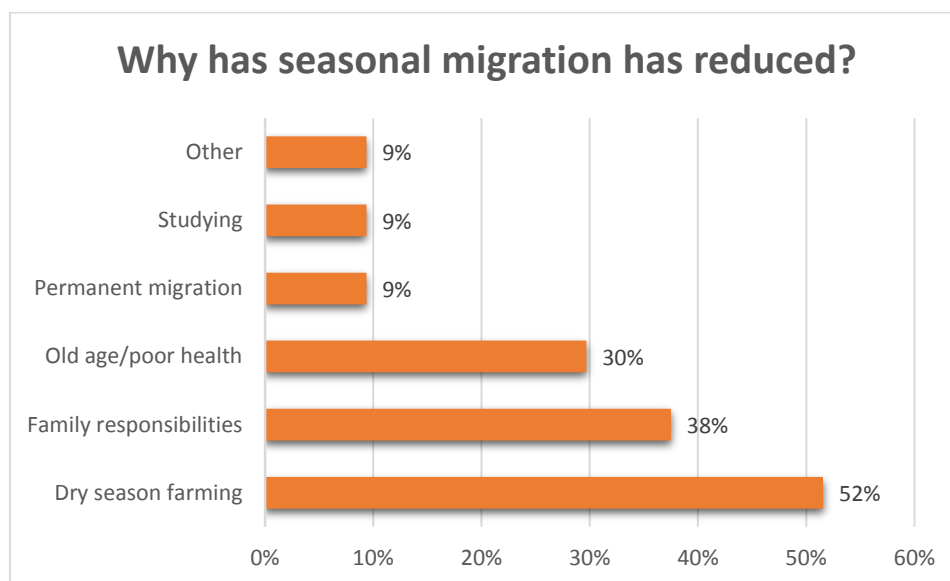


Figure 8: Why has seasonal migration reduced?

More than half of households gave dry season farming as the reason behind this drop in seasonal migration, while 38% mentioned family responsibilities and 30% said the reduction was caused by old age or poor health in the household. Interestingly, both finishing and starting studying can lead to a cease in seasonal migration. Firstly, finishing studying means students don't need the income from migrating during the holidays to pay for school fees anymore, so they stop travelling. Secondly, some start going to school during the rainy and dry season instead of migrating during these periods.

No evidence was found in this research to suggest that family responsibilities should have significantly increased in the area in the last ten years, although it is possible there are more dependents due to improvements in life expectancy and infant mortality rates in the region. Although fertility rates are high - one man even boasting of having 34 children - population growth rates are projected at approximately 1% (Garu District Assembly, 2015). Like old age and poor health, family responsibilities is primarily a reason why an *individual*, rather than a *household*, would cease to migrate. An average household size of 13 found in this research would suggest that within most households there are other household members who could begin migrating if a previous migrant has to take on more family

responsibilities at home or if they are no longer able to travel due to old age and poor health. Although, rising enrolment rates at the local schools may imply that attending school could prevent other members of the household from migrating⁸.

On this basis and with more than half of households citing dry season farming as a key driver behind this decline in mobility, and this phenomenon undoubtedly being a key change in the area in recent years, dry season farming appears to be the primary reason why less people are seasonally migrating in Farfar. Indeed, not just the answers to the surveys but the stories from interviews paint a similar picture. Jacob, quoted earlier declaring that seasonal migration had reduced in Farfar, especially in the dry season, agrees with this reasoning;

“It is because of the watermelon. People are not travelling up and down anymore. Apart from those who don’t have access to land for dry season farming. Most of them still go down south, but because of the watermelon business, the number has reduced drastically, especially in the dry season.”

When people in the community talk in general about dry season farming and the rush for dry season farmland, it is important to recognise that this has primarily been created by the introduction of watermelon. Dry season farming has actually been practiced in Farfar for around twenty to twenty-five years at a small scale. The realisation of the profitability of watermelon farming seems to be the key driver behind the decline in seasonal migration.

Whilst Jacob’s story is compelling, delving into the data produced from the survey, we can assess if there is a difference in the shifts in patterns of seasonal migration amongst those households that do and those that do not have access to dry season farmland. The two pie charts below show the changes in household seasonal migration from 2005 to 2015 in households with access to dry season farmland (Figure 9) and in those without (Figure 10).

⁸ No figures were available from the local schools to corroborate this but current enrolment rates are high with 746 students enrolled at the Primary and 147 at the Junior High School for 2015. However, the general consensus amongst head teachers, other teachers and parents is that enrolment in local schools has increased.

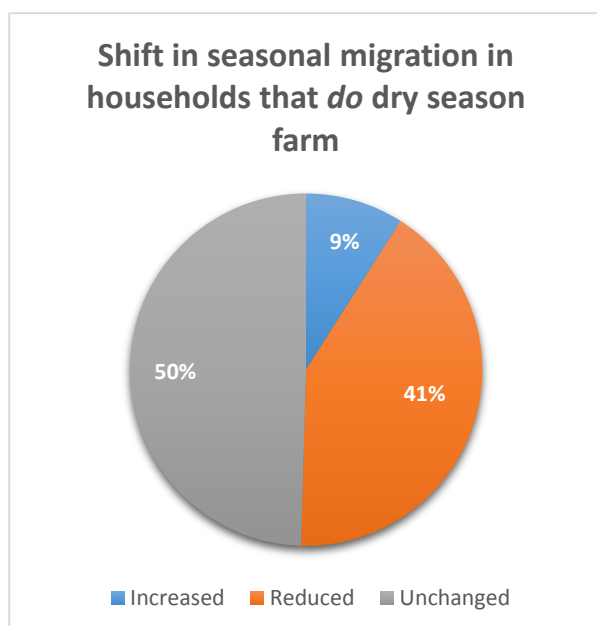


Figure 9: Shift in seasonal migration in households that dry season farm

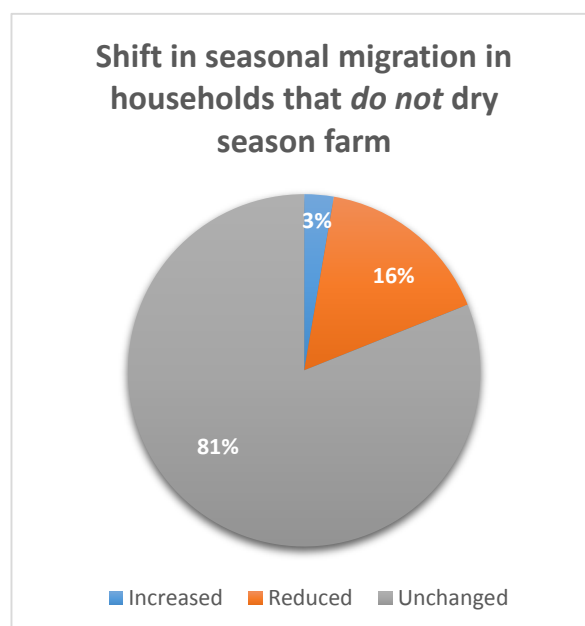


Figure 10: Shift in seasonal migration in households that do not dry season farm

With seasonal migration falling in 41% of households that do dry season farm, and in 16% of households that do not dry season farm, figures 9 and 10 illustrate that the decline in seasonal migration is much more prevalent in households engaged in dry season farming. In fact, according to the survey results, households that dry season farm are more than twice as likely to have stopped or reduced seasonally migrating in the last ten years than those who do not dry season farm. Interestingly, seasonal migration has also increased in more households that do dry season farm than those that do not. This could be explained by an increase in demand for inputs as John, a nurse and farmer from the sub-community of Farfar explained;

“Even if there is dry season farming and you are even two, three in the house, one can even travel. If you travel it helps to pay for the chemicals. Before you can farm large, you have to use weedicides to help you”.

Although access to dry season farmland appears to be a significant driver of changes in seasonal migration, Figure 10 highlights that there is still a decline in 16% of households without access. Therefore, it must be acknowledged that there are other factors that also contribute towards the shift in patterns of seasonal migration in Farfar.

One further result from the research which strengthens the link between dry season farming and seasonal migration is in the answers given when respondents were asked the following question:

If you could do dry season farming (or more dry season farming, for those that already do), would your household members continue to migrate?

There was an almost unanimous consensus in responses with 90% of households answering “no” and just 2% answering “yes”⁹. This demonstrates the great extent to which people in Farfar value dry season farming over seasonal migration.

6.3 Changes in seasonal migration across different societal groups

So far in this chapter we have identified that seasonal migration has reduced, that this decline is most prominent in the dry season, and that, amongst the variety of (often highly localised) reasons for this shift, the central driver is the initiation of more dry season farming in the area (primarily watermelon). However, it is also important for this research to capture how changes in patterns of seasonal migration vary across different societal groups because of the implications this may have on the different groups’ capacities to adapt to climate change. This section presents the differences in changes of seasonal migration across gender, age group and sub-community. In doing so, this subsection answers sub-question 3 outlined on page 18.

Gender

Whilst the majority of respondents in this research suggested that aggregate seasonal migration had reduced in Farfar, many thought that female seasonal migration had increased. Figure 11 shows that, within the households captured in the survey, the number of both male and female seasonal migrants in Farfar has reduced from 2005 to 2015. Although, the decline in male seasonal migrants is undoubtedly sharper; reducing by 34% compared to 25% in females.

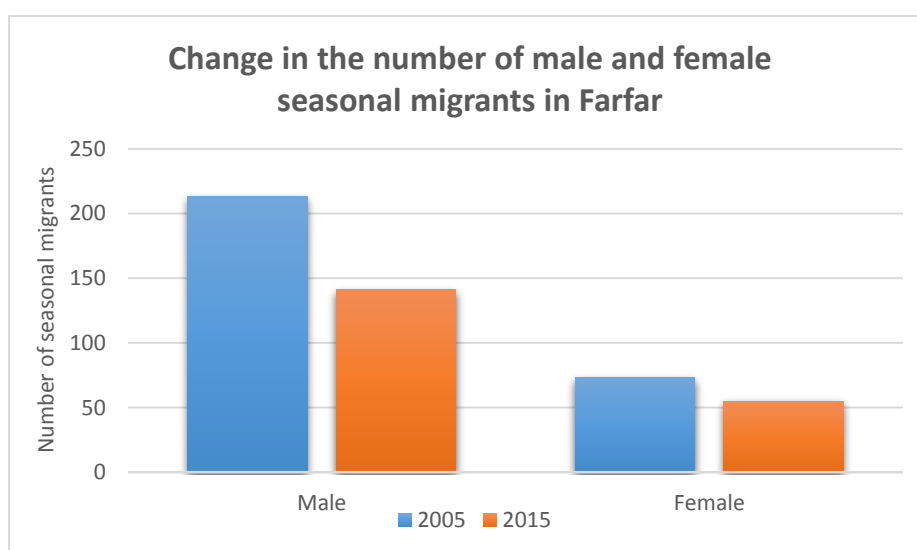


Figure 11: Changes in seasonal migration across gender

⁹ For the remaining 8% of households, the question was not applicable since they did not migrate initially.

This indicates that, although seasonal migration amongst both men and women has fallen, the proportion of seasonal migrants that are female has increased. Albeit, due to the small total number of women that travel compared to men, the change is almost negligible since in 2005, women accounted for 26% of total seasonal migrants, while today that has increased only to 27%.

Analysing the data at the household level (see Figure 12 and 13) shows more interesting variations in these shifting seasonal migration patterns across gender. Comparing levels in 2005 with those in 2015, male seasonal migration has reduced in 46% of the households surveyed, while the proportion of households where female seasonal migration has reduced is 24%.

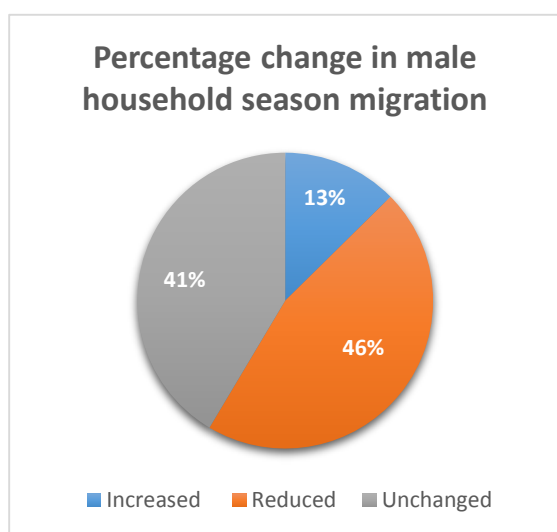


Figure 12: Percentage change in male household seasonal migration

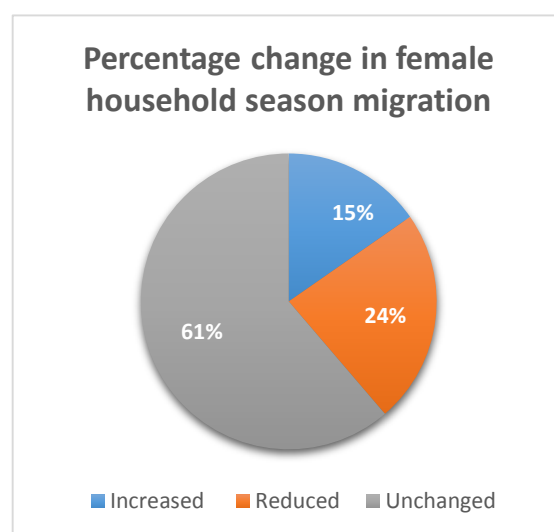


Figure 13: Percentage change in female household seasonal migration

If we generalise these results to the whole of the Farfar area, these findings indicate that in any given household men are almost twice as likely to have stopped seasonally migrating than women.

Age

Comparing changes in seasonal migration across age proved more of a challenge than was anticipated since most people in the study area do not know how old they are. As such, data was collected on which age group individuals fell into based primarily on looks and household responsibilities. The results are illustrated in Figure 14.¹⁰

¹⁰ The age categories that seasonal migrants were placed into were 'Children' (0-17 years old), with 'Youths' (18-35), 'Adults' (36-60) and the 'Elderly' (61+). However, no elderly people seasonally migrated in the surveyed households in 2005 or 2015, and the number of children travelling was negligible. Therefore the data presented in Figure 14 illustrates changes in youth and adult seasonal migrants only.

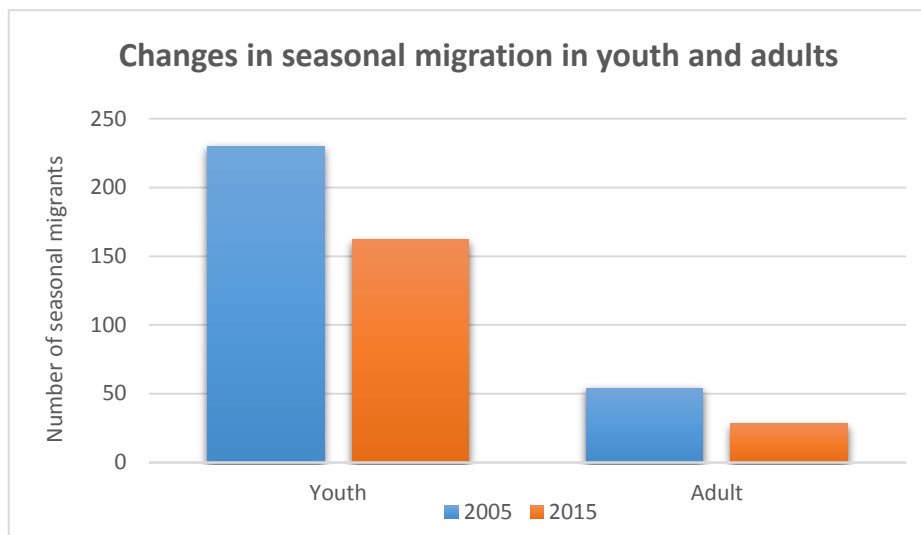


Figure 14: Changes in the number of youth and adult seasonal migrants

Figure 14 shows that seasonal migration in both age groups fell over the ten year period. However, the number of youth migrating fell by 30% compared to 44% amongst adults. This means that the number of youth seasonally migrating, as a proportion of the total seasonal migrants, has increased from 80% to 85% over the last ten years while the proportion of seasonal migrants that are adults has reduced from 19% to 15% (see graph in Appendix 2.2).

The vast majority of seasonal migrants even in 2005 were youth. Since the reduction in seasonal migration over the last ten years appears to have been more acutely felt in adults, this majority has increased in 2015. This could be explained by adults becoming too old or weak to travel - a reason for the reduction in seasonal migration given in almost a third of the households surveyed. As a result it has compounded the youth's dominance as the primary age group seasonally migrating in Farfar.

Sub-community

The variations in changes of seasonal migration across different sub-communities was important to analyse for a number of reasons. In addition to gaining an understanding of how these shifting patterns differ between those near the 'hub' of Farfar in the community and those on the periphery, the sub-community can also act as a proxy for the proximity of households to the ALP intervention. One community member informed me that Farfar and Bantafarigu were the "primary beneficiary communities", although, in the researcher's experience, the intervening organisations only travel to Farfar and never to any of the other sub-communities. With that in mind, Figure 15 shows the changes in the number of seasonal migrants travelling from each of the eight sub-communities from 2005 to 2015.

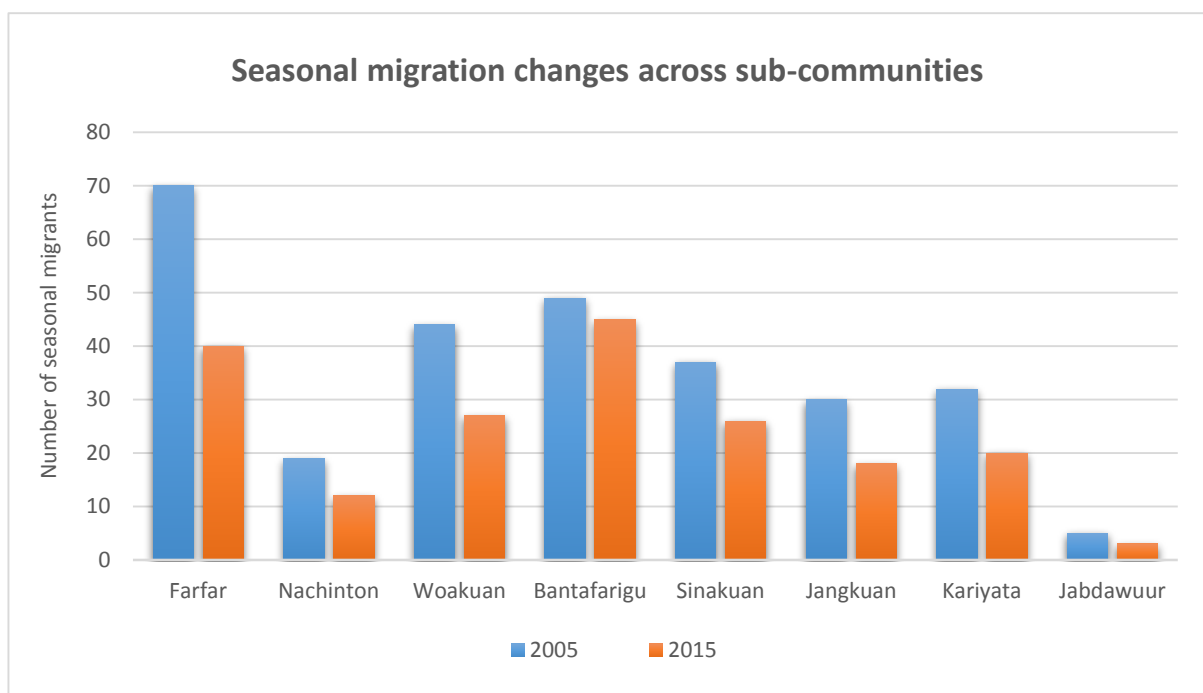
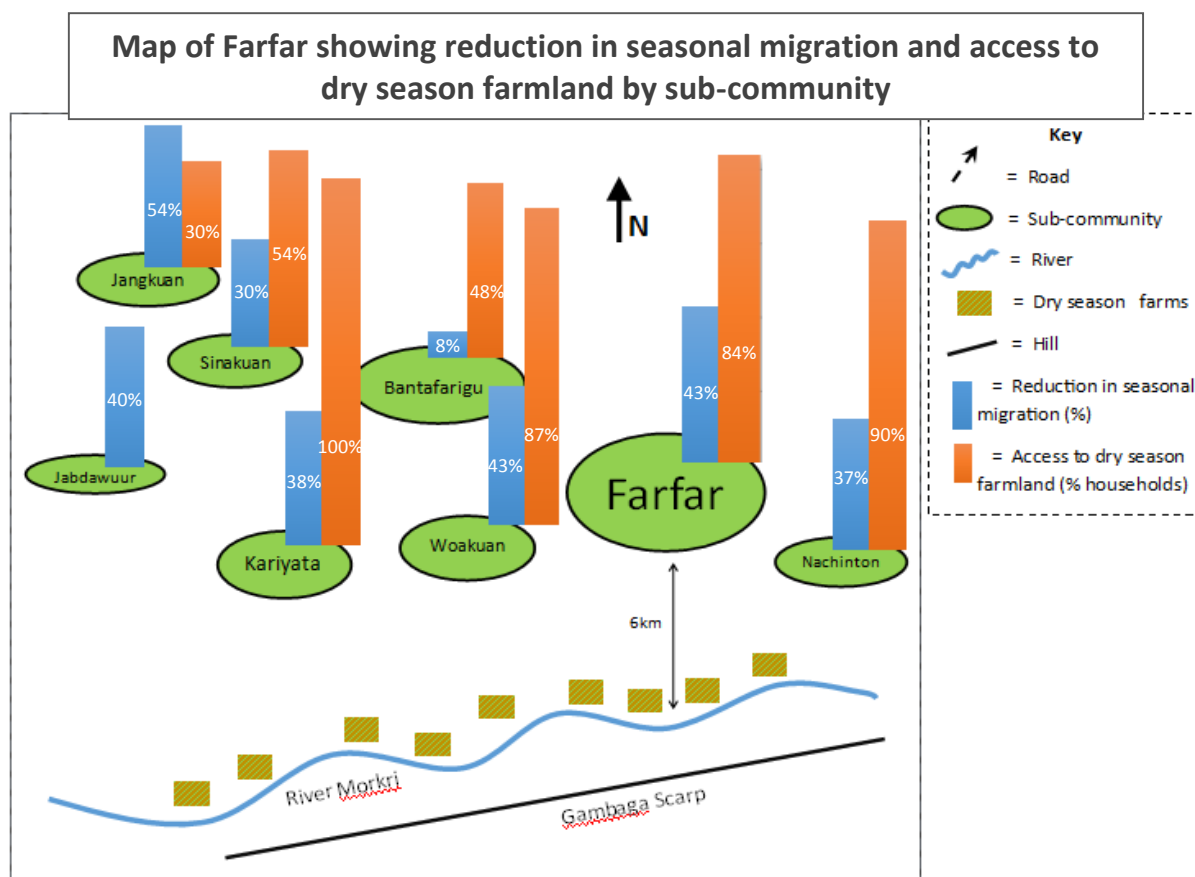


Figure 15: Changes in seasonal migration across sub-communities

The number of seasonal migrants travelling from all of the sub-communities in the area fell. The highest drop was from the sub-community of Farfar while Jabdawuur saw the lowest. However, since Farfar had the most seasonal migrants by some distance in 2005 and Jabdawuur by far the fewest, analysing the decline as a proportion of 2005 seasonal migration levels provides more insightful analysis of these specific figures (graph in Appendix 2.3). The most interesting point to note from Figure 15 is perhaps that the number of seasonal migrants in Farfar fell by so much that in 2015, fewer people migrate in Farfar than in Bantafarigu despite total population levels for the former being almost three times that of the latter.¹¹

The largest decline in seasonal migration, of 43%, was found in the sub-community of Farfar, while by far the smallest was 8% in Bantafarigu. This was initially a surprise since Bantafarigu is a fairly large sub-community, close to Farfar, and they are said to be a key beneficiary sub-community of the ALP intervention which supports and enables dry season farming. Since the main reason given by households for the reduction in seasonal migration was dry season farming, it seems logical to analyse these figures alongside sub-community access to dry season farmland. In Map 4, the household access to dry season farmland and the percentage drop in seasonal migration (2005 to 2015) have been pinned to the sub-community level map presented in Chapter 3.

¹¹ Source: sub-community level population projections for 2015 from the District Assembly, based on the 2000 census that note Bantafarigu having a total population of 518 and Farfar a population of 1,504.



Map 4: Reduction in seasonal migration and access to dry season farmland by sub-community

As illustrated in Map 4, the sub-communities closest to the river, and the dry season farm plots, are those with the greater access to dry season farmland - Farfar, Nachinton, Woakuan and Kariyata. In all four of these sub-communities at least 80% of households have access to land by the river to dry season farm. The remaining sub-communities' dry season farmland access is much lower, ranging from none, in the case of Jabdawuur, though 30% in Jangkuan, while in Bantafarigu and Sinakuan around half of households have access to land.

If we hypothesise that the key driver for the fall in seasonal migration is because households are dry season farming then we might expect the sub-communities closest to the river - who have the largest proportion of dry season farmers - to have the highest seasonal migration reduction rates. Indeed, the figures in Map 4 shows that Farfar, Nachinton, Woakuan and Kariyata all have high seasonal migration reduction rates, ranging from 37% to 43%. Furthermore, Sinakuan and Bantafarigu both have lower rates of reduction and significantly lower rates of access to dry season farmland, suggesting that more households in two of the sub-communities furthest from the dry season farm plots, are still seasonally migrating.

However, seasonal migration has reduced the most in Jangkuan and to a similar extent in Jabdawuur as in the four sub-communities closest to the river. In Jabdawuur there are only four houses, only two

of the households in which were surveyed. As such, the small sample reduces the meaningful interpretation we can draw from these specific cases. Nonetheless, Jangkuan has the highest rates of reduction in seasonal migration and the lowest rates of access to dry season farmland (excluding Jabdawuur). As such, it is probable that some other, more significant stimuli are causing the decline of seasonal migrants in Jangkuan.

Part of the explanation however could come from the fact that in 2005 Jangkuan had by far the largest proportion of the total surveyed population seasonally migrating (28%). Ten years later, Jangkuan still has the highest proportion of the surveyed population travelling (17%), albeit the gap to the next highest (Sinakuan with 15%) is much reduced from 2005 levels. Indeed, the three sub-communities with the highest number of seasonal migrants in 2015 as a proportion of the total surveyed population is in fact Jangkuan, Sinakuan and Bantafarigu. This would perhaps fit better with the hypothesis that the further away households live from the dry season farmland, the less dry season farming they do and therefore the more people seasonally migrate.

To assume that the reason for the small reduction in seasonal migration in Bantafarigu was due to limited access to dry season farmland alone might be a step too far. Especially since households in Jangkuan have less access to dry season farmland, but the reduction in seasonal migration was the highest. Indeed, the vast array of other small and localised driving forces behind decisions to migrate highlighted in section 6.2 may play a role. Despite this, the proximity of households to the dry season farm plots, their access to dry season farmland and the changes in seasonal migration over the last ten years does present a compelling correlation. It appears reasonable to assume that in the 'rush' to clear a plot of land, created by the realisation of the high profits being made by watermelon farmers, coupled with the lack of land available, those who live closest to the river were at an advantage and therefore, they are more likely to farm in the dry season and less likely to seasonally migrate¹².

Conclusion

Drawing on the surveys carried out in Farfar, this chapter has shown that the number of individuals seasonally migrating in Farfar has reduced by one third in the last ten years. At the household level, there has been a decline in the number of seasonal migrants in 58% of households in the area. Of the three key seasons during which individuals migrate, the decline in dry season migration is the sharpest. This chapter has also highlighted that over this ten year period, and in any given household in the

¹² It should also be noted that there appear to be no other reasons that would explain why some households do not dry season farm, other than access to land. Whilst access to other inputs, and possibly the labour available within the household, could be an issue for some, as previously discussed, the profits are so high that everyone in the area values and wants to dry season farm.

community, men are almost twice as likely to have stopped seasonally migrating than women and the youth have become even more dominant as a proportion of total seasonal migrants in Farfar.

Amongst the drivers affecting decisions to migrate, the central reason given by households for this decline is that households are now engaged in dry season farming, the demand for which has been created by the introduction of the highly profitable watermelon. This is corroborated by the trends highlighted in this chapter between the proximity of households to the dry season farm plots, their access to dry season farmland and the rates at which seasonal migration has reduced. However, it must be acknowledged that some results show that there are other driving forces affecting these changes in seasonal migration which cannot be accounted for. Indeed, the dynamic and highly localised nature of many of the drivers of mobility indicate that it is perhaps impossible to determine aggregate correlations between stimuli that can account for all changes in seasonal migration in Farfar.

The fact that the Adaptation Learning Programme (ALP) is actively supporting and enabling dry season farming in Farfar also allows us to assume that the work of the international and local NGOs involved is contributing to this reduction in seasonal migration. The implications of this on adaptive capacity will be discussed in the next chapters.

7. The positive impact of seasonal migration on adaptive capacity

To understand how the aforementioned changes in patterns of seasonal migration in Farfar affect the capacity of households to adapt to climate change, we need to understand the impact of seasonal migration on adaptive capacity. In order to provide a balanced representation of this complex relationship it is important to capture both the outcomes of seasonal migration that enhance and those that diminish adaptive capacity. By drawing on researcher observations as well as the experiences and stories of respondents in interviews and informal conversations, this chapter unveils the positive impact of seasonal migration on household adaptive capacity through the lens of the ACCRA Local Adaptive Capacity (LAC) framework. As such, it presents the impact of seasonal migration on the *household asset base, knowledge and information, innovation, flexible forward-thinking decision making, and institutions and entitlements*. In doing so this and the following chapter answer sub-questions 4 to 8 highlighted on page 18. The maladaptive effects of seasonal migration will be discussed in the next chapter.

7.1 Household asset base

Within the LAC framework the household asset base is comprised of the *financial, physical, human, social, natural and political* capitals necessary to adapt to climate change. Whilst all of the capitals overlap and also influence each other, this section outlines the enhancing effect of seasonal migration on each in turn while acknowledging where there is a compounding impact of one stimuli on one or more other capitals.

Financial Capital

As highlighted here by one local farmer, the central reason that households decide to seasonally migrate is financial; “if I travel I am able to get some money to support my family”. The local Mangazia in Farfar, who acts as a chief of women for the village, went slightly further and emphasised the contrast between the lack of income generating opportunities locally and those elsewhere, to explain why people leave;

“...because there is no money here. If they are over there they can always go to farm and labour and get some money and support themselves. Here, at the moment, they are doing nothing, but they can always go there and get some money to support themselves.”

Spending time in Farfar, it is clear very quickly that there is very little opportunity for people to earn an income. Livelihoods are very much based on subsistence agriculture with the hope that the harvest will provide enough to sell a portion at the local market to pay for school and health costs for the household.

Kombat, the sub-chief of Kariyata, who has spent a lot of time in the Ashanti and Greater Accra regions of Ghana, emphasised the high levels of income that can be earned if you travel, partly enabled by the southern regions of Ghana benefiting from two rainy seasons, compared to one in the north;

“The serious farmers there are even far far far far better than the government workers! They get more income than salary earners. So it makes farming there very very interesting as compared to here”.

There seems no doubt that spending some time in the south of Ghana allows households to boost their income. Additionally, further lifts to financial capital may come from friends and family who are permanent or semi-permanently living elsewhere. Families and households in Farfar are very large by European standards¹³, and also very important. The culture of wealth sharing within families and clans¹⁴ is very strong even if people are separated by geography. This feeds a robust culture of remittances where those down south “send money from time to time”. “I learnt that when you are travelling, you have to pay some money somewhere and you remit” explained one man from Bantafarigu who used to own a small cocoa farm in the south. This culture of those in the south sharing wealth in with friends and family in Farfar is supported and encouraged by seasonal migration. Indeed, most of the interviewees meet friends and family members they know when they seasonally migrate. When Margaret from Nachinton travels, she says; “I earn money, I work for some people, and the brother also gives me money” compounding the positive impact on household financial capital.

The financial boost households receive does not only derive from people already known to the family. Konjit, a lady from Farfar, explained that the money from “new relationships has put the children in school. It also helps with the general money [in the household]”. Thus far the boosts to financial capital discussed are primarily money transfers but forms of informal credit through new and existing relationships also contribute significantly. One young female seasonal migrant from Woakuan explained how from a “new relationship, I borrowed some money from them and paid it back later”. Likewise, migrants often become a member of groups and organisations when they travel (discussed in more detail later in this chapter) which involve small financial contributions and from which they

¹³ The household survey undertaken as part of this research found the average household size to be 13 in Farfar

¹⁴ Within the Bimoba tribe the clan is essentially the extended family and clan heads are the owners of the land on which clan members build their homes. Whilst social ties are strong within the whole community they are particularly so within clans and the culture of wealth sharing runs deep within them.

can borrow money. Finally, Dayak, who runs a small bar in Farfar describes how he developed a form of informal credit with a drinks wholesaler he met when he travelled:

“I used to buy drinks from Kumasi and the relationship I created there, they would scan on my behalf so that I collect the drinks and come home and sell. Later I would send the money back. The brewers are in Kumasi they are not here so it is also cheaper down south”.

This agreement with the drinks seller in Kumasi based on trust enabled Dayak to receive the drinks in advance of payment and eased the path of him running his business successfully. Additionally, he saved money on the inputs for his business since the drinks were cheaper in Kumasi than in the local area around Farfar. For those without the luxury of running a small business in Farfar however, there are also cost savings to be made by seasonally migrating as described by Jacob from Bantafarigu below;

“Most of the time, when we go there, we get other improved chemicals at a cheaper price than what we buy here because most of the chemicals they bring from the south and sell them here. They buy at low prices down south and come and sell at high prices for us here.”

Effectively seasonal migration is acting as an institution that provides more equitable access to farming inputs which would otherwise be unavailable, poorer quality or more expensive in the north. Purchasing “cheaper” and “improved” chemicals at a lower price enables seasonal migrants to maximise the harvest, whilst saving some household financial capital and increasing the chances of a large enough harvest to sell a portion to generate more income later in the year.

A slightly more intangible method through which seasonal migration boosts financial capital is through breeding a savings culture. Diim Label, a lady from Farfar who has travelled a lot in the dry season in the past explains how this develops;

“We used to buy things like basins and keep in our rooms that you use to fetch water and bowls, many many many. But, because of travelling, we realised that if you have small monies, you have to do savings to take care of your children in the school.”

When someone travels from Farfar, there is an expectancy that they return with something (financial or physical) for the benefit of the household. Whilst this can put pressure on the migrant to ensure that they succeed, it also breeds a culture where people are more responsible with money and think more about the future of the household before spending, enabling households to be better prepared when shocks in the climate threaten their livelihoods. This will be discussed in more depth later in this chapter.

Physical capital

Despite the breadth of ways in which seasonal migration appears to enhance financial capital, of course, money is primarily a medium through which households can develop other areas of their asset base. Table 3 outlines just some of the many different physical assets interviewees describe being able to buy as a direct result of their mobility.

Physical assets	
New roofs	Food
Sandals	Clothing
Tractor	Bullock
Livestock	Fertiliser & weedicides
Guns	New rooms
Grinding mill	Car
Bore hole	New house
Motor King	Motorbike

Table 3: Physical assets gained through migrating

As a key source of income for many households, it is no surprise that seasonal migration is also responsible for the acquisition of many different physical assets. Here, Jacob from Farfar talks about the time when his wife joined him down south a few years ago; “she came down to Kumasi to help me with the Maize. I got the money then and I built four rooms all with zinc [corrugated iron roofs] here in Farfar”. Indeed, throughout this research, it seemed that when respondents explained how they paid for the corrugated iron roofs (a significant improvement on the traditional dried grass roofs) migration was almost always involved.

Some have earned enough to move away completely from the traditional compound of circular red mud rooms to build houses with cement and breeze blocks. One elderly lady from Farfar, whose sons seasonally migrate to visit another family member in the south, explains this when declaring her personal opinion of migration; “migration is good, it’s excellent, excellent! Excellent because some people have even built block houses like this one”. Indeed, there were a number of “block houses” being erected in the area, some a product of a successful watermelon harvest and others a result of the money earned elsewhere. Konjit, also from the sub-community of Farfar goes on to explain the impact of this progression in building materials:

“Formerly they were using round homes like this [points to one of the many circular red mud homes with dried grass roofs]. When it rains, they get flooded and the wind can come strong and move it. But now, because of migration the children have money to put up some of the new buildings.”

Purchasing farming inputs for the rainy season is often cited as a key reason to travel during the dry season, as one dry season migrant from Bantafarigu highlighted, “if you are dry season migrant, you migrate in the view that when you come home you buy fertiliser”. Access to these farming inputs, which for many would be unavailable without mobility, provides many of those gains mentioned in the previous sub-section, having the potential to maintain and enhance physical capital, human and financial capital through larger and more reliable harvests. However, the gains in farming inputs and

other physical capital as a result of seasonal migration are not only a result of income earned working elsewhere as Mohamed from Nachinton explains; “my brother normally gives money to support the girl in school and he also gives chemicals for spraying from down south, for the rainy season”. This amplifies the positive impact mobility can have on household physical capital.

Sometimes the positive impact of seasonal migration, in terms of physical assets, will not only be limited to the sending household. One lady who recently returned to Kariyata from the Ashanti region to prepare the farmland with her husband for the rainy season explains;

“When I was coming back, the church members gathered second hand clothes for me to come and distribute... So I came and distributed them to the children and other people in the community.”

This demonstrates a clear ‘knock-on’ effect enhancing physical capital and human capital in the wider community. Looking at increased access to farming inputs in particular, fertilisers and chemicals will allow some to farm different crops to vary the harvest, spreading the risk of climate variations across crops. Purchasing a bullock was cited as a product of seasonally migrating a number of times, which enables households to farm more land to produce a larger yield. Indeed, one man even suggested that his neighbour had managed to purchase a small tractor to plough his fields, with the money from seasonally migrating which, according to him has “never happened before” in Farfar. Guns for hunting enable households to hunt for meat to feed the family and to sell, whilst a motorbike or Motor King¹⁵ eases transport of goods to local markets and is also potentially an extra source of income, all significantly contributing to enhancing the household asset base and their capacity to adapt to climate change.

Human capital

One of the most frequently mentioned ways that seasonal migration affects household human capital is in the levels of education, concisely articulated here by the grandmother of three students who all travel during the school holidays to pay their school fees; “if they don’t migrate, they have no money to pay for school fees, and so they don’t go to school”. However, it is not just the students who travel to pay for school fees and other learning materials. One man from Bantafarigu with a lot of experience of migrating during the dry season and for longer periods explains what his migrating experiences

¹⁵ A big motorbike with a large trailer fixed to the back. Often used to carry goods to market and to carry people like an informal transport service for which people will pay a small fee.

mean for his children; “if I didn’t travel, my children would have stopped going to school. The [two] girls are both in senior high school but there are ten children all schooling”.

Furthermore, household members’ education is sometimes funded by people with whom new relationships were created when they were not at home. Kofi highlights the importance of a new friend with regards to his tertiary education; “One man I met when I was down south, he is a pharmacist, based in Kumasi. He helped me to go to University. He helped with the money”.

Whilst the knowledge and skills that people attain through their experiences of seasonally migrating will be explored in more depth later, it is an important constitutive element of human capital. For example, it seems that almost everyone spoken to as part of this research learnt at least one new language through their experiences. Most often migrants learn Twi, largely due to the fact that the majority of seasonal migrants travel to the Ashanti region from which the language originates.

The income gained from migrating is also often used to cover household health costs. Whilst household health in general can improve as a result of seasonal migration due to a rise in the financial resources to pay for healthcare, again, the relationships made while travelling can also act as a safety net if unforeseen health costs occur. One example of this is the experience of one young woman from Jabdauur, who travelled to the Ashanti region with her husband in December last year;

“When we went initially, we were financially handicapped and one of the children fell sick. My child was admitted to the hospital and I told my husband to go to a friend I had made for money, for them to pay the medical bills and they did.”

Further to the extra income that allows the construction of new houses at home (discussed earlier), some mentioned family members offering their labour to help build new homes as well. In doing so, the additional financial and human capital (in terms of labour) strengthen the household asset base in relation to physical capital (the new house). It also further enhances human capital as a result of the more effective shelter which provides better living conditions and reduces the risk of serious damage being afflicted to the house at a later date.

Social capital

It has already been discussed how creating new relationships and strengthening existing ones can enhance financial, physical and human capital. However, it is important to recognise the additional benefit of the relationships that connect households in Farfar to those in different locations.

The gulf in incomes, as well as the inequalities in many other human development indicators, between the north and south of Ghana was highlighted in the regional contextual framework of this thesis. As a result of this, people who live in the south of the country are likely to be more resource rich, and have access to a wider variety of resources, than those in north. Therefore, creating relationships with people in the south that have a larger asset base could be viewed as a higher value form of social capital than those created with other northerners since it may give people from Farfar access to resources (including intangibles like knowledge and education) that are unavailable in the north and may even create more opportunities for upward social mobility. In effect, and at an aggregate level, creating relationships in the south may act as a 'multiplier' for social capital compared to those created with other northerners.

Just as important as the regional income and asset inequalities between the north and south of Ghana are the differences in vulnerability to climate change. South of the three northern regions of Ghana, the landscape changes vastly and is not characterised by the same semi-arid, Sahelian conditions as the north. Livelihoods are also more diverse and not as reliant on agriculture as they are in Farfar. For those households in the south of Ghana that are still reliant on agriculture, the two rainy seasons, compared to one in the north, demonstrate how livelihoods are not as exposed or sensitive to climate changes than those in the north. As a consequence, households in the south of Ghana are less vulnerable to climate change and could be observed as a more valuable source of social capital for adaptation for northern Ghanaians. This strengthens the theory that relationships with people in the south provides a more valuable source of social capital than that in the north, in particular for adaptive capacities.

Of course, this 'multiplier effect' of social capital for northerners which bridges the north and south of Ghana would only come into effect if people in the south possess the same customs of sharing of wealth and self-organisation as that in the north, and, simply if southerners want to create these connections with northerners. The fact that there are already people from the Upper East Region in many of the areas where people travel to eases this process and facilitates the creation of new relationships. In practice, and as eluded to earlier with the many ways households have benefited from new relationships created with people from southern regions of Ghana, migrants do appear to create strong relationships quickly. The financial support that both the young woman from Jabdawuur whose children were in need of hospital treatment, and that which Kofi received enabling him to go to university, both offered by people they met in southern regions of Ghana, are evidence of this.

In fact, almost everyone interviewed as part of this research spoke of new relationships they had created throughout their experiences of seasonally migrating and the majority also mentioned the

groups and organisations they joined. These associations are often organised around certain tribes or religions and are a particularly effective way of meeting other people (some living permanently in the south and some seasonal travellers) and building social capital. They also provide a safety net in case of emergencies whilst seasonal migrants are away from home as one man from Bantafarigu explains;

“I belong to a local organisation called the Motoak group. Motoak means unity. As we are travelling, anything can happen to anyone. So, over there, we have associations and we contribute money to ensure that if someone fell sick, we can use that money to treat the person. If someone dies we use the money to be able to do the burial. Anytime I travel I belong to that association.”

Many other groups have been mentioned by different interviewees, including the Mob Group, the Moyom Association amongst others, all with roughly the same principle of financial contributions to cover health, funeral or other emergency costs.

Catholic and Muslim groups that people join while away from home were mentioned a number of times and through the commonality of a shared religion many strong relationships have been created. Dinwaak, a woman from Kariyata, explains how her church group down south helped her in a time of need;

“When my husband passed on the church members supported in many many ways. They supported me financially and in order to get some food stuffs to take care of the children.”

The principle of communal labour, or *nnoboa*¹⁶, is strong in Farfar as in many parts of Ghana. Sometimes this is in the aid of a community project where each house offers one young male to carry out manual labour (such as the building of a small health centre, currently in effect in Farfar), or as a form of mutual assistance farming labour where a small group of people combine their labour force to work on each other’s farmland at different times. Joshua, from Sinakuan, explained how participating in a communal labour group for his uncle in the Brong Ahafo region ended up helping his family;

“We go and farm somebody’s land, then they also organise when to farm for us. When it is time for harvesting we organise ourselves to harvest this person’s rice, then the next. Through that I was able to have a link with one senior school headmaster, and through that relationship, I got two admissions for my younger brothers.”

Being a member of this small and informal group, Joshua was able to send two family members to a good school in the south. Thus, this relationship enabled him to improve household human capital

¹⁶ From Twi, the language of the Ashanti tribe (the natives of the Ashanti Region of Ghana), *nnoboa* directly translates as “working together for the common good”.

and potentially the options his younger brothers may have in the future giving them a path for upward social mobility which is not available in Farfar.

In truth, much more could be written about the different ways in which social capital is enhanced through mobility. However, even within the constraints of this thesis, it is clear how many other areas of the household asset base, and other characteristics of adaptive capacity, can be influenced by the friendships and connections that are made by seasonal migrants through the many ways in which people interact and organise themselves. Indeed, if we take into account the ‘multiplier effect’ for people from Farfar of building social capital with households in the south of the country, social capital becomes a powerful force to enhance adaptive capacity for households in Farfar.

Natural capital

The central method through which natural capital is strengthened by seasonal migration is in the recognition and acknowledgement that natural capital is part of the household resource base, and in enhancing an individual’s capacity to exploit it. Here, Geoffrey discusses how he became aware of how he can use the natural capital around his house in Jangkuan as a new source of livelihood for his household;

“I learnt that people over there use fuelwood to prepare charcoal. So last year, I came [back to Jangkuan] and tried. I was able to sell a lot of fuelwood to support my family. This year I did the same thing. As I am going to build [new rooms], this fuelwood that is lying down there, I will get a lot of money to support in the building. I learned this over there. I never knew that someone could do this!”

Through his experience of seasonally migrating, Geoffrey has gained knowledge of alternative livelihood and adaptation options, as well as the capacity to innovate and exploit the natural capital at his disposal for the benefit of his household. This will lead him to create new financial capital and ultimately physical capital once he has built his new house.

One further example of the realisation of the value of natural capital is in the acquisition of land. Another man from Jangkuan demonstrates how spending time in a different place led to him realising the value of land, in particular in more developed areas;

“I realised that if I have land in the town and put a house in town I will be able to rent to people and get more money. I have cleared the land to put up a house in Garu. I learnt that from the

south. If you are just sitting down you will not think of doing those things here. You will think 'it's not necessary, it is not important.'"

Again, it is clear to see how his mobility has directly led to this knowledge and innovation (explored in greater depth later) in exploiting the opportunities of natural capital in the local area. Seasonal migrants don't acquire land only in for Farfar or Garu however. Some learn that they could acquire land in the south, to farm there as well as back at home. For some people, this effectively means that they lead dual lives travelling between the two locations to farm at different times of year. Kombat, from Jangkuan explains how this works for his household;

"I used to go there to labour and come back home, but I met a certain man and the man told me 'it is good that you get a portion of land to farm cocoa for yourself'. I told the person to support me to get the land, and the person really did that. Now I own that cocoa farm in the Ashanti region. I normally travel to that place during the dry season."

Kombat would always come back to farm during the rainy season and now some of his children stay the majority of the year in the Ashanti region to look after his cocoa farm so he spends most of his time in Jangkuan. Through this land acquisition he was able to diversify his livelihood and farm a profitable cash crop for which the conditions are not suitable back home. In doing so he is also farming in much less climate vulnerable part of Ghana and ultimately providing a significant source of income for his family and further income generating opportunities for his children. All of which would not have been possible without him deciding to travel to the Ashanti region during the dry season.

Political capital

The variety of experiences and interactions people have when they travel, compared to if they were to stay in Farfar, often have a profound effect on them. Therefore, for those that seasonally migrate, learning to live with people who live differently from themselves, changes them. "You are wiser, you know more" is often suggested as seasonal migrants describe the ways that their experiences have changed them. Since this is also the description frequently given from those who have not travelled to explain those who have, seasonal migrants often appear to be held in higher regard and are respected for their new found wisdom and knowledge. One man in Farfar, felt that these experiences have also increased his participation in local community life; "it [my experiences of travelling] have given me a lot of participation in all kinds of things. I am now participating in many meetings." As community monitor for the ALP intervention and chair of the local parents and teachers association at the primary school, he is now undoubtedly very active in the community.

Margaret from Nachinton, who travels to help her brother on his farm in the Brong Ahafo region, has become woman's leader in the local church, something which, she stated, she would not have been voted for, nor had the confidence to nominate herself for, if it were not for her experiences of migrating.

Both of these examples show how these two individuals have increased their political capital from seasonally migrating. Learning from their experiences down south, sharing these with people at home, and being held in slightly higher regard by their neighbours, has increased their confidence to make decisions, and their capacity to be politically active in order to claim their households' political rights and to affect change in the community.

7.2 Knowledge, information and innovation

Knowledge, information, and innovation, comprise two different characteristics of the LAC framework through which this research interprets the impact of seasonal migration on adaptive capacity. Whilst many of these characteristics are connected and affect each other, hence the portrayal of the LAC model as a Venn diagram in 2.2, these two are so intertwined that the findings related to these two components are presented in tandem.

A few of the ways that seasonal migrants' knowledge and access to information of adaptation options has increased have already been mentioned since they interweave with the components of the household asset base. Nonetheless, it is important to take a closer look at this crucial component of the LAC framework because a great deal of knowledge and innovative behaviour in Farfar appears to have roots in the experiences of migrants.

"If you are travelling you are able to learn many many things" declares one woman from Sinakuan. Daboib, who moved from Bantafarigu to live with his wife in Jangkuan, jokes; "even since I have come from Bantafarigu to here, I have learnt something, so I should be better than someone who has not gone anywhere". Dauda, who has spent much of the last 20 years in Cote D'Ivoire farming coffee, cocoa and other crops used a local analogy to describe the difference in knowledge between those that have and have not travelled;

"It's like somebody who has never been to the market at all, he doesn't know what sells in the market. He doesn't know how much is a bowl of maize, but if you are always in the market you know how much a bowl of rice and a bowl of maize costs. It means, if you migrate, the person will get more knowledge and experience than the one who didn't travel."

One of the key ways that mobility enhances knowledge and innovation is through the acquisition of new knowledge and techniques related to new crops, farming practices and inputs. Individuals bringing seeds back with them from their travels is traditionally the central method through which new crops are introduced to Farfar¹⁷. Konlan recalls a new type of cowpea which he brought to plant back home in Kariyata;

“I saw a new variety of cowpea [down south], and brought it here. I planted and it gave a very good yield. Now other people are doing it, they have copied me.”

Konlan’s is a common story. In fact there is seemingly an array of different crops which migrants have brought back to Farfar and planted which have enabled households to diversify the crops they sow and spread the risk of a bad harvest across different grains, beans and vegetables. When successful, as Konlan mentions, the behaviour is copied spreading the benefits across the community. One of the most significant crop introductions in recent years is watermelon. A highly profitable crop that was introduced to the Farfar area between seven and ten years ago, watermelon now brings traders all the way from coastal Accra to buy watermelon to sell at their markets in the capital.

Further to the introduction of new seeds, a variety of new farming methods and techniques are learnt from the experiences of migrants. Many of these are small and seemingly simple but can make a significant difference to household farming practices. Ali from Nachinton, who has only travelled twice and for a total of under two weeks, insists that, like many in the area, he learnt how to use a machete or cutlass to his farmland through his experiences in the south;

“When I was here I didn’t know how to use cutlass to farm, to prepare farmland, but I learnt how to use it over there and that is what I am now using to prepare my watermelon farm.”

Another example is the use of chemicals and weedicides to help clear the land prior to planting, also known as zero tillage, as one man from Bantafarigu explains;

“I learnt how to practice zero tillage there. Over there, they use the chemical to spray the farms. When the grass has died then they just plant the seeds. So I learnt that there and came and used it here. It’s a new thing.”

¹⁷ In more recent years climate change interventions run by international and local NGOs in the area - like ALP - have also significantly contributed to the introduction of new crops.

Finally, Kayel can be seen in the picture below building a fence to protect his dry season farmland from being trampled by roving animals.



Kayel building a fence around his farmland to protect it from roaming animals (right, in the distance)

Kayel explained that this is something he saw people doing when he worked on farms in the Ashanti region of Ghana. Roaming animals destroying dry season crops has been a significant problem as pastoralist herders move south into northern Ghana in the drier months, something which is further exacerbated by climate change. This innovation has provided an effective solution for Kayel and likeminded farmers in Farfar.

Many of these innovations are small changes in behaviour that can have a significant impact on the household asset base. Protecting crops ensures that farmers do not suffer a loss of physical and in turn human and financial capital through the destruction of the harvest. Clearing farmland more efficiently and effectively can lead to households farming more land and reaping a better harvest since the crops are able to grow unhindered by weeds. Again, this increases physical capital and potentially financial capital through the sale of these crops but also ensures farmers can plan effectively to ensure there is going to be enough food for the household, improving their ability to make flexible, forward-thinking decisions.

In addition to the new and innovative farming practices, there are many new economic activities that seasonal migrants come back to Farfar to carry out. Below, Margaret discusses how she learnt to make a traditional Ghanaian food called kenkey during her time in Ejura in the Ashanti region;

“When I went to Ejura somebody told me you have to find your own job and when I come home I should be making kenkey and doing shea butter extraction and be selling. I learnt how to prepare the kenkey down there. So, I came back to Farfar to do it here.”

As well as this new skill she has acquired, Margaret also appears to have become more entrepreneurial as a consequence of her experiences and the advice she received from friends in the Ashanti region. As a result, she has a new source of income to pay for school fees, health and other costs, enhancing household financial and human capital.

John, from Farfar picked up a new skill when he used to travel which has become a crucial source of income for his household in the dry season;

“When I travelled, I learnt how to hunt, how to put traps for grasscutters¹⁸, for meat. In the dry season, that’s what I do now, I put traps for meat.”

Since the household eat some of the bush meat he catches and sell the rest; improving his knowledge, to increase his capability to exploit natural capital, has enhanced household human and financial capital, ultimately having a compounding effect on building his household’s adaptive capacity.

It is also important to note that the impact of this knowledge and innovation is not only felt by the sending household. Strong networks that exist in the Farfar community ensures that successful innovations are carried out by members of other households, spreading the positive effect on adaptive capacities. This is something which is touched on by one respondent when discussing the role of migration in spreading new knowledge and skills to Farfar;

“When people don’t migrate they don’t have new knowledge around here, but if they migrate and people come to see that they are doing new things here, they also begin to do new things.”

One final new economic activity that a man from Bantafarigu started as a result of migration is known locally as *okada*; running a moto-taxi service using a Motor King;

“I got the money from there [Ashanti region] and came and started doing okada here. I have been running it here, to Garu. I learnt it over there and came here to run it to see whether it’s profitable. It is profitable. I have been doing this for four years now.”

With the financial capital he earned from travelling, he was able to purchase the Motor King; adding to his physical capital. Learning of okada as an adaptation option whilst he was travelling, he was able to use the physical capital to create a new stream of income to support his household and diversify

¹⁸ A *grasscutter* is the local name given to the greater cane rat common across sub-Saharan Africa and frequently used as a source of bush meat in Ghana and throughout West Africa.

household income into a non-agriculture reliant (and less climate vulnerable) sector. As a result the capacity of his household to adapt to climate change has increased substantially from his migration.

Being innovative and trying new crops, farming practices or economic activities, carries risk and, in short, does not always work. As such, an important constituent of innovation is to support risk taking and to provide a safety net should an innovation fail. The new sources of income seasonal migrants receive from their travels as well as the additions to their physical assets helps to support this risk taking. The strong social networks and principles of *nnoboa* (discussed earlier) within the community support new and risky behaviour but the social capital created with individuals in the southern regions of the country also contributes to the network of support households have to call on. Therefore, not only does seasonal migration provide the requisite knowledge to stimulate innovative behaviour but it also ensures a wider, more robust safety net to protect against the risk of innovating. If this is realised by individuals it will also encourage further innovation since households know that they will have support in the event of failure.

Knowledge and information of adaptation options and stimulating new innovative behaviour are essential elements of climate change adaptation and, as outlined above, the ripple effects across the different characteristics of the adaptive capacity are substantial. We have also seen how these benefits can stretch across the community building adaptive capacity not just in a migrant's household, but in the whole community.

7.3 Flexible, forward-thinking decision making

A key component of flexible, forward thinking decision making is the ability to prioritise. In this sense, making decisions that prioritise and secure the long term future of the household, rather than short term individual desires, can make a substantial contribution to the capability of the household to adapt to climate change.

Dauda, who has spent the last twenty years travelling between his two homes in Cote D'Ivoire and Farfar explains how he thinks his experiences have changed his priorities;

“Now I went to Cote D'Ivoire, and through the friends [I made there], I was advised that if I get money, I have to keep it for some good use. Formerly I was not doing that.”

Dauda, is not alone in this. Becoming more responsible with money and prioritising the welfare of the family as a result of migrating was mentioned by many respondents, including Kombat from Kariyata;

“I brought it [money] to pay for my children’s education. Any time I am sitting down I am thinking about financing my children’s education. If I wouldn’t have migrated, I would wake up in the morning to just maybe think of how to get my drink and forget of my family responsibilities.”

Like many, Dauda believes that his experiences of migrating have generated an attitude of prioritising his children’s education and family responsibilities. When this is compared to the researcher’s own observations (expressed in the extract below), there is a stark contrast appears between the prioritisation of the money earned from watermelon farming and that gained through migration.

I was sitting at a small drinking spot in Farfar with a few locals and two men stumble across the field towards where we are sitting. They start singing and laughing as they approach, clearly both enjoying themselves, but also presumably having had a few calabashes of pito today. As they arrive, one man starts dancing to the fast-paced Bimoba music booming out of the speakers while the other pulls out a small wad of bank notes and offers a 20 cedi note (around 5 Euros) to the girl who is in charge of the drinking spot whilst her father is in Garu. As the man slips his stash of cedis back into his pocket, the girl comes back with four large bottles of beer - one for each of the new arrivals, the remainder go to two other men sitting beside me. The man sitting next to me starts talking to the men in Moar and asking them why they are so happy. They explained how they have sold all their watermelon today and are now having many drinks to celebrate.

(Extract from Journal of Observations, Jonathan Porter, 2015)

Although it must be highlighted that this is not necessarily representative of all dry season farmers in Farfar, the culture and expectation that a seasonal migrant must come back with something (financial or physical) for the family was not a concern for these watermelon farmers.

Having one or two members from a household travelling down south during the dry season helps to retain the food produced from the rainy season harvest. John, a nurse who lives in Farfar but works in the local town nearby suggests that it is one of the main reasons people travel from the area;

“Most of them in dry season you see them travelling fast-fast because they don’t want to use what they have got in the house here, the harvest, they don’t want to sell or eat that one.”

Rather than having to eat the stores, or sell them to pay for other household costs, they can be retained to eat or sell during the leanest times - the months before the next rainy season harvest (when the

market price is also traditionally higher due to low supply). The act of seasonal migration is therefore in itself is an example of a flexible, forward-thinking decision and enables the household to prioritise the future welfare of the household.

7.4 Institutions and entitlements

Increasing access and entitlement to the resources necessary for adaptation is especially important within the most climate vulnerable communities like Farfar, which are traditionally highly marginalised and for whom access to these resources is often limited or unavailable.

As the findings presented in this chapter demonstrate, seasonal migration provides people from Farfar with access to resources covering all areas of the household asset base which are either limited or unavailable locally. Through the strong social networks that exist, the local groups and organisations, and the culture of wealth sharing in Farfar, these resources are able to spread thereby increasing access and entitlement and building adaptive capacities across the community.

Seasonal migration also enables people to become more empowered to make decisions that affect them and their household. A good example of this is Margaret, quoted earlier, who has set up her own business in Nachinton making and selling kenkey and taken up a position as woman's leader in the local church. She discussed how as a result of this empowerment from her experiences of migrating she now makes many more decisions in the household and the community. Margaret also shares her experiences and encourages her neighbours, in particular other women, to be more active in the community and to earn an income for themselves;

“I even tell my colleagues [female friends], my husband and others around here [in Nachinton], this is what is happening down there. I tell them the things I learnt from that place, like let's all of us get jobs.”

Equal access to the resources necessary for adaptation is a crucial element to this component of adaptive capacity. This sense of empowerment that some women feel from travelling enables them to lay claim to these resources and may contribute to gender equality in the community. Indeed, both women and men have discussed how seeing new places and spending time with different people has altered perceptions of the roles of men and women within the family. Paul, from Bantafarigu, indicates how this has led to a change in the way he treats his wives;

“I saw that over there people have been supportive, men have been supportive of their wives, so I have also come to also emulate that example here.”

This is elaborated on further by Dinwaak, a young female seasonal migrant from Farfar;

“The family relationship over there sometimes is different from the family relationship here. For instance, men give upkeeping or housekeeping allowances to the women to prepare food. Also, some men can prepare food if the woman is busy. But here, those who are not travelling, my parents as an example, I have never seen my father given money to my mother to go and buy ingredients. My father has never bought soap for the children to bath, all these responsibilities, most responsibilities are on my mother. The south is not like that, so I have learnt [different] family relationships there. So, it means that when I marry, I will be able to tell the husband ‘this is how families should live.’”

If the experiences men and women have through seasonal migration can improve the equality between men and women, building more equal gender institutions in Farfar, this may help to strengthen household adaptive capacity. This seems especially effective, not just as this behaviour is learnt organically through migrants’ experiences, but in particular because it does not just empower women to acknowledge and claim their rights, but also shows men different, more equal ways of treating women and teaches both the benefits of shared family responsibilities.

Summary

A brief summary of the positive impacts of seasonal migration on adaptive capacity discussed in this chapter is presented in Table 4.

The positive impact of seasonal migration on adaptive capacity						
Physical Capital	Purchase new physical assets (Table 3, p44)	Saving the harvest	Gifts & donations from friends & family in south	Gifts and donations to wider community	Investment in physical assets for common use (borehole)	
Human Capital	Education	Health	New skills (e.g. language)		More robust housing	
Social Capital	Maintain existing relationships		Build new relationships	Join new groups & organisations	New social capital in south - 'multiplier'	
Natural Capital	Knowledge about existing natural capital (e.g. using wood to roof the house and not buying it)			Capacity to exploit existing natural capital (e.g. preparing charcoal)	Acquisition of land (in south & north)	
Political Capital	More confidence in claiming rights			More politically active		
Knowledge, information and innovation	New farming inputs (seeds, chemicals)	New farming techniques & practices (fencing, cutlass)		Other new activities for food & income (hunting, okada)	Spread of innovative behaviour	Breeding culture of innovation
Flexible, forward-thinking decision making	More planned and forward-thinking household spending			Gain knowledge of new adaptation options which informs better decision making		
Institutions and Entitlements	Access to resources for adaptation not normally available to northern Ghanaians		Empowerment (women & others) as a result of migration experiences		More equal family relationships	

Table 4: Summary of the positive impact of seasonal migration on household adaptive capacity

Conclusion

Seasonal migrants travel to find a source of income otherwise unavailable in Farfar but they return with so much more. This chapter has shown that one individual from a household seasonally migrating can enhance every component of adaptive capacity in the LAC framework, providing a significant boost to their household's ability to adapt to climate change. The ripple effect that this impact has, supported by the strong social networks that exist in Farfar, ensures that the impact does not rest just within one household, but spreads out across the community.

John from Farfar even went as far to suggest that "when they travel and they come back, that's why the community is developing". With the significant boost to the household resource base and the fuelling of innovation in the community combined with better prioritised decision-making and creating more equal institutions, it is perhaps easy to see how he might come to that conclusion.

8. The maladaptive impact of seasonal migration on adaptive capacity

To provide a thorough analysis of the impact of seasonal migration on adaptive capacity, a balanced perspective is required. While the previous chapter demonstrated the enhancing effects of mobility on adaptive capacity, this chapter presents the characteristics of seasonal migration that diminish capacities to adapt to climate change. In doing so, this chapter contributes to the analysis provided in the previous chapter to answer sub-questions 4 to 8 (see page 18).

8.1 Household asset base

This research found fewer maladaptive impacts of seasonal migration than those which enhance adaptive capacity discussed in the previous chapter. Of course, in itself this does not mean that seasonal migration has a more positive than negative effect on adaptive capacities. However, due to fewer findings that affect the household asset base and because often more than one household capitals are often affected, the negative impacts of seasonal migration on the household asset base are presented as one discussion rather than distinguishing between the impacts on the different capitals to the extent found in the previous chapter.

The first and simplest way in which the household asset base is diminished by seasonal migration is in the financial capital spent on the travel fare. “Travelling up and down is a challenge, it’s a waste of money” declared one man from Bantafarigu. Certainly, this is a cost people would not have to pay if they were able to find income generating activities locally. Furthermore, there is the risk that a seasonal migrant pays to travel but finds no work. Samwell from Jangkuan spoke of his household member’s recent troubles; “my brother just migrated about a month ago because he had no dry season farming land... and he called me and said ‘there are no jobs so what can I do?’”

The negative impact of not finding work when migrating on financial capital is proliferated by seasonal migrants being unable to afford the fare to return home. This sometimes results in family or friends sending money down for the migrant to return home. If there is no money within the household to cover the cost then often money is borrowed or earned from selling food stores, reducing the physical assets they hold. Not having the financial resources for the fare home, and also not having earned enough to pay for the farming inputs or school fees, or any other planned expenditure, can also result in seasonal migrants returning home late. In the case of dry season migration, this results in not returning home in time to prepare the farmland before the rains start. If returning late during rainy season migration, they risk spoiling the whole harvest. Indeed, migrants returning home from their

travels late appeared to be one of the main concerns related to seasonal migration, as highlighted by Paul from Bantafarigu; “sometimes I come home very late and it affects me a lot in my rainy season farming.” He went on to explain exactly how this affects his rainy season farming;

“When I come home late, I cannot compare myself to those who were around to prepare their farmlands while waiting for the rains. So most of the time it affects my yield. I plant late and that means the yields are low”.

Clearly, this has a significant negative impact on Paul’s household. With little or no other income, a low yield not only means diminished physical assets and potential financial capital that could be acquired through selling food stores, it can also severely impact human capital. Jacob from Bantafarigu stresses the human impact on his household; “if you come from south and it is late, you are not able to farm to get good yield, there will be hunger in the house”.

In the case of students travelling during the holiday periods, returning home late affects their education and thus depreciates human capital in the household. This is something which the headmaster of the Junior High School in Farfar highlighted as a concern, “we try to discourage the students travelling because it can be damaging for their education, but some still do”. He did however insist that it is not as much of a problem in Farfar as it used to be, partly aided by the increase in the perceived value of education amongst parents in recent years.

The local groups and organisations that have been discussed previously (VSLAs, funeral contributions groups, religious groups etc) in Farfar can also be affected by their members travelling even on a seasonal basis. Dinbian, a non-migrant but member of a local VSLA group from Farfar points out that there can be a “low amount of weekly contributions because the person is not there”. If a group is comprised of many seasonal migrants then this can have a negative impact on the financial capital available to other members of the groups and ultimately on the ability of these groups to operate effectively all year round. To combat this, family or friends usually contribute on the migrants’ behalf. However, this is not always possible, which sometimes means members have a large bill to pay upon their return. If the bill is too high “sometimes there are dropouts”, Dinbian said, “they can ask you to drop out.” These groups are a vital part of the wealth sharing culture in the community that enables people to cope with and adapt to climate change. Whilst members dropping out as a result of seasonal migration (directly or indirectly) is rare, should it occur, it would be highly damaging for the household asset base, to their ability to make flexible, forward-thinking decisions and to the institutions that enable equitable access to the resources required to adapt in the community.

A long list of physical assets that were gained as a result of mobility could be produced from the findings presented in the previous chapter (a snapshot of which is provided in Table 3 in 7.1). However, as one ex-seasonal migrant from Jabdawuur stresses, this is not the case for everyone;

“I didn’t come back with anything! If I had come with something I would point the finger at it. Only my health that I brought back, good health.”

As well as not gaining physical assets, existing physical resources can deteriorate due to the absence of those who are responsible for their upkeep and maintenance. Paul from Bantafarigu, explains that;

“Maybe by the time you come back, something that you would have fixed... like the roof, or buildings. Things that you could have done before the [rainy] season begins, you are not there to do that.”

As the findings presented in Chapter 6 showed, the primary seasonal travellers are male youths - the same demographic as those responsible for maintenance of the buildings. Indeed, the traditional compounds, composed of many small circular mud buildings with dried grass roofs and often with some rectangular mud buildings with corrugated iron roofing, in which almost every household in the Farfar area live, do require regular work to maintain. In the researcher’s experience there was a lot of building work going on during the dry season which is also the time of year when the majority of seasonal migrants travel. In addition to weakening household physical capital through damaged houses not being repaired in time for the rainy season, human capital can also be affected by not having sheltered sleeping areas. If food stores suffer because they are no longer sheltered then, once again physical and human capital can be further diminished. These problems are exacerbated by the increasing unpredictability of the rains and the onset of Harmattan¹⁹ during the dry season, as expressed by Ali from Farfar;

“Assuming all the youth migrated in the [dry] season and with Harmattan there is a fire outbreak. If there is a fire outbreak and there are no youth in the community, who is to go and put the fire? It has to do a lot of harm, maybe somebody’s house is burning!”

In 2014 one of the houses in the community did catch fire during Harmattan and was fortunately extinguished swiftly by some nearby male youths who do seem to bare this responsibility. It is feasible to assume however that if many of the male youth were travelling during this period, more damage could result from this and any other fires that might break out.

¹⁹ Harmattan is a dry, sandy storm that blows south into northern Ghana (and across much of West Africa) from the Sahara Desert during the dry season (December to March) every year. During this time, and coupled with extreme temperatures reaching 45 °C, there is a serious threat of fires breaking out, spreading quickly and for houses to be damaged or destroyed.

The absence of strong young men is the source of a number of general complaints about the negative impact of seasonal migration on the household. “There isn’t human support” explained Konduuk, a grandmother from Farfar, speaking of the dry season during which the young men in her household work on cocoa farms in the Ashanti region. “If I am sick and I need to go to hospital, there is always problems for me to go. They have to go and call somebody for me from some house to pick me to go to hospital.” One young man, a seasonal migrant from Sinakuan, echoed Konduuk’s thoughts from the viewpoint of someone who travels;

“There is a problem if I’m not here. I am the active son of the family, and so when I’m not around, sometimes they want to send someone to go and do something, solve problems somewhere, they can’t find any active person to do that.”

The strong social networks in Farfar ensure that dependents who are without a young “active” male in the household are not stranded and without assistance. However, it can be a problem, especially in the dry season, and in particular for those households residing in the smaller or more sparse sub-communities, and for those who are geographically on the periphery of the community.

As referred to earlier, the principle of communal labour is strong in Farfar and during the research period, a small health centre was being built by a communal labour force comprising of young men from the community. Adams refers to this project to explain the changes in seasonal migration in Farfar below;

“As the youth are not going down south [during the dry season], we have a lot of people around the community... Compared to 2000 and 2003, if it was to be that time, I know this communal labour wouldn’t be done, there would not be enough youth to do the work”.

Indeed, if there were no youth in Farfar during this time, the health centre would not have been built. This would prevent the benefits of equal access to at least a basic level health care for many households which this project will create, benefits which would obviously contribute to building household adaptive capacity. The same problem of a lack of youth would be a concern for those who rely on the principle of mutual assistance for labour on their farm. Without this assistance they would be unlikely to produce a good yield, affecting the amount of food the household has to eat and sell, plus their ability to make forward-thinking decisions.

Building and maintaining relationships is a key contributor to the positive impact mobility can have on capacities to adapt to climate change. Through tapping new sources of social capital, seasonal migration can significantly contribute to enhancing household adaptive capacities in Farfar. Nonetheless, as discussed by Jacob below, not all relationships are ‘good’ relationships;

“Some of the relationships [I created] were not good to me. A friend can lure you into certain activities that will not be good for you in your future... Others can engage you into drugs and at end of the day, you become a drug addict. I’ve seen other friends who have joined those groups and most of them are now useless! I know some of my brothers, family brothers [cousins], who have refused to come home because they have joined those friends in the south.”

Migrating to a new place and meeting new people undoubtedly provides people from Farfar with new opportunities, many of which are unavailable, some unknowable, before travelling. Some of these opportunities may provide something positive which could contribute to the long term prosperity, development and adaptive capacity of a household, and there are others which will not. When seasonal migrants choose the latter, this can act as a drain on household resources or, at the least, not result in vital contributions that were expected when that person travelled. This can become a significant loss of human capital for the household, a loss of a household member who might have been able to contribute in many ways to the collective resource base and to the household’s wider capacity to adapt to climate change.

As detailed in 6.1, most seasonal migrants from Farfar labour on farms or work in the (largely illegal) gold mining sector, both of which can leave individuals vulnerable to health and safety risks and can lead to exploitation. Paul from Bantafarigu explains how he was mistreated when working on a cocoa farm in the south;

“The work I was doing was a dirty job... some small boy could give you work to do and the person will act as if you are nobody, telling you ‘you are not serious, you are a stupid person’, they are insulting you!”

Olivia from Jabdawuur who returned from the Ashanti region just a couple of months prior to participating in this research has recently become a widow after a cocoa tree fell on her husband whilst he was working. Extreme cases like this are, to the researcher’s knowledge, rare. However, the informal and transient nature of the work leaves seasonal migrants open to exploitation and without any form of compensation in tragic circumstances such as Olivia’s. Within Ghana’s gold mining sector in particular, where illegal activity amongst prospectors is routine, exploitation is rife, particularly amongst children (Anas, 2011; Al Jazeera, 2015).

Whilst this is potentially damaging for an individual (and therefore human capital) is not totally clear how the impact of this exploitation might affect household adaptive capacity. Rare cases like Olivia’s clearly have a severely negative impact on her ability to provide for her children now and in the future, and as such she has become more reliant on other households for support which affect their household

asset base as well. In less extreme cases it may even present a trade-off between individual sacrifice and household adaptive capacity and, in those scenarios where the work seasonal migrants do is difficult but there are no significant long term negative consequences, they may even provide a valuable learning experience and affect how individuals prioritise decision making as discussed in 7.3.

8.2 Knowledge, information and innovation

The innovations which occur in Farfar as a result of seasonal migration may stimulate other changes in the community which inhibit some community members' access to resources necessary for livelihoods and adaptive capacity. For example, the fence that Kayel was building, referred to in 7.2, may prevent pastoralist herders from reaching sources of water and food vital for the health and wellbeing of their animals; crucial for the herders' livelihoods. If so, this innovation could also heighten the tension and conflict which already exists between settled and pastoralist communities. Whilst no pastoralists were spoken during the research process, this fencing has the potential to lock in common goods and resources needed by other households and communities.

Whilst this is the only innovation recognised to have potential negative effects on other communities, it is important to acknowledge that these innovations are new stimuli resulting from mobility that may (directly or indirectly) causes changes to the quantity and quality of, as well as access to, vital resources in the area. Ultimately, affecting other individuals', households' and communities' livelihoods and capacities to adapt to climate change. Indeed, it is possible that the chemicals and fertilisers used by seasonal migrants for which the access and financial capital to purchase are increased as a consequence of mobility, could be harming the land and water. Whilst this is purely hypothetical, since this research showed no obvious signs of environmental degradation as a result of these chemicals, it is an area that warrants further research.

Not being present in Farfar during the dry season may mean that some seasonal migrants miss certain opportunities to build their knowledge of adaptation options. Through the Participatory Scenario Planning (PSP) meetings with CARE, PAS-G and the Community Monitors living in the Farfar area, the ALP intervention supports the distribution of information regarding upcoming weather patterns (for example the onset and cessation of rains) influencing which crop to sow and when to plant. In addition, information is provided which enables greater access to markets for other farming inputs (e.g. fertilisers and weedicides) as well as the introduction of new crops. Janet, from Farfar explains how this information has helped her household;

“They told us about new varieties of crops... early maturing crops, early maturing beans, soya beans... they tell us which crop is good for maturing early and which is drought resistant. They are able to determine and select. It helps a lot... we got a bigger yield.”

Seasonal migrants however, who may not be in Farfar at the time of the distribution of this information, will not have access to it. Thus diminishing knowledge and understanding of future climate changes, the knowledge and capacity to implement adaptation options, and the ability to make flexible, forward thinking decisions. Ultimately, depreciating household adaptive capacity. Whilst it is possible that other household members can go to the meetings to receive this information on behalf of the household; logistical difficulties, those responsible for the farming not being present themselves, and not being reliably informed of when these meetings will occur mean that, as one dry season migrant from Bantafarigu highlights; “sometimes I get the information, but not all the time.”

Missing out on information about adaptation options extends to other forms of training that might occur through the ALP intervention or any other NGO programmes in the area. Indeed, these are often run in the dry season, prior to the upcoming rainy season, which is also when most seasonal migrants travel to other locations. Joshua from Sinakuan explains that “sometimes people come to do some training with the groups. If I’m not there I have lost, like that. I will not get that education.” Depending on the topic of the training, and whether or not another household member could attend, not being present in the community could inhibit Joshua’s household from building their adaptive capacity through any of the five components of the LAC framework as a result of this training. This also affects equal access and entitlement to resources and knowledge necessary for adaptation and means that he will miss opportunities to influence various aspects of community life for which these meetings are vital, reducing the political power and therefore political capital of those who travel. Albeit, this could increase political capital of other household members who do not travel if they attend meetings on the migrants’ behalf, potentially empowering those who would not traditionally be politically active (e.g. women).

8.3 Flexible, forward-thinking decision making

Some of the ways in which a household’s ability to make more informed and proactive flexible, forward-thinking decisions can be diminished by seasonal migration have already been highlighted in this chapter. One further potential negative impact of seasonal migration is again related to an individual not returning home in time to prepare the farmland. In itself, by coming home late, seasonal migrants are unable to make the best decision regarding the rainy season farming for the household.

Albeit, this would only be the case if there were not any other members of the household capable of preparing the farmland prior to the start of the rains.

The diminishing effect on adaptive capacity may be compounded by the resulting poor yields which prevent the household from having the luxury of thinking about long term prosperity or development. A smaller harvest will mean there is less food to go around and none to sell for income, thus depreciating human and financial capital. At times of crisis, households must think in the short term, “how to get the next meal” as John from Farfar puts it, which may lead some to sell livestock, threatening the long term security of the household asset base in the need of solution in the short term. This diminished ability to make flexible, forward-thinking decisions leads to behaviour indicative of ‘erosive adaptation strategies’ corroding the household’s asset base and their capacity to adapt to climate change in the long term (Warner and Afifi, 2014). This research was not able to produce figures showing how often incidents like these occur. Whilst, there is no doubt that this has happened Farfar, scenarios where food security becomes a serious concern, or when households are forced to sell assets as a result of seasonal migration are a rarity and not the norm.

8.4 Institutions and entitlements

The lack of young men in Farfar caused by seasonal migration reduces the pool of workers available for communal labour. If the youth were not present in the community, the health centre in the community - a product of communal labour - would not have been built, preventing the establishment of an institution which creates equal access to healthcare in the community. It also prevents equal access to farming labour which some households might rely on more than others. Indeed, there was one respondent who, because of the travels of his neighbours, had to reduce the amount of land he would farm because he no longer had access to the labour force that he had previously. The fact that the neighbours started traveling also meant he did not have access to a bullock which the neighbouring household had during the previous seasons. As a result of these two key changes in his access to resources for farming, he produced a lower yield compared to previous seasons which meant there was none left to sell to generate income.

One key negative impact of men being the most likely to seasonally migrate is the loss of the household head for the family in Farfar. The household head is a very important figure for families in the community. Not having the household head present can affect the household’s standing in the community and their capacity to lay claim to their rights. Just as a widowed or divorced woman may struggle with some aspects of life in the community, it can affect the household’s ability to access certain resources necessary for livelihoods and adaptation. In particular, not having access to the same

levels of social capital in the community can act as a barrier for families to learn of, and be invited to, meetings to discuss adaptation options. Thus, not having a male household head present can marginalise the household and diminish the equal access and entitlement to sources of information and other capital necessary for successful adaptation to climate change.

Whilst it is feasible to assume that this could create new, more inclusive institutions where women and non-household head individuals become more active in the community, no evidence of this was found throughout this research period. The creation of these new institutions may be inhibited by the fact that farmers, and as such providers, are always men. Even when NGOs successfully encourage women to farm in Farfar, they are typically given a small ‘token’ portion of land to work alongside the primary farmland worked by the men. The firm culture of men as the providers in Farfar means that changing male and female roles and responsibilities is difficult and the creation of institutions that create more equal entitlement would be a very slow and incremental process.²⁰

Summary

A brief summary of the maladaptive impacts of seasonal migration discussed in this chapter is presented in table 5.

The maladaptive impact of seasonal migration on adaptive capacity				
Financial Capital	Cost of travel	Not finding work, not having funds to return & borrowing money or selling physical assets to pay the fare		Fewer contributions to groups (e.g. VSLAs)
Physical Capital	Low yield due to late return		Repairs to buildings not carried out	Disasters not averted quickly because lack of male youths
Human Capital	Students return late	Leaving dependents without support and assistance (e.g. to go to hospital)	Hunger from poor harvest due to late return	Lack of youth for communal labour
Social Capital	‘Bad’ social capital	Weaken relationships and local groups (VSLAs, communal labour, funeral contributions)		
Knowledge, information and innovation	Missing info about future weather and adaptation options		Innovations creating exclusions to natural resources	
Flexible, forward-thinking decision making	Late return - forced into making decisions focussing on short term at expense of long term		Dropping out of VSLA and other groups	
Institutions and Entitlements	Damage to local groups and organisations		Lack of youth for communal labour	Marginalisation through loss of household head

Table 5: Summary table of the maladaptive impact of seasonal migration

²⁰ Longer term, more ethnographic research in the community would be necessary to more comprehensively explore these and some of the other dynamics mentioned in this chapter related to inter and intra-household power relations and how seasonal migration affects community structures, institutions and entitlements.

Conclusion

This chapter demonstrates there are clearly risks involved with seasonal migration which can threaten household adaptive capacity. Many of the positive impacts discussed in the previous chapter are not possible if the migrant does not find employment. Furthermore, if seasonal migrants cannot find work, they run the risk of diminishing the capacity of their household to adapt to climate change. Whilst the strong social ties within families, clans and sub-communities provide a safety net which may ensure the full weight of the effect on adaptive capacity is not felt by an individual household, sharing the burden may limit the growth of other household's adaptive capacities.

The impact of male youths not being present at home in Farfar can diminish adaptive capacity through a variety of different means, and may result in a decline of any number of the characteristics of adaptive capacity in the LAC framework. This suggests that, in order to avoid a diminishing effect on adaptive capacity, the decision to seasonally migrate must be dependent on the number of able individuals and the number of dependents. However, a household with a high ratio of dependents to fit and active individuals will also be highly reliant on the able members in a financial sense as well as for 'human support'. This is the predicament some households in Farfar are burdened with. As a result, income generating opportunities in the local area, in particular during the dry season, when there are traditionally little or no prospects of farming or earning an income, are deeply welcomed by residents in the community.

9. Analysis and discussion

This chapter marries the empirical findings presented in Chapter 6 with those in 7 and 8, to answer the primary research question; *how do changes in patterns of seasonal migration affect household capacity to adapt to climate change in rural northern Ghana?* This is followed by a discussion of what these changes mean for the adaptive capacities of different societal groups in Farfar, both in the short and long term. Finally, the chapter concludes by discussing the implications that the findings of this research have for rural climate vulnerable communities, autonomous adaptation strategies and planned adaptation interventions.

9.1 What do these changes in seasonal migration mean for household adaptive capacity?

Chapter 6 of this thesis illustrated that seasonal migration fell in more than half of the surveyed households in Farfar in the last ten years, while chapters 7 and 8 highlighted that there are a significant number of ways in which mobility can positively and negatively affect household adaptive capacity. Based on these findings, how does this reduction in seasonal migration affect household adaptive capacities in rural northern Ghana?

Without seasonal migration, many households in Farfar would struggle to earn an income to pay for healthcare and education, to improve the homes they live in and to learn about new and innovative livelihood and adaptation options. Additionally, they would be unable to save the harvest to eat or sell later, or to build social capital which bridges the inequalities between people in the north and south of Ghana. However, by seasonally migrating, households risk low yields due to returning home late, leaving the vulnerable without support and potentially weakening local groups and organisation. Simultaneously, seasonal migrants spend money on travelling despite often not being certain they will find work which, if they do, can be exploitative. As such, there are clearly cases to be made for the decline in seasonal migration in Farfar being both positive and negative for households and their adaptive capacity.

However, the implications of a loss of the aforementioned positive impacts of seasonal migration on adaptive capacity seem more significant than the gains from staying in Farfar. As other authors have highlighted, innovating (small or large scale) is vital for communities to successfully adapt their livelihoods to climatic stimuli (Rodima-Taylor, 2012; Scheffran et al., 2012). As such, to lose the primary source of knowledge and information which fuels and stimulates innovation will severely inhibit their capacity to adapt. This innovation is also very difficult to replace. NGO interventions may

be able to introduce new seeds and provide access to markets for other inputs contributing to adaptive capacities. Nonetheless, they are unlikely to introduce the kind of new economic activities and innovative behaviour that has been spurred by migrants' experiences. In addition, they cannot replicate individuals seeing and learning new practices themselves to come home and reproduce them.

Rather than being instructed and relying on handouts of information, people are encouraged to do for themselves. This breeds a more entrepreneurial culture of innovation and empowerment, fuelling adaptation and development. It also departs from the giver-receiver relationship where community members take up a role as the 'needy', or as victims of their situation, and the NGO as the provider - roles which are eventually re-enforced by both sides (a dynamic which is evident in Farfar). This helps to avoid dependency. The empowerment to take control of their own situation and to take decisions and make changes that affect their own lives is particularly important for the more marginalised groups (e.g. women and those living in small and peripheral sub-communities) whose empowerment can enable these individuals and their households to lay more claims to their own rights and provide more equitable access and entitlement to resources necessary for adaptation. Despite the proportion of seasonal migrants that are female increasing, the majority of seasonal migrants are still male and as such this empowerment effect could be having a disproportionate impact on men. The fact that some male and female seasonal migrants spoke of their experiences resulting in a more equal relationships and better treatment of women may to some extent offer some balance to this.

This culture of learning and providing for oneself or one's own household is particularly important in the long term. As with all interventions, there is a life span and the ALP intervention in Farfar is coming to the end of its five year term at the current time of writing. After this five year period, the NGOs will move on to other priorities. There may be some long term impact (for example improved access to markets may be maintained) but there will inevitably be less support and no new knowledge to stimulate innovation in the community. As such, mobility seems to provide a more sustainable, long term solution for Farfar to receive knowledge about adaptation options to fuel innovation. On this basis, this research is in harmony with that conducted by Scheffran, Marmer and Sow (2012) in asserting that policy which creates an enabling environment for local innovation through mobility can transform migration into a highly successful adaptation strategy.

Seemingly totally irreplaceable is the new social capital created through mobility which links northerner Ghanaians to southerners. Bridging the gulf created by decades of marginalisation is hugely important as it links households in Farfar to people, resources, markets and industries which simply do not exist at home and that are likely to be less vulnerable to climate change. This ultimately provides a vital pathway for adapting, for development and to enable upwards social mobility for

northern Ghanaians. The strong social ties in Farfar also mean that the positive outcomes of bridging social capital across Ghana can spread throughout the community. Losing the mobility which enables the creation of these relationships could severely impede household adaptive capacities.

9.2 Shrinking mobility but not a static community

The analysis above highlights that shifting from a mobile community to one which is static could have damaging effects to long term household adaptive capacities for rural northern Ghanaians. However, while seasonal migration has reduced in Farfar, it has not stopped altogether. Realistically, households need not have many members that seasonally migrate to benefit from the adaptive capacity strengthening outcomes of mobility discussed in Chapter 7. As such, a decline in the number of seasonal migrants in a household may not always result in diminishing adaptive capacities. For example, in one of the surveyed households, seven out of the nine members used to seasonally migrate. One of these seven began dry season farming and so now he remains during the dry season. This is unlikely to have reduced the ability of his household to adapt to climate change. In fact, the initiation of dry season farming and the extra income that this can produce, alongside the benefits mobility can deliver, may contribute further to enhance adaptive capacity. Simultaneously, one individual remaining at home helps to provide the 'human support' so often mentioned as a negative impact of seasonal migration, and so mitigates some of the potential maladaptive impacts of travelling.

In another household of nine, one member seasonally migrated ten years ago and today this has reduced to zero. This gives this household no opportunities to build social capital with those in the south or to learn new skills and knowledge of adaptation options from other regions, thereby reducing the potential of this household's adaptive capacity. Compounding this is the fact there are more mouths to feed with the harvest which cannot be saved till leaner times, reducing their ability to be forward-thinking with their priorities and the decisions they make. Although no data was captured on the makeup of this household, it also seems unlikely that all nine would need to stay at home during all of the seasons to support dependents and to mitigate the maladaptive impacts that can result from seasonal migration.

Clearly there is a balance to be found between all of the physically able members of a household seasonally migrating and all remaining in Farfar. Nonetheless, for the 13% of households where seasonal migration has ceased altogether over the last ten years, the removal of mobility as an adaptation strategy, according to this researcher's interpretation of the data presented in this thesis, will reduce their ability to enhance their adaptive capacity. For the 43% of households where seasonal migration has reduced but not stopped, there is still the potential to reap the adaptive benefits of

seasonal migration whilst mitigating some of the maladaptive impacts. Reduced mobility does however mean that the household is more reliant on a fewer number of individuals to deliver the positive outcomes of mobility to the household and as a result there is logically a reduced likelihood that the positive outcomes will be realised and a possibility that the positive impact may be slightly weakened by this.

It also must be acknowledged that a multitude of other factors will determine the extent of the impact of a reduction in seasonal migration on adaptive capacity, some of which may rely on good fortune²¹. The chances of seasonal migration producing adaptive and not maladaptive effects on households can of course be influenced. Facilitating the creation of relationships that connect people in the north to those in the south, creating networks advertising where work is available, and targeting the exploitative working conditions in the cocoa and gold mining sectors are just a few areas where policy could enable the negative impact of seasonal migration to be mitigated and the positive impacts to be maximised. Of course, to unlock this adaptive potential requires the will of agencies who have it within their power to make these changes. In Ghana, there is some way to go before the government shifts from its current position of discouraging mobility in the country, however, civil society could play a significant role.

Ultimately, the access to resources for adaptation that a household loses from a fall in mobility in Farfar appear of greater importance than the gains made from reducing the maladaptive impacts. However, as this chapter has already eluded to, the two are not mutually exclusive. The gains from mobility can still be achieved alongside mitigating the maladaptive impacts and benefiting from newly created local opportunities when they arise.

9.3 The sustainability of dry season farming in Farfar and a combined approach to building adaptive capacity

As Chapter 6 highlighted, the key reason that household seasonal migration has reduced is that more people are dry season farming instead of migrating since the introduction of the watermelon. However, it is questionable as to how sustainable the practice will be. The land near the river that dry season farmers use to farm watermelon is not in good condition. Whilst some can make decent profits out of the crop, there is plenty that goes to waste because the land is not fertile enough to produce a good harvest. This is part of the problem of limited access to land in the area; there is simply very little

²¹ This includes the number of dependents and physically able individuals, the reasons that people stay (e.g. income generating opportunities like dry season farming), where those that still migrate go, how long for, whom they meet, what they do, if they get work quickly and how much they earn.

that supports productive farming. As a consequence, the already arid and unproductive land is being over farmed which will lead to soil erosion and further degradation. Indeed, there is also the possibility that the chemicals used for dry season farming may be damaging the land affecting the sustainability of the practice as a whole. Whilst this research did not intend to fully analyse how sustainable dry season farming is, future research studying this in depth would be of considerable value. It could even be possible that the introduction of new technology, or a new innovation could improve the sustainability of dry season farming. Indeed, when asking those in the community what would improve their situation, the response is almost always the building of a dam to bring the water closer to the community and increase the amount of land that can be farmed in the dry season²². Although at present, this seems a distant hope.

Even if dry season farming could continue for many years, climatic shocks could affect the watermelon in turn livelihoods and adaptive capacities. Furthermore, links to those in the south may have become weak or have been severed so beginning to seasonally migrate again could become a riskier strategy than it once was. Whilst the cocoa and gold mining sector will be to some extent open to shocks, both markets are strong and they exist in locations less exposed to climate change than farming in the north. To maximise household adaptive capacity and to increase the propensity of strengthening adaptive capacity in the future, perhaps the optimal scenario is for households to dry season farm (or undertake other economic activities locally in the dry season, if available) alongside seasonal migration. This would diversify livelihoods whilst ensuring that the household benefits from the positive adaptive impacts of mobility and mitigate the potential maladaptive effects.

9.4 ALP and enclaves of adaptation

The location of the sub-communities was highlighted as a key factor in determining a household's access to dry season farmland, and the extent to which seasonal migration has reduced. Indeed, the sub-communities with the highest number of seasonal migrants as a proportion of the population are those furthest from the river, while those that migrate the least are the closest.

Since some households are excluded from dry season farming, a divide could develop between those who travel and those who dry season farm. This is, to some extent, also a divide between the sub-communities closest to the river, and those furthest away. Whilst there is the potential for this to cause conflict and unrest between these two groups, it could also lead to the development of enclaves of knowledge and information about adaptation options. Those households in the sub-communities

²² See Appendix 3 for a copy of a letter written by the local Assemblyman which was sent to a number of government and non-governmental agencies requesting the construction of dam.

furthest from the river, and with the highest proportion of their populations seasonal migrating, are more likely to bring home innovative ideas about new ways of farming, new economic activities or new crops, and to build social capital with households in the south of Ghana. This could create a pool of knowledge about adaptation options which households in sub-communities closest to the river, and containing the lowest amount of seasonal migrants, may be excluded from.

Currently, the sub-communities in Farfar are not so segregated and marrying between sub-communities is common²³ which may help to prevent a significant partition developing. However, more information is shared within clans and sub-communities than the wider community and the geographical separation, as well as the social differentiation created by those furthest from the river continuing to migrate and those closest dry season farming instead, could allow enclaves of adaptation to develop over time.

Interestingly, this suggests that the long term adaptive capacities of households who do not dry season farm, could become stronger than those who do. This is despite almost every household spoken to during this research valuing dry season farming over seasonal migration. The longer the watermelon farming continues and the more households rely on it as their source of income in the dry season, shifting further away from seasonal migration as an adaptation option, the more amplified this divide could become. Therefore, one could conclude that the more sustainable the dry season farmland is, the worse the prospects are for the adaptive capacity of households that do dry season farm.

The fact that the ALP intervention has supported and encouraged dry season farming in Farfar, through the provision of water pumps (including training in how to use them), the VSLA groups (encouraging the investment in dry season farming inputs) and access to markets for other inputs, may have contributed to this political economy of adaptation. Whilst the intervention has enabled a profitable livelihood and adaptation option for some households in the short term, in the form of dry season farming, it may have also contributed to these exclusions which, in the long term, after the NGOs depart, could threaten the adaptive capacity of the households who were the initial target beneficiaries.

The work of the ALP in Farfar must be viewed in full. The provision of future weather information (including the beginning and cessation of rains), access to new certified seeds, the initiation of some of the VSLA groups in the community and the training and advocacy programmes they have run in the community all deliver positive outcomes for adaptive capacities. Indeed, some of which cannot be produced through mobility. However, while the findings in this research support that which precedes

²³ Inter sub-community marriage is often even encouraged to avoid inbreeding within clans

it in suggesting that “agricultural adaptation initiatives should not assume that they ought to contribute to reduce out-migration”, the opinions of the intervening NGOs do not (Tacoli, 2009). When asked about their thoughts on mobility and adaptive capacity during a discussion with one key member of the NGO behind the programme, it was suggested that outward seasonal migration results in a loss of knowledge to the communities. As the discussion went on they argued that “when they [seasonal migrants] come back they are worse off” and that “it is bad for their adaptive capacity”. Though this was not supported with any examples or research undertaken on the topic and is significantly contradicted by the research which informs this thesis, highlighting that more investigation is needed to explore how research uptake into adaptation policy can be improved.

Although this opinion is representative of what we might expect given that which has been discussed in chapters 2 and 3 regarding migration being either ignored or assumed to be a sign of underdevelopment or failure to adapt, it is concerning. Firstly, because it demonstrates a lack of understanding about what adaptation is and how adaptation works. And secondly, because it indicates a lack of appreciation and comprehension of the adaptive actions that communities undertake prior to an intervention. This is a crucial point because intervening agencies cannot know if adaptation programmes will increase adaptive capacities unless they first understand what communities are already doing to adapt. Understanding how autonomous behaviour impacts household capacities to adapt and how the intervention will affect this behaviour is fundamental to the analysis of an intervention’s ultimate impact on adaptive capacities. Indeed, by constraining or removing these behaviours (possibly unknowingly), even combined with the positive work carried out to improve adaptive capacities, the net result could be a decline in household or community capacities to adapt to climate change, especially in the long term.

In truth, this is broader than whether or not migration is ‘good’ or ‘bad’ for adaptation or whether planned adaptation strategies are ‘better’ than those which are carried out independently since they could and should be able to operate alongside each other. Indeed, there is undoubtedly a need for planned adaptation since autonomous strategies will not be sufficient for climate vulnerable households to effectively adapt to the challenges of climate change (Smit et al., 2001; Adger et al., 2003). The critical element is acknowledging adaptive capacities do not start at zero. Understanding the adaptive behaviour communities undertake prior to the initiation of an intervention should be a pre-requisite of a programme which makes changes in the community, particularly in one that is highly climate vulnerable. As a consequence, the timeframe for viewing the impact on communities should not only be during the programme, nor should it be limited to the current and future impacts. Instead, the timeframe must begin prior to an intervention. This will enable intervening agencies to understand the effect their actions will have on autonomous adaptive behaviour in the long term, to protect

existing adaptive capacities and enable them to more effectively prioritise policy areas to build on and strengthen household adaptive capacities.

9.5 Harnessing mobility and learning from autonomous adaptation

This research has shown that seasonal migration, and in a broader sense, mobility adds considerable value to household adaptive capacities. This is not a new idea, since much has been written about mobility as a form of adaptation (Adger et al., 2003; Black et al., 2014; McLeman, and Smit, 2006; Rademacher-Schulz et al., 2014 amongst others). Despite this prior research, and as demonstrated in 9.4, many behind climate change adaptation interventions seem to either ignore migration or consider its decline to be a sign of development or, in this case, adaptation. This is indicative of our lack of understanding of what adaptation is and how we should do adaptation.

As previously stated, adaptation is not new. All over the world communities like Farfar have been adapting for decades, if not centuries, to various climatic stimuli, often in small and autonomous ways. This shows us that there is much to learn. Undertaking more research where we shine a light on autonomous behaviour will teach us more about what adaptation is and enrich the way we do adaptation. It will also ensure that these autonomous behaviours are part of the process of enhancing adaptive capacities and included in the analysis of the net impact on these communities in the long term. Finally, harnessing the power of mobility and other autonomous adaptation strategies can transform the way we do adaptation. Incorporating these behaviours will ensure that their adaptive benefits are not replaced by NGO programmes but exploited as another tool to enhance adaptive capacities alongside other initiatives, the benefits of which could not be realised without external assistance. Ultimately, this will produce more efficient, effective and targeted adaptation interventions with a more positive net impact for climate vulnerable households.

This is a crucial moment in time to re-assess how we understand adaptation. The urgent need to adapt is beginning to command more attention and sit more equally alongside mitigation on the international climate change agenda. As a result, more development funding is being devoted to adaptation which is likely to intensify following the COP21 Climate Change Summit in Paris at the end of this year. Naturally, the number of NGOs carrying out adaptation projects will rise and so will the number of affected communities. Getting adaptation right and ensuring that the changes planned adaptation interventions make in communities do not have maladaptive impacts, could be decisive in enabling the most vulnerable communities to adapt to climate change.

10. Conclusion

This research has focussed on the adaptive and maladaptive impact of seasonal migration on household adaptive capacities in rural northern Ghana. Drawing on this analysis and combining it with the discovery of how patterns of seasonal migration have changed in the case study community, interpretations have been presented on the implications of these shifts in mobility on household adaptive capacity to answer the following primary research question:

How do changes in patterns of seasonal migration affect household capacities to adapt to climate change in rural northern Ghana?

In the case study community of Farfar, seasonal migration is a vital form of mobility and one which supplies households with many of the essential resources necessary to strengthen their adaptive capacity. This research found that seasonal migration has declined significantly over the last ten years and that this fall occurred primarily because of the renewed interest in dry season farming created by the introduction of watermelon and supported by a community based adaptation intervention in the community.

The implications of this shift in mobility on household adaptive capacities is more complex and ultimately, the answer relies upon the researcher's own interpretation. However, the use of the Local Adaptive Capacity (LAC) framework gives logic and legitimacy to the findings and the interpretations that can be made. The impact of reduced mobility is dependent on many highly localised factors discussed in 9.1 which differ from household to household. The principle areas of concern related to this fall in mobility is in the resulting lack of opportunities households have to build social capital which bridges the north-south divide in Ghana and in blocking the flow of new knowledge and information of adaptation options which is so crucial to fuel innovation in the community. Participating in dry season farming may provide a source of income in the short term, however, due to questions over the sustainability of the practice and more static households not benefiting from the adaptive benefits of mobility, this could come at the expense of long term adaptive capacity. Research which explores the sustainability of dry season farming in Farfar would provide valuable insight into the impact on households and adaptive capacities in the long term.

New opportunities created in the community may replace some of the adaptive benefits of mobility but not all. This thesis argues that NGO led interventions which support or create these new stimuli should not aim to substitute the outcomes of mobility, or other autonomous adaptation behaviours, which strengthen adaptive capacity. It is also suggested that policy which targets new initiatives, the outcomes of which mobility cannot produce (for example, the provision of information on future

weather patterns) and maximises the adaptive outcomes of mobility, whilst minimising the maladaptive impacts, will be most likely to have the greatest impact on building adaptive capacities.

This thesis does not claim that seasonal migration or mobility in general is a panacea for adaptation, nor does it contend that through the benefits of mobility alone will climate vulnerable households be able to adapt to the future challenges of climate change. However, it does argue that more acknowledgement and understanding of autonomous adaptation strategies is needed to ensure that interventions have a net positive impact on adaptive capacity. Through shining a light on the positive and negative effects of seasonal migration, we can interpret which negative elements need to be prevented or mitigated against and which should be facilitated. Further research which explores the adaptive and maladaptive outcomes of autonomous behaviour in climate vulnerable communities will enable us to understand more about the complexities of adaptation and enrich the way we do adaptation. It will also help us to identify gaps - ways that communities cannot adapt without external assistance - and therefore inform where planned adaptation should be targeted.

In Farfar, and other communities in semi-arid rural northern Ghana, the soaring temperatures will continue and they will experience more droughts and erratic rainfall patterns in the coming years than ever before. Like many other climate vulnerable communities in Africa, and more broadly in the developing world, successfully adapting to these changes is critical. With more adaptation funds likely to be available after the crucial Climate Change Summit in Paris at the end of this year, leading to a likely flux of adaptation interventions, this is a pivotal moment to re-assess how we understand and how we do adaptation. Learning from autonomous adaptation, understanding how planned interventions affect these behaviours and how this will impact capacities to adapt in the long term, could be decisive in enabling communities like Farfar to adapt to the challenges they will face, after all, “the only alternative to adaptation, is extinction” (Agrawal and Perrin, 2008).

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Appendix 1

1.1 Bantafarigu-Farfar Household Seasonal Migration Survey Guidelines

Survey Guidelines

- ✓ Aim to complete 25 surveys each (100 in total)
- ✓ **1 survey per household**
- ✓ Split up the communities in the electoral area evenly
- ✓ Stick to allocated communities but try to cover all areas of each community
- ✓ Try to cover people who do and don't speak English, different age groups, and a (roughly) equal number of men and women
- ✓ Stick to the questions but please record any other information which is given
- ✓ Try it out!
- ✓ Agree amongst the 4 exactly how these questions should be asked in Moar to get the required response (to ensure that questions are exactly the same for all surveys)

Name:

Communities: *(assistants write the sub-communities they are surveying here)*

1.2 Bantafarigu-Farfar Household Seasonal Migration Survey (see next page)

Bantafarigu/Farfar Household Seasonal Migration Survey

#	Question	Answer
1	Does the person speak English?	Yes / No
2	Gender	M / F
3	Age	Child / Youth / Adult / Elderly
4	Where do you live?	Farfar / Bantafarigu / Woakuan / Karyieta / Sinakuan / Nachinton / Jabadawal / Jangkuan / other:
5	How many acres of land do you farm? <i>[If none, write 0]</i>	Rainy season: Dry season:
6	Do you own the land that you farm on?	All / Some / None
7	Do you seasonally migrate/travel?	Yes / In the past / Never
8	How many children and adults in your household?	Children: Adults: Total:
9	How many of them currently travel on a seasonal basis?	
10	Are the ones that travel... <i>[If necessary, circle more than one and write numbers of each]</i>	Children / Youth / Adults ----- M / F
11	When do they go? <i>[If necessary, circle more than one and write numbers of each]</i>	Dry season / Rainy season / School holidays / Other:
12	Where do they go? <i>[Town and region]</i>	
13	What do they do there?	
14	10 years ago, how many people in your household travelled on a seasonal basis?	
15	Were the ones that travelled... <i>[If necessary, circle more than one and write numbers of each]</i>	Children / Youth / Adults ----- M / F
16	When did they go? <i>[If necessary, circle more than one and write numbers of each]</i>	Dry season / Rainy season / School holidays / Other :
17	Where did they go? <i>[Town/city and region]</i>	
18	What did they do there?	
19	Why have the patterns of seasonal migration changed within your household? <i>(Only if changed)</i>	
20	If you could do (more) dry season farming, would your household members continue migrating?	Yes / No / N/A <i>[Only if household members currently migrate]</i>
21	How many people from your household have migrated permanently?	
22	How would you describe the overall impact of migration on your household?	<i>In the Short term: (months)</i>
		<i>In the Long term: (years)</i>
		Highly Negative / Negative / Neutral / Positive / Highly Positive
		Highly Negative / Negative / Neutral / Positive / Highly Positive

1.3 Interview Questions

Introduction: *Explain confidentiality and anonymity. Explain I want to find out a bit about his/her household, the household migration patterns and the impact of migration on household and community. Relaxed and open, please feel free to add anything even if not directly related to the question or to ask any questions at any point. Is it OK to record?*

Profile

Note: Gender, English, age group (child, youth, adult, elderly), where they live

How many people in your household? How many children?

Do you farm? Where? Which season? How many acres do you farm? Do you own the land?

What other activities do you do to get money or to feed your family?

Are you a member of a local group or organisation? Savings group, church, other informal association (e.g. pito brewers, funeral contributions etc)?

Migration questions

Do you migrate seasonally/travel? How many in the household currently do this? (M/F, children/youth/adult)

Where do you go? What do you do there? When do you go and come back? (Which season)

Did you travel/migrate 10 years ago? How many in the household travelled 10 years ago? (M/F, children/youth/adult)

Where did you go? What did you do there? When did you go and come back? (Which season)

Why did this change?

Impact Questions

What physical and financial assets would you and your household normally gain from travelling? More or less than what you would/do gain from dry season farming?

When you or family members travel, what new relationships did you create? Can you tell me a bit about a relationship you created down there? Other than friendship, how have you/household benefited from this relationship?

Did you or family members see friends or family when you went there? How have you/the household benefited from seeing these people more?

What groups or organisations were you part of down there? How have you/your household benefited from being a part of this group?

How has migration affected your/your household's participation in local groups in Farfar? What happens if somebody travels? Impact on these groups?

Do you think people who travel and come back are more active in the community; politically (empowered) and in creating change? (*If they migrate direct this at them*) Are they more likely to undertake more education?

When you/household members migrate what new skills and knowledge do you/they come back with? How has this benefitted the household or the community?

Do you think that people that travel are more likely to try new and different activities? (e.g. farming, economic, organisational, storing of food, different foods/crops etc). Can you give an example?

Do you/household members who travel seasonally come back on time for farming here? What happens if they are late?

Can you access future weather information? How? How has this information been useful for your farming?

In what other ways does household members travelling positively affect the household? In what ways does household members travelling negatively affect the household? Does it have an impact on farming here or on any other economic activities?

Does the age that people get married and have children at change if some travels? Example?

If you see two people, both from X (wherever they are from), one travels and one does not, how do you view these two people differently? Why?

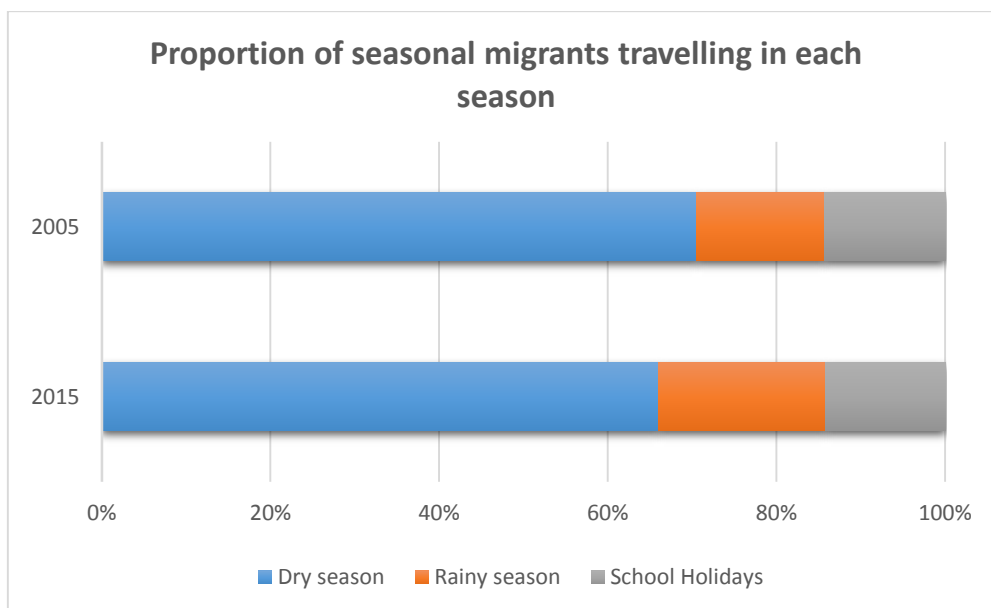
In what ways does travelling change you (those that travel) as a person?

Overall, how do you feel about migration? Do you think your household is better with or without migration? (Are +ves > -ves?) Why (if not already obvious from previous responses)?

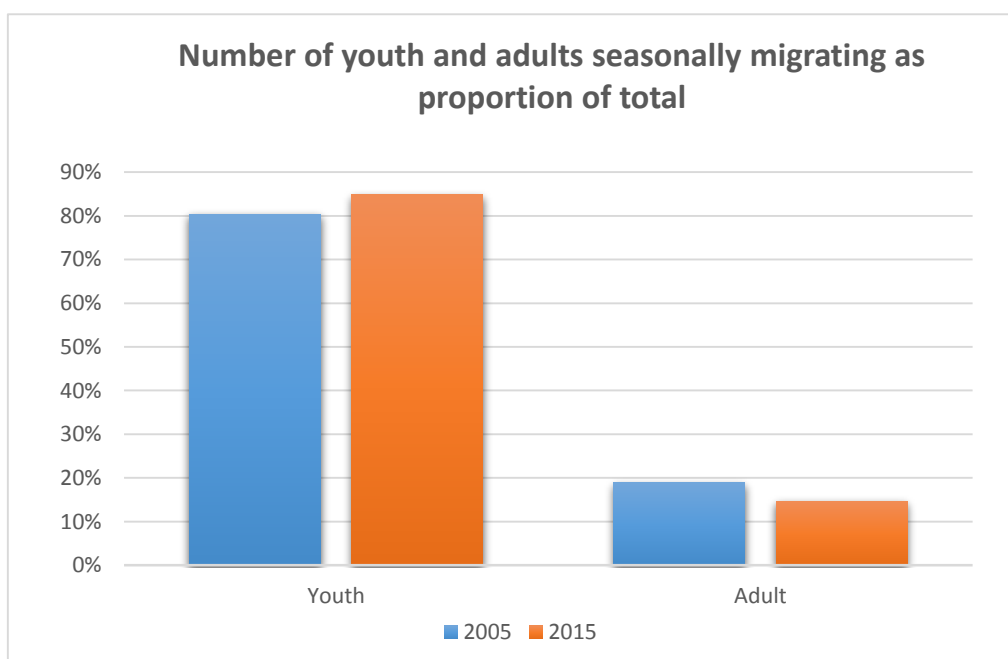
If you had access to (more) dry-season farmland, would people in your household continue to migrate?

Overall, do you see travelling as a positive household strategy, or something the household has to do for survival (coping mechanism)?

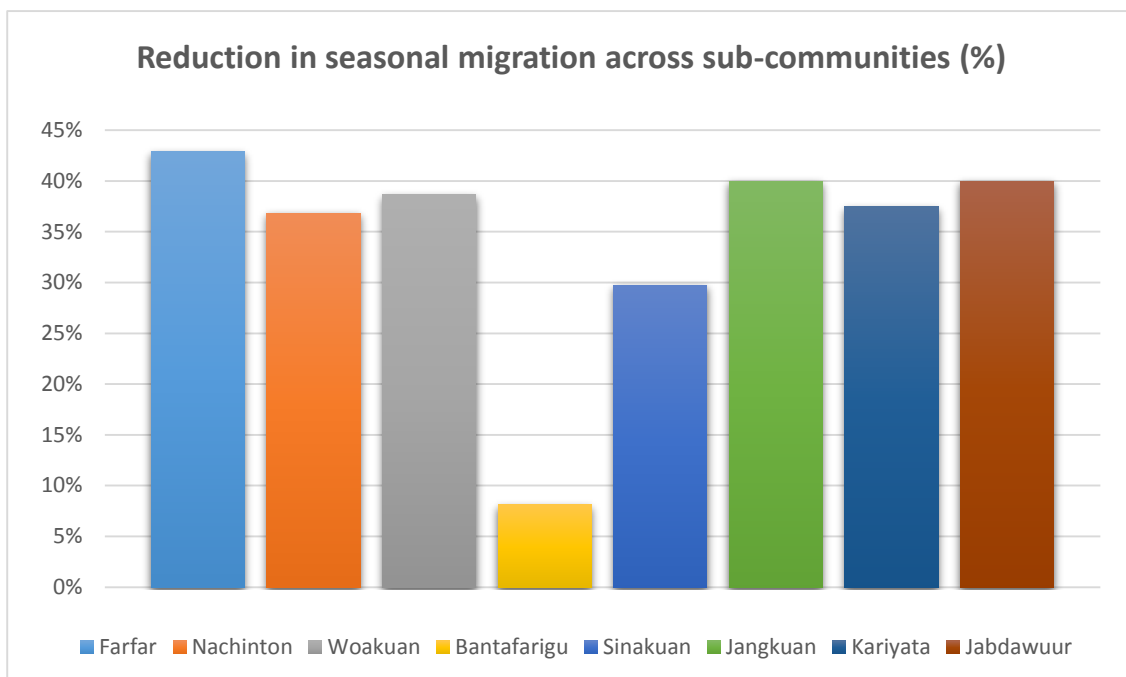
Appendix 2



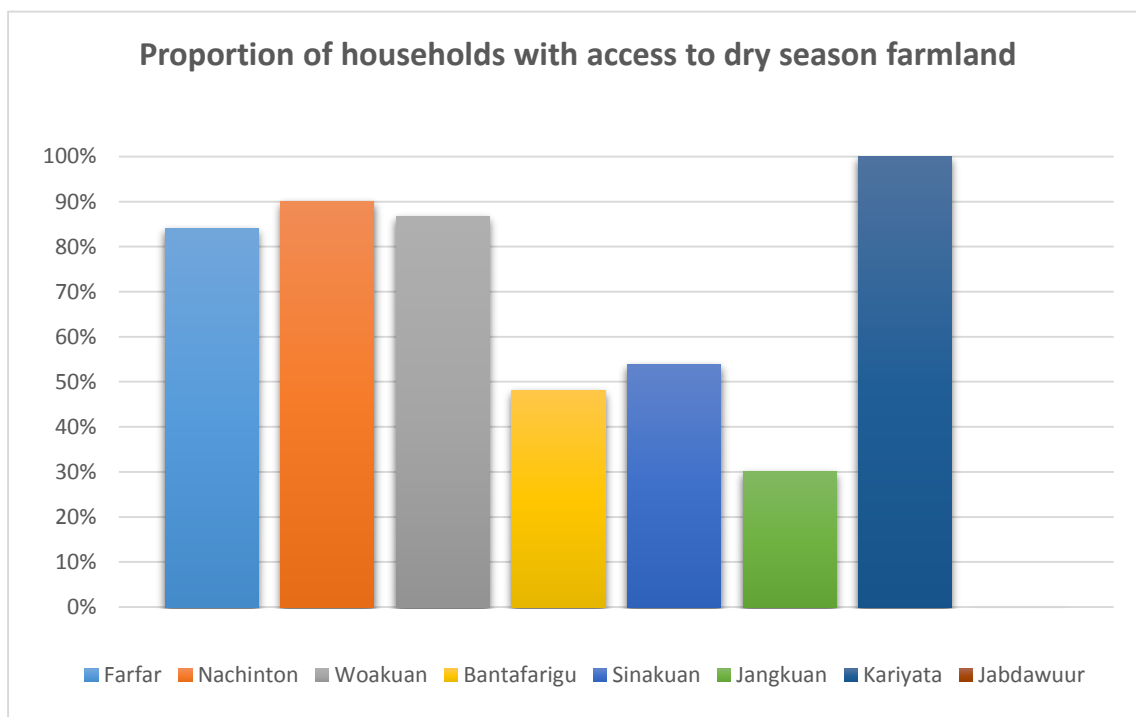
2.1 Changes in when seasonal migrants in Farfar travel



2.2 Proportion of seasonal migrants that are youth and adult



2.3 Reduction in seasonal migration across sub-communities



2.4 Proportion of households surveyed with access to dry season farmland

Appendix 3

Letter from Assemblyman to Garu District Assembly requesting construction of a dam

