The Dagara farmer at home and away: migration, environment and development in Ghana
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Introduction

The title of this PhD thesis was inspired by a classic in social science: ‘The Polish peasant in Europe and America: Monograph of on immigrant group.’ This work by William Isaac Thomas and Florian Znaniecki, which appeared in five volumes between 1918 and 1920, became a classic for many reasons. One of its qualities was that the authors studied both the source and destination areas of Polish migrants.

At the start of this PhD project, the aim was to study the economic and environmental consequences of North-South migration in Ghana, with a focus on rural-rural migration. The impact of migration was to be studied both in source and destination areas of migrants. The causes of North-South migration in Ghana had already been studied quite extensively by other scholars, especially in the 1970s and 1980s. As was common in this period – in which structuralist views dominated social and development theory – these studies emphasized structural-historical causes of migration. Northern Ghana was considered a labour reservoir, consciously created by the colonial government to guarantee a constant supply of cheap manpower for the development of an export economy in Southern Ghana. More recent studies of underdevelopment and out-migration in Northern Ghana do not completely discard such structural-historical explanations. Some of the root causes of out-migration from Northern Ghana indeed go back to colonial times and some shifts in contemporary migration patterns can partly be attributed to changes in the structural constraints that migrants face. However, the structural-historical perspective is one-sided as it completely ignores migrants’ agency and because it underrates drivers of...

1 De Haas (2010) shows convincingly how changing insights in the relation between migration and development reflect wider paradigm shifts in social and development theory.
2 See for example Thomas (1973); Plange (1979); Sheperd (1981); van Hear (1982); Songsore (1983); Sutton (1989) and Cleveland (1991). There is some debate about whether the role of Northern Ghana as a labour reservoir resulted from colonial neglect or deliberate policy (see Sutton 1989).
migration that do not fit the centre-periphery model. These weaknesses have been
addressed in several Ghanaian case studies\(^3\), but one weak point remains, namely the
rather crude treatment of environmental factors. Environmental causes of migration,
such as erratic rainfall and poor soils, are not ignored, but are usually taken for
granted and not subjected to critical scrutiny and empirical testing.

In the course of this research, it became clear that a study of the impact of
migration would have serious flaws without a more thorough understanding of
migration causes. The same factors that influence people’s decision to migrate also
influence the impact of migration (Taylor 1999). For example, a young farmer who
migrates because of a quarrel with his father over access to land is less likely to send
remittances than a professional whose education has been financed by relatives at
home and who migrates to take up a white-collar job. Vice versa, the impact of
migration shapes the conditions in which people decide to migrate, stay put or
return. For example, if a domestic migrant has assisted a relative at home to set up a
successful business, this relative will have less reason to migrate. At the same time
he or she will have more means to migrate, including possibly to international
destinations. The separation of migration causes and impacts, as is common in much
of the migration literature, prevents a proper understanding of the relation between
migration and wider societal processes (de Haas 2010). Therefore, it was decided to
integrate migration causes in the research design. After including migration causes
in the analysis, the content of this thesis is best described as a study of migration,
environment and development linkages in migrant source and destination areas. In
the study of migration causes, the emphasis lies on factors pertaining to the natural
environment. However, an attempt is made to assess the importance of environ-
mental causes vis-à-vis other drivers of migration.

Ghana’s Upper West Region was chosen as a migrant source area, and the Brong
Ahafo Region as a destination area.\(^4\) Ecologically, this migration flow involves a
movement from the interior savannah with one rainy season to the forest-savannah
transition zone with two rainy seasons. In political-economical terms the movement
is from a poor and underdeveloped periphery, not to a core of political and economic
power, but to a semi-peripheral food crop frontier. Within the Upper West Region,
numerically, there are three dominant groups: the Dagara, the Wala and the Sisala.
In the present study, the analysis is limited to the Dagara who make up 57.5 percent
of the region’s population (Ghana Statistical Service 2005).

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\(^3\) See for example Brydon (1992); Gyasi & Ayivor (1992); Twum-Baa \textit{et al.} (1995); Abdulai (1996); Mensa
Bonsu (2003); Abdul-Korah (2008); Lobnibe (2010)

\(^4\) Project colleague Victor Owusu studied migration from the Upper East Region to the Brong Ahafo
Region (Owusu 2007). The Brong Ahafo Region was selected as a research area because it is the principle
destination area of Dagara migrants. Moreover, contrary to other destination regions, the Brong Ahafo
Region primarily attracts rural-rural migrants.
The Dagara

The Dagara people are an ethnic group whose home area is located in Northwest Ghana and Southwest Burkina Faso. There is some debate about the correct name for this group, resulting from the fact that ethnic boundaries in Northwest Ghana are not clear-cut (Goody 1967; Lentz 2006). Alternative labels for this group are Dagaaba, Dagaba, Dagarti, Lobi-Dagarti and Dagari. Sometimes a distinction is made between the Dagaaba who live around Jirapa, Nadowli and Wa – called Dagarti by the colonial rulers – and the Dagara of Lawra and Nandom – called Lobi-Dagarti by the colonial rulers (Lentz 2006). Indeed, there are considerable linguistic differences between these areas and there are some cultural differences, too. The term Dagari is more common in Burkina Faso. In this study, I have chosen to use the term Dagara because fieldwork in the North (migrant source area) was carried out in the villages around Nandom. Data gathering in the migrant destination area in the Brong Ahafo Region was carried out among Dagara (or Dagaba) from different source areas, including Nandom, Lawra, Jirapa, Nadowli and further South. The lively debate among Ghanaian and international scholars about ethnic labels is very interesting for studies of migration, identity and regional politics, but in the present study, the discussion is of less relevance.

Linguistically, the Dagara are part of the Mole-Dagbane group, which also includes the Mossi, Dagomba, Frafra, Mamprusi, Wala and others. The origins of the people who are now called Dagara are also subject to considerable debate. The most commonly adhered to thesis nowadays is that the Dagara are the descendants of people who moved west from the more centrally organized Dagomba state. They settled in empty lands along the Black Volta or absorbed earlier settlers through conquest and inter-marriage. Until the advent of colonial rule, the social and political organization of the Dagara was based on lineage groups and earth shrine areas. Each earth shrine area was controlled by an earth priest (tendaana or tengansob) who was usually a descendant of the first Dagara settler in the area. The earth priest made sacrifices to the land gods and allocated land to new settlers and established families who wished to expand their farms. Unlike neighbouring groups like the Wala and the Dagomba, the Dagara had no central authority beyond the village level until the British introduced a system of chieftaincy as was common in other parts of Ghana. However, up to date, earth priests maintained their function of custodians of the land.  

The Dagara are predominantly small-scale farmers who engage in food crop cultivation and animal husbandry. The most common crops they cultivate are millet, sorghum, maize, rice, groundnuts, beans and yam and the most common animals

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5 See Van der Geest (2004) for a more detailed review of the literature about the social organization and origins of Dagara people.
they raise are poultry, goats, sheep, pigs and cattle. Besides farming, the Dagara traditionally engage in a number of other natural resource based activities, like hunting, fishing and gathering, and cottage industries, like weaving, smock making, wood carving and processing (e.g. beer brewing and sheabutter extraction). In the course of the 20th century, such traditional non-farm activities have been expanded with a large number of income generating activities, like shop keeping, masonry, carpentry, welding, mechanics and catering. In addition, many Dagara are nowadays educated beyond secondary school level and find work as civil servants, for example in teaching, nursing and agricultural extension.

At home and away

Home for the Dagara people is Northwest Ghana and Southwest Burkina Faso. Fieldwork for this study was carried out in the Nandom Area in Lawra District, Upper West Region, Ghana (see map 1.1 and picture 3). From earlier research (Van
der Geest 2004), it was known that migration, both seasonal and more permanent, is a central element of rural livelihoods in this area. Away could theoretically be anywhere in the world, but so far, only a very small minority of Dagara people have migrated out of Ghana. For most Dagara migrants, presently, away is the Brong Ahafo Region in Ghana’s middle belt.\(^6\) This region has become Ghana’s principal food crop frontier in the past decades. Whereas migration to other regions is predominantly rural-urban, most Dagara in the Brong Ahafo Region settle in rural areas. Migrants from the Upper West Region are concentrated in the North of the Brong Ahafo Region, along the Wa-Kumasi road. Wenchi District was selected as the principal research area in the destination region (see map 1.1 and picture 4). This district had the highest number (23,965) and proportion (14.38 percent) of Dagara migrants according to the last population census in 2000. However, one of the nine study village was in the neighbouring Techiman District, which has the second largest Dagara community (20,805 or 11.92 percent).

According to the population census of 2000, of all ten regions in Ghana, the Upper West Region had the highest migration deficit. A total of 227,874 people who were born in the Upper West Region (31 percent) had migrated out of the region, mostly to Southern Ghana. The counter flow of people born in other regions living in the Upper West was much smaller (36,221). The Brong Ahafo Region was the main destination area of migrants from the Upper West (90,704). Almost half of them (44.7 percent) were women. People born in the Upper West constitute 5.3 percent of the total population of the Brong Ahafo Region. This figure excludes second generation migrants. A way to include the children and grand-children of first-generation migrants is to look at the number of people with an ‘Upper West ethnic background’. Together, the Dagara, Wala and Sisala constitute 9.3 percent of the total population of the Brong Ahafo Region. The Dagara are most numerous (6.4 percent) followed by the Wala (1.6 percent) and the Sisala (1.3 percent).

The documented history of Dagara migration starts only twelve years before the publication of ‘The Polish Peasant’ by Thomas & Znaniecki (1918). In 1906, a delegation of thirty ‘community representatives’ from Northern Ghana were taken on a ‘reconnaissance tour’ to the gold mines in Tarkwa in the present Western Region. In the next year, the first group of twenty-six labour migrants travelled to Southern Ghana to work in the mines (Lentz 2006: 140). An important research method in ‘The Polish Peasant’ was to study correspondence between migrants and their relatives and friends at home. It would have been very interesting to study, like Thomas and Znaniecky, the personal experiences of the first Dagara migrants in

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\(^6\) At the time of the last population census, in the year 2000, 35.7 percent of all Dagara in Ghana were living in Southern Ghana, of whom 50.6 percent in the Brong Ahafo Region.
Picture 3 The Nandom station with on the left the Kumasi bus. In 2007 the central street of Nandom was tarred (not in picture).

Picture 4 Street view in Wenchi Town with on the left an overloaded charcoal truck.
Southern Ghana. However, it would take until the 1930s for the first school in Northwest Ghana to open its doors so it is unlikely that these first migrants could read and write. In the absence of first-hand accounts, we have to rely on colonial reports, personal diaries of colonial officers and oral history to reconstruct Dagara migration history.

Northern Ghana’s migration history quite neatly follows the three stages in Portes’ (1978) model of migration and (under-) development. In stage one, which lasted until the early 20th century when the Northern Territories of the Gold Coast were colonized by the British, there was very little migration from present Northern Ghana to the South. In the pre-colonial era, people migrated over shorter distances in search of fertile lands and to escape conflict, oppressive rulers and slave raiders (Cleveland 1991; Lentz 2000). The only substantial flow of people that moved from present Northern Ghana to present Southern Ghana consisted of captured slaves who were sold to European traders and shipped to the Americas or ended up working for farmers in Southern Ghana who benefited from the increased trade in agricultural goods after the abolition of the Transatlantic slave trade (Sutton 1989; Der 1998). In this period (the second half of the 19th century) domestic slavery was not yet abolished (Swindell 1995). Large-scale voluntary migration was impeded by the situation of conflict and insecurity resulting from the wars between the Ashanti, the Gonja and the Dagomba and the related activities of slave raiders.

In the second stage of Portes’ (1978) model, contact between the ‘core’ and the ‘outlying areas’ increases through trade, but people do not yet migrate voluntarily. This is the time of induced migration through forced recruitment mediated by local authorities, a system akin to ‘coolie migration’ or ‘indentured migration’ as described by King (1996) in his historical overview of world migrations. For Northern Ghana, this stage was very well documented by historical anthropologist Carola Lentz (2006). The time of recruitment lasted about two decades, from 1906 to 1927 (ibid, 139-142). The ‘core’ for which labourers were recruited consisted of the mines in Southern Ghana. The colonial government also recruited labourers from Northern Ghana for railway construction and other infrastructural works. After labour recruitment ceased, an indirect way of inducing migration was the introduction of direct taxation.7

The third stage of Portes’ model starts when recruitment is no longer necessary because of structural changes in the economy, culture and social organization. In the case of Northern Ghana, the economy did not fundamentally change before migration became voluntary. As Lentz (2006: 143) documented, voluntary migration started not long after the first forced migrants returned from the mines in Southern

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7 Compared to surrounding French colonies, the tax regime in the Northern Territories of the Gold Coast was relatively mild. Sutton (1989) and Abdul-Korah (2004) doubt whether direct taxation had a significant impact on human mobility.
Ghana. Although most mine workers returned with possessions that impressed their friends and relatives at home, the reports about work in the mines were not positive. The conditions were poor and the dead rates were high. There were much better opportunities for work in the booming cocoa sector where wages and working conditions were better. Another advantage of work in the cocoa sector was that labour demand peaked during the off-season in the North, which lasted from October to April. In the early stages of the North-South migration system, migration was predominantly seasonal and male-dominated. Migrants tried to return to the North for the farming season even though until the 1930s, they had to walk all the way to the South, which took them about two weeks.

Portes’ model only has three stages. In the case of the Dagara from Northwest Ghana, a fourth stage has been entered. In this present stage, the migration system has matured. A shift has been made from labour migration to a variety of migration types. In the early stages of the Dagara migration system, almost all migrants were employed as mine workers, farmhands, labourers in infrastructural projects or night-soil collectors (toilet cleaners) who regarded their stay as temporary. Nowadays, Dagara migrants increasingly settle in Southern Ghana to establish their own farms; to earn an income through self-employment in the informal economy; or to work in white-collar jobs like teaching and nursing. Other changes in the Dagara migration system are a shift from individual, male-dominated migration to the movement of entire households with more gender balance. It has also become more common for women to migrate independently. Many Dagara migrants still return to the Upper West after some years, but the movement to Southern Ghana has become increasingly permanent.  

Problem statement, disciplinary embedding and research questions

This PhD project is part of a larger research entitled ‘Rural migration and the environment in West-Africa’, which was funded by the Dutch Council for Scientific Research (NWO). The problem statement of this larger research project is summarized as follows:

“The Sahelian zone in Africa shows significant but fluctuating flows of migrants from relatively dry areas to more humid zones. In the absence of such migration, the extent of soil depletion would be considerably higher in the place of origin, whereas migration leads to environmental damage in the areas of destination where forest is turned into cultivated land. Do the benefits of reduced depletion outweigh the costs of deforestation? This central question is analyzed in two sub-projects that investigate details of the process in Burkina-Faso and in Ghana. (..) In Ghana,

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8 The Dagara migration system is not exceptional in this sense. In the second half of the 20th century, a similar shift in migration patterns has taken place more generally in West African migration systems (Amin 1974).
the research focuses on the impact of migration and remittances on the cropping patterns and investments in the place of origin, and compares this with the type of land use of the ‘typical’ migrant from that region in the place of destination. (...) The common factors of the two projects are the comparison of economic and environmental effects of migration in regions of origin and destination, and the assessment of factors underlying the migration and remittance decisions” (Burger 2001: 1).

The phrasing of the problem statement contains an implicit assumption that population growth has a negative impact on the environment. A second assumption is that environmental gains and losses in migrant source and destination areas are comparable. These assumptions were not incorporated in the research design of this PhD project. A more open approach to population-environment relations was adopted (see figure 1.1) and no attempt was made to quantify the question whether “the benefits of reduced depletion outweigh the costs of deforestation”.

Figure 1.1 shows the disciplinary embedding of this research. First and foremost, this PhD project has been an exercise in human geography. In my view, human geography is multi-disciplinary by nature. In this study, methods and insights are borrowed from other disciplines like physical geography, remote sensing, history, demography, migration studies, anthropology, economics and agronomy. What more makes this research an exercise in human geography? First, the topic of migration, although fruitfully studied by academics from many disciplines, is particularly suitable for geographic analysis. Human geography studies the multiple links between humans and their natural, social, economic, cultural and political environment. Causes of migration are to a large extent rooted in the characteristics of source and destination areas and migration can have profound impacts on the natural, social, economic, cultural and political environment at home and away. Second, one of the strengths of much geographic research is the combination of analyses at different levels of scale. Linking local processes and patterns of human behaviour with wider regional structures and outcomes is essential for studies in the field of population and environment (Blaikie 1994). In the present research this tradition in human geography was explicitly followed. Third, at the regional and national level, Geographic Information System (GIS) applications were used to enable a spatial analysis of migration, environment and development linkages and to embed the local case study findings in a regional context. In the data presentation ample use is made of maps. Fourth, the importance of population density – which is a key variable in much geographic research – as an intervening variable in migration, environment and development linkages was highlighted throughout this study. Population pressure in rural areas has been widely acknowledged as an important driver of migration to urban centres and to sparsely populated frontier areas (King 1996), but the role of population density in mediating migration impacts has largely been ignored by migration scholars.
Figure 1.1  Disciplinary embedding, academic debates and research questions

This research: How does out-migration from Northern Ghana, through its effect on population size and otherwise, influence the environment and agriculture in source areas?

This research: Do migrants from Northern Ghana cause environmental degradation in the Brong Ahafo Region through unsustainable land use?

This research: To what extent is migration from Northern Ghana environmentally induced and forced?

This research: Does out-migration from Northern Ghana contribute to development and more sustainable livelihoods at home?

This research: Does migration to the Brong Ahafo Region contribute to development and more sustainable livelihoods in the destination area?

Research question: What are the economic and environmental causes and consequences of rural migration from the Upper West Region to the Brong Ahafo Region (Ghana)?
At the core of the research are three academic debates: the population and environment debate, the migration and development debate and the environmental refugee debate. Some key questions of these debates, which are relevant for the present research, are highlighted in figure 1.1, and the crude positions of different schools of thought are indicated. The relevance of different bodies of literature and theory varies between migrant source and destination areas. In the case of the population-environment debate, for example, Malthusian theory about the effect of population growth beyond an area’s carrying capacity and Boserupian theory about transition to more intensive and sustainable land use under increasing population pressure are more relevant in densely populated migrant source areas than in sparsely populated tropical frontiers. In the latter areas, the academic debate about the role of settler farmers in deforestation processes is more relevant for studying the environmental effect of migration. Similarly, separate bodies of literature have evolved with regard to the impact of migration on development in source and destination areas. In the case of the environmental refugee debate, the focus has been primarily on environmental push factors in migrant source areas.

The environmental refugee debate deals with the question whether environmental scarcity, environmental degradation and sudden-onset environmental hazards are major drivers of involuntary migration – or whether they will be in the future. Recent interest in this theme results from the widespread attention for climate change and public perceptions of a ‘wave of migrants’ from the world’s poorer areas into more affluent parts. Within this debate, two broad views can be distinguished: the alarmist view and the minimalist view9. Alarmist scientists predict a massive exodus of refugees from areas that are struck by environmental disaster. By contrast, advocates of the minimalist view consider the natural environment not more than a ‘contextual factor’ that influences human mobility only in combination with other forces in the social, economic and political domain. The alarmist view has also been criticized by livelihood researchers who emphasize that migration from poorly endowed and risk-prone areas is not a ‘last resort’, but rather an element in a larger package of coping mechanisms and adaptive strategies. Northern Ghana is commonly portrayed as a drought-prone area with poor agro-ecological conditions and chronic food security problems. It is also an area that experiences large-scale out-migration. Insights from the environmental refugee debate are used in this dissertation to determine the role of the environment as a driver of North-South migration and to assess to what extent people are forced to migrate.

The population-environment debate primarily deals with the impact of demographic and socio-economic change on natural resources management and environmental quality. Migration alters population size and composition in migrant source and destination areas, and can bring about changes in production and

9 The term ‘minimalist view’ was taken from Suhrke (1994).
consumption patterns that can have an impact on the environment. So far, the environmental impact of out-migration in migrant source areas has received very little attention in academia and no different schools of thought have evolved around this theme. In this dissertation, insights from the Malthus-Boserup debate are combined with insights and methods from the migration and development literature to study the effect of out-migration on land use sustainability in migrant source areas. In addition, a twenty-five years time series of remotely sensed vegetation data and population census data are used to explore migration-environment linkages in Ghana.

The environmental impact of migration to tropical frontier areas has received more attention in academia. Principal views in this field of research could be labelled ‘mainstream environmentalist’ and ‘neo-populist’ (Blaikie 1998) or ‘ecopopulist’ (Dietz 1996). In the early mainstream environmentalist view, local people were considered “irrational and ignorant and a major part of the problem” (Post & Snel 2003: 86). In this view, the traditional land use systems of small-scale farmers who settle in agricultural frontiers are a major driver of deforestation. In the past two decades, mainstream environmentalist approaches have shifted towards neo-liberalism, which views local people as rational actors who are responsive to incentives to conserve the environment (ibid). The neo-populist approach is strongly actor oriented and considers indigenous knowledge just as important as scientific knowledge (Dietz 1996; de Haan 2000). It challenges mainstream environmental degradation and deforestation discourses, and has a more positive outlook on local farmers’ land use sustainability. ¹⁰ Neo-populist ideas about land use sustainability of migrant farmers, who are less familiar with local ecological conditions and who are subject to insecure land tenure regimes, are more ambiguous. In the present study, the environmental impact of Dagara migration to the agricultural frontier in Ghana’s Brong Ahafo Region is assessed from multiple angles, including LANDSAT images, census data, local discourses of environmental change and a survey comparing farming methods of settlers and native farmers.

The third body of literature that is of relevance in the present research involves the migration and development debate. Elements of this broad field of research include the impact of migration on development in migrant source and destination areas and vice versa the impact of development on human mobility. The literature on these sub-fields of the migration and development debate is somewhat dispersed. Studies about the impact of migration on development in migrant sending areas have primarily been conducted in less developed countries. The economic impact of migration in migrant receiving areas has been studied mostly in more developed countries (e.g. studies of ethnic entrepreneurship). This would make sense if

¹⁰ See for example Leach & Mearns (1996) and Leach & Fairhead (2000). These authors are cited by de Haan (2000) as pioneers of the neo-populist approach, but do not use this term themselves.
migration flows would exclusively run from less developed to more developed countries, but this is not the case. The vast majority of migrants in the world migrate within the borders of their home country. A reason why the impact of migration on development in domestic destinations in the Global South has received relatively little attention is perhaps that the relation is relatively straightforward, at least as compared to the effect of migration in sending areas and as compared to the effect of in-migration in more developed countries where the existence of social security systems makes the relation more complex. The two schools of thought that have dominated the migration and development debate up to the 1980s – neo-classical equilibrium theory and dependency theory – and whose positions with regard to the impact of migration on sending areas were diametrically opposite, do not seem to disagree greatly about the impact of migration on development and labour markets in destination areas. Both schools of thought postulate that migrants tend to move from areas where labour is abundant and where other factors of production are scarce to areas where labour is scarce and other factors of production are abundant. Migration contributes to development in destination areas through a more balanced allocation of production factors. This primarily benefits owners of the production factors land and capital. For labourers and tenant farmers the effect is more likely to be negative as they compete with migrants over jobs and in the case of farm migration over access to land. In-migration may reduce wages and increase land rents. Negative effects of migration on development in destination areas tend to be emphasized when the flow is perceived to be too large to be absorbed in terms of employment, housing and other amenities. This is most common in the case of massive rural-urban migration and large-scale refugee flows.

The impact of migration on development in migrant source areas has been studied extensively over the past decades and continues to attract attention from scientists and policy makers. In the 1950s and 1960s neo-classical equilibrium and modernization theories dominated this field. The effect of out-migration in areas of origin was thought to be positive. Migration of surplus labour would result in higher wages and in the end reduce the need to migrate. It was also expected that return migrants would become ‘agents of change’ in their home areas. In the 1970s and 1980s dependencia theory became more influential. In this view migration is part and parcel of the capitalist system that removes resources from peripheral regions to centres of economic growth, leaving migrant source areas in a state of dependency. Since the 1990s pluralist views have dominated the field. It is now commonly accepted that the impact of migration on development is time and place specific and the focus is now on finding out under which circumstances migration has positive and negative effects on development in migrant source areas.

11 The observation that migrants move from labour-abundant to labour scarce areas is somewhat simplistic. Many additional factors that contribute to or constrain migration flows have been identified.
The research questions posed in this PhD project (see figure 1.1) were to be answered primarily with data from household level questionnaires. Separate questionnaires were designed for migrant households in rural destinations (N = 203) and households in the source area (N = 204).\(^\text{12}\) Besides these two core surveys, an additional questionnaire was designed for native households in the destination area (N = 73). This questionnaire had two aims: firstly, to compare the environmental sustainability of migrants’ and native farmers’ cultivation practices; and secondly, to explore economic linkages between migrants and the native population, for example in land rent and labour relations.\(^\text{13}\) Separate questionnaires were further conducted among seasonal migrants (N = 71) and rural-urban migrants (N = 30) in the Brong Ahafo Region. A mainly qualitative community questionnaire was carried out in the destination villages to discuss issues that went beyond the household level (e.g. settlement history, perceptions of environmental change and market conditions).\(^\text{14}\)

An implication of the initial research design, with much emphasis on household questionnaires, was that it would provide insights on the links between migration, economy and environment at the household level, which could not automatically be upgraded to the area level at which the central research question was posed. It would tell us something about the relation between migration and livelihood strategies (instead of economy) and natural resource management (instead of environment). This was considered problematic, especially in the case of migration-environment linkages. An option could have been to simply accept this limitation and to change the main question into a more people-centred one, like: What are the consequences of migration for the sustainability of rural livelihoods in areas of origin and destination? The term ‘sustainability’ incorporates economic as well as environmental (and social) aspects of rural people’s livelihoods, both in the short term and in the long term. However, in the course of the research, it became clear that the analysis would benefit greatly from integration of secondary data on a higher level of scale. Triangulation of household survey data with a combination of \textit{inter alia} census data (both recent and historical), agricultural production data and remote sensing data was sought to better understand the dynamics of migration, environment and development in Ghana, and to place the local research areas in a broader geographic and historical context. A disadvantage of this shift is that much of the wealth of data at the household level remains under-reported here. The questionnaire

\(^\text{12}\) Virtually all households in the source area had migrant children or siblings so there was no need to stratify the survey sample into migrant sending and non-migrant sending households.

\(^\text{13}\) This questionnaire also enables a comparison of living standards of settlers and natives. Such an analysis is presented in a paper with the provisional title “We farm for them: Economic consequences of Dagara migration to the Brong Ahafo Region”. The paper is in progress, but could not be included in this book because of time constraints.

\(^\text{14}\) All questionnaires can be downloaded from the researcher’s website (www.keesvandergeest.nl).
survey conducted among seasonal migrants in the Brong Ahafo Region, for example, has not been used at all.

An additional reason why only a part of the household data is reported here is the fact that the thesis is mainly based on journal articles. The strict word limits, the need for an article to be able to stand alone and the need to make an original and clearly defined contribution to a body of literature, made it impossible to do justice to the wealth of data that was gathered. Another consequence is that not all research questions received equal attention. Most notably, the economic impact of migration in the destination area has remained underexposed. The coverage of different migration, environment and development linkages is summarized in table 1.1. The causes and consequences of migration in the area of origin receive more attention than the situation in the destination area. This is especially the case for environmental causes of migration and the impact of migration on (agricultural) development. In the destination area, the focus has been primarily on the environmental impact of migration.

Table 1.1 Coverage of migration, environment and development linkages

<table>
<thead>
<tr>
<th>Causes of migration</th>
<th>Area of Origin</th>
<th>Area of Origin</th>
<th>Destination area</th>
<th>Destination area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>Ch. 2 (+)</td>
<td>Ch. 5 (+/-)</td>
<td>Ch. 2 (+)</td>
<td>Ch. 4 (-)</td>
</tr>
<tr>
<td>Development</td>
<td>Ch. 3 (+/-)</td>
<td>Ch. 6 (+)</td>
<td>Ch. 3 (+/-)</td>
<td></td>
</tr>
<tr>
<td>Consequences of migration</td>
<td>Ch. 6 (+)</td>
<td>Ch. 7 (+/-)</td>
<td>Ch. 7 (+)</td>
<td>Ch. 6 (+)</td>
</tr>
</tbody>
</table>

Notes: (+) = major focus; (+/-) = secondary focus; (-) = minor focus

Outline of the thesis

As mentioned above, this thesis is largely based on journal articles. Therefore the chapter outline deviates from the structure of most dissertations in my field of research, which usually contain separate chapters for the introduction, theory and methods, a chapter introducing the research area(s), several empirical chapters in

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15 Chapter two, three, four and five are based on articles that have been published in journals (Environment and Urbanization, International Migration, Hommes et Migrations (French) and Africa respectively). Chapter six is based on an article that is currently under review, and an adjusted version of chapter eight (conclusion), summarising the overall findings of the research, has been submitted for publication. A summary of the principal findings of Chapter three has been published in Forced Migration Review.
which the findings are presented and a concluding chapter. In this thesis, theory, methodology and basic descriptions of the research areas are integrated in the introduction and empirical chapters. Another implication of basing the thesis on journal articles is that the internal structure of the empirical chapters differs according to the author instructions of the journals. Where desirable and possible, I have edited the original articles to avoid too much repetition, while at the same time aiming to maintain the readability of the chapters as separate units.

Chapter two offers a first exploration of migration-environment linkages in Ghana. This chapter is quite broad as it discusses environmental causes as well as environmental consequences of migration, both in source areas and destination areas of migrants. It compares district-level migration data from the population census with remotely sensed vegetation data, first at national level and then for three principal migration systems in Ghana separately: North-South migration, cacao frontier settlement and migration to the capital Accra. The national analysis indicates that the environment matters in explaining migration flows and that migration matters in explaining changes in vegetation cover. However, these statistics say little about the processes behind migration and vegetation dynamics. In the second part of this chapter, supplementary sources are used that enable a more insightful interpretation of migration and environment linkages in the three principal migration systems.

Chapter three looks in more detail at the environmental causes of North-South migration, both in source and destination areas of migrants. This chapter contributes to the environmental refugee debate by assessing to what extent North-South migration is environmentally induced and forced. The first part of the chapter contains a cross-sectional and longitudinal analysis of migration propensities and different indicators of natural resources scarcity (rainfall, vegetation, crop yields and population pressure). In the second part, the reasons that Dagara migrants in the Brong Ahafo Region mentioned for their decision to migrate are analysed.

In Chapter four, the environmental impact of Dagara migration in a prime destination area is investigated. LANDSAT images from 1973 and 2003, published by the United Nations Environmental Program (UNEP), suggest that the Northwest of the Brong Ahafo Region has experienced widespread land degradation over the past decades. According to UNEP, land degradation in Ghana is primarily caused by unsustainable farm practices. Several studies comparing the land use of settlers and native farmers conclude that migrants’ farming methods are particularly detrimental for the environment. This chapter uses a variety of data at different levels of scale to challenge the ‘easy conclusion’ that Dagara in-migration must have been an important cause of land degradation. First, the validity of UNEP’s degradation narrative is challenged and then remotely sensed vegetation data and historic census data are used to show that most degradation has probably occurred before the area
became a major destination of Dagara migrants. Lastly, survey data show that there are appreciable differences in farming methods between Dagara settlers and native farmers, but no evidence is found that settlers’ farm practices are less sustainable.

Chapter five, six and seven focus on the consequences of out-migration in the area of origin. In Chapter five, local perceptions of migration from the Nandom Area in Northwest Ghana are studied. A qualitative analysis of 204 respondents’ answers to open question about the consequences of seasonal migration, long-term migration and return migration yields a holistic view of the matter, encompassing consequences in many different realms of life (e.g. food security, income, health, education, agriculture, social cohesion, communal labour, funerals, architecture and knowledge).

Chapter six looks at the relation between out-migration, population density and agricultural productivity in the twenty-four districts of Northern Ghana. In the theoretical part of this chapter the migration and development debate is linked to the Malthus-Boserup debate about population growth and land use sustainability. The objective is to address the reverse causality problem in studies about the impact of migration on agricultural development by recognizing the intervening role of population density. The empirical part of this chapter identifies a U-shaped ‘Malthus-Boserup curve’ between population density and crop yields in Northern Ghana. The central thesis of this chapter is that one has to know where a region is situated in the transition to more intensive land use to understand the impact of out-migration on agricultural development.

Compared to other districts in Northern Ghana, Lawra District – in which the Nandom area lies – has medium to high population density and is situated right at the bottom of the Malthus-Boserup curve. While respondents in the Nandom Area emphasized that out-migration relieves pressure on farmland (see Chapter five), a negative effect may be that out-migration can remove the incentives for a transition to more intensive land use.

In Chapter seven, demographic and farm characteristics of 204 rural household in the Nandom Area are used to study the impact of seasonal migration, long-term migration and return migration on agricultural development. The survey data are complemented with an analysis of changes in the policy and market environment, which are assumed to influence the conditions for agricultural development. Three broad avenues of migration impact on agriculture are investigated. First, the effect of migration on household composition, farm size and the adoption of labour-led intensification measures; second the impact of migrant savings and remittances on capital-led intensification measures; and third, the impact of return migration.

16 An in-depth study of governmental and non-governmental development interventions in Nandom was made possible through a three-day workshop organised as part of a research project called ‘Participatory Assessment of Development’ (see http://www.padev.nl and Van der Geest 2010b).
Final remarks

Two papers that are based on the present research are still in preparation and could not be integrated in this thesis because of constraints of time and space. The first paper is called *Trailing wives? The migration experience of Dagara women in the Brong Ahafo Region* and the working title of the second paper is ‘*We farm for them*: Economic consequences of Dagara migration to the Brong Ahafo Region.

The first paper, which is based on in-depth interviews with twenty-nine Dagara women and survey data from migrant source and destination areas, shows that virtually all women had migrated with their husbands. The decision to migrate was usually made by the husband and women had had little influence over this decision. With regard to the economic consequences of migration, most women indicated that household food security had increased substantially, but their own opportunities to engage in non-farm income generating activities had reduced. In the North, they used the dry season to earn a personal income with activities like beer brewing, pottery, sheabutter extraction and weaving. In the Brong Ahafo Region, with its bi-modal rainfall pattern, they work on the household farm throughout the year. For Dagara women migration involved a loss of autonomy over financial resources because the household income from crop sales was controlled by the husband.

The second paper that could not be included in this thesis compares the livelihoods of three groups: Dagara migrant households in the Brong Ahafo Region, households of native farmers in the Brong Ahafo Region and rural households in a principal source area of Dagara migrants. The findings show that for the vast majority of Dagara households in the Brong Ahafo Region, migration has had a positive impact on agricultural production, crop sales and food security. However, a large part of this gain is lost because they have to share the harvest with local landowners and they are expected to send remittances to their relatives at home. This paper also provides insights in the economic effects of Dagara in-migration for the host population. Only a minority of the native population benefits from the settlement of farmers from Northwest Ghana by renting out land. For native farmers who have to rent land themselves the in-migration of Dagara farmers may have a negative effect because it creates more scarcity and higher prices on the land market. Much more native farmers benefit from Dagara in-migration through cheap farm labour. For native farmers who supplement their own farm income by working on other people’s farms Dagara in-migration is likely to be negative because they compete for the same jobs and the increased supply of labour can be expected to cause lower wages.

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17 This paper was presented in the International Workshop on History and Migration: Beyond the Border, Behind the Men. The Invisibility of Female Migration, held in Victoria-Gasteiz, 16-17 December 2010.
18 These interviews were conducted by Wemmy Harteveld for her Master’s fieldwork in social anthropology (see Harteveld 2004).