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Cashew Cultivation, Access to Land and Food Security in Brong-Ahafo Region, Ghana:

Preventing the intergenerational transmission of poverty



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Summary

This research aimed to investigate the implications of changing agricultural land use from food production towards increased cashew cultivation for food security and poverty alleviation in Jaman North District, Brong-Ahafo Region of Ghana. Based on qualitative, participatory research with a total of 60 participants, the research found that increased cashew production had led to improvements in living standards for many farmers and their children over recent years. Global demand for cashew is projected to continue to grow rapidly in the immediate future and cashew-growing areas of Ghana are well placed to respond to this demand. Cashew farmers however were subject to price fluctuations in the value of Raw Cashew Nuts (RCN) due to unequal power relations with intermediaries and export buyer companies and global markets, in addition to other vulnerabilities that constrained the quality and quantity of cashew and food crops they could produce. The expansion of cashew plantations was leading to pressure on the remaining family lands available for food crop production, which community members feared could potentially compromise the food security of rural communities and the land inheritance of future generations. The research identifies a number of key messages for policy and practice:

Access to basic services and community development

Farmers involved in increased cashew cultivation in rural communities in Brong-Ahafo region benefited in many ways from the sale of Raw Cashew Nuts, a non-traditional export cash crop. The income they earned from cashew helped to improve housing, provided access to better quality food and alleviated food shortages during the 'lean season' and enabled parents to invest more in the education and healthcare of the younger generation. However, other indicators of quality of life, such as **access to safe drinking water, improved sanitation and access to healthcare, have not kept pace with other improvements in living standards in rural communities and need to be addressed.**

Access to education and skills training

Increased investment in the education of younger generations was regarded as a key means of preventing the intergenerational transmission of poverty. This raises questions however about the **quality of education** that students receive in rural communities and whether this equips young people with the knowledge and skills they need, in the context of a rapidly changing rural environment subject to increasing competition for land and climate-related pressures. Efforts are needed to **invest in appropriate agricultural education, apprenticeships and skills training** to ensure that young people are able to access employment opportunities in rural communities and develop diverse, sustainable livelihoods in the future.

Awareness-raising about pressures on land and food security

Men, women and young people were concerned about the rapid expansion of cashew plantations in their rural community, expressing **fears about food insecurity and insufficient land for future generations.** The expansion of cashew plantations on family lands in the study location was leading to increased land disputes and conflicts, with wealthier farmers encroaching on the land of poorer farmers, exacerbating existing gender and class inequalities. Since women and young people across Sub-Saharan Africa often have usufruct land rights¹ and are responsible for food production, **reductions in the land available for food crops are likely to have most impact on women and**

¹ Use rights to land. For example, women often gain usufruct land rights when they marry, enabling them to grow food crops on their husband's land (Yngstrom, 2002).

young people, leading to potentially negative impacts on poverty alleviation and gender equality goals. **Women are however also increasingly cultivating cashew on their own farms and benefiting from this additional source of income. This may help to safeguard their access to land and prevent the intergenerational transmission of poverty**, if women have more income available to invest in their children's education and healthcare and if valuable assets such as land can be passed on to their children, including daughters.

While local leaders appeared to be able to resolve most land disputes at present, **awareness-raising activities among chiefs, elders, family heads, male and female farmers and young people could help to ensure that adequate land is allocated to food production in future**. This could also help to reduce land disputes, spread farmers' risks and ensure that the land inheritance of marginalised groups, such as widows, orphaned young people, migrants and new-comers, is safeguarded. Women and young people, in particular, wanted more opportunities for dialogue with traditional leaders, elders, family heads and older generations about land use and food security in the present and in the future.

Development of stronger farmers' associations to negotiate prices with cashew buyers and processors

While the income from increased cashew production was welcomed, many participants at local, district and national levels felt that cashew farmers were losing out to intermediaries and export companies who pushed the prices down, and called for government intervention to regulate prices. Some strategic stakeholders however thought that government involvement could be counter-productive, since farmers would not be able to benefit from price increases in RCN in global markets. Strategic professionals and male cashew farmers thought that it was important to **organise farmers into groups to form strong local and national associations to negotiate cashew prices with export companies, processors and traders**. Trust was regarded as crucial to the success of cashew farmers' associations and co-operatives, and new technologies, such as mobile phones and IT software, were regarded as helpful in fostering greater transparency.

Access to credit, affordable inputs and information about good agricultural practices and climate-related pressures

Access to credit, affordable inputs, information about good agricultural practices and the ability to hire labour are key to enabling vulnerable households to invest in their cashew and food crop farms, increase yields, diversify livelihood strategies and develop sustainable pathways out of poverty. Good agricultural practices in planting, maintaining and pruning cashew trees, alongside initiatives such as beekeeping, may help to substantially increase cashew yields in West Africa. **More support and training from Agricultural Extension Officers** on best practices in cultivating cashew and **greater awareness about 'alley cropping' spacing methods for intercropping food crops with cashew** may help to ensure that adequate land is reserved for food crop cultivation in districts and regions involved in cashew cultivation in Ghana.

Increases in the quality and quantity of cashew produced, alongside the use and sale of by-products, could make a substantial difference to the income that cashew farmers in Brong-Ahafo and other regions in Ghana are able to obtain from their existing trees. This would help to reduce the risk of poverty for future generations, without needing to expand cashew plantations and compromise the area of land available for food crop production.

The suitability of most of the current cashew-growing areas in Ghana and Côte d'Ivoire will increase by 2050. The research reveals a need for **more information about climate-related pressures and efforts to build the adaptive capacity of farmers** to respond to changing environmental conditions that may affect particularly food crops and horticulture in future.

1. Research context

Despite global progress in reducing hunger since 1990, progress has slowed and levelled off since the food, financial and fuel crisis in 2007-8 (FAO et al, 2012). Ghana has made important progress in meeting the Millennium Development Goal target on reducing hunger; less than 5% of the population were undernourished in 2010-12 (FAO et al, 2012). Land is central to people's livelihoods, and poverty and food insecurity in rural areas continue to be associated with a lack of land or livestock, land tenure insecurity and an inability to develop alternative non-farm livelihoods in response to diminishing agricultural opportunities in many African countries (Ellis and Mdoe, 2003; Toulmin, 2008). The United Nations Food and Agriculture Organisation et al (2012: 2) report argues that since those living in extreme poverty depend on agriculture and related activities for a significant part of their livelihoods, 'agricultural growth involving smallholders, especially women, will be most effective in reducing extreme poverty and hunger when it increases returns to labour and generates employment for the poor'.

According to the African Cashew Initiative (ACi) (2014), Africa's production of cashew has continued to grow rapidly over the last ten years, with Côte d'Ivoire currently the largest producer in Africa and second in the world, while cashew production is not growing in India and production is falling in Vietnam and Brazil. At present, 90 % of cashew produced in Africa is shipped to Vietnam, India and in recent years, to Brazil for processing. According to ACi's (2014) conservative projections, global demand for cashew will continue to grow from over 2 million tonnes of Raw Cashew Nuts (RCNs) in 2012-13 to over 3 million tonnes in 2019-20. To meet this demand, African production needs to grow by an average of 8% per annum, 2013-2020, while if current global demand continued to grow at current rates, African production would need to increase by an average of 16% per annum to meet this demand. Farmers are subject to price volatility in global markets, as prices fluctuate considerably within the harvesting season as well as between seasons. The global price of cashew kernels peaked in July 2011, but has stabilised since 2012 at approximately US\$ 3.25 per lb (ACi, 2014).

Agricultural land use in much of Brong-Ahafo region, Ghana has been shifting from the production of food crops towards increased cashew nut cultivation in recent decades. This shift towards cashew cultivation is related to increased demand for cashew and the income this provides, alongside difficulties facing small-holder farmers, such as decreased soil fertility, variability in rainfall and temperature patterns and an inability to purchase fertiliser and pesticides and access credit (Bugri, 2008). While the income from cashew production may increase living standards, the loss of land for food crops may result in greater vulnerability to food insecurity and chronic poverty, especially among women and children. The introduction of cashew, a tree crop with a long life span, on family land may consolidate communal property rights into an individual's (usually men's) sole ownership (Rocheleau and Edmunds, 1997; Berry, 2009). Young people's inheritance of land and their ability to adapt to climate-related challenges and develop sustainable livelihoods in future may also be compromised. This exploratory research seeks to investigate how norms about access to land and changing agricultural land use affect food security and poverty in rural communities in Ghana.

1.1 Food security, access to land and the intergenerational transmission of poverty

The UN Food and Agriculture Organisation defines food security as:

A situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO et al., 2012: 57)

Despite such definitions, a diversity of approaches to 'food security' are apparent within the policy and research literature. Lang and Barling (2012: 313) identify two overarching perspectives: one is primarily agricultural-focused and centred on raising production as the core answer to under-consumption and hunger; the other is an emerging food systems approach, which is more social and ecological and recognises the need to address a complex array of problems, not just production.

The authors argue that the rapid price rises of oil and world agricultural commodities in 2006-8 called into question the old discourse on food security and insecurity. While overview reports have focused mainly on agricultural production, social science research has shown that 'even if one's focus is on farming, a supply chain or systems approach becomes essential' (Lang and Barling, 2012: 317). Farmers are increasingly drawn into global commodity production, as the first link in increasingly complex food value chains. While mainstream approaches to economic development regard a shift of labour from the rural and agriculture to the urban and off-farm as 'progress', Lang and Barling argue that a counter-narrative has emerged through campaigning groups such as Via Campesina, but also the World Bank and FAO, which propose that:

Small-scale farming is important for landcare; that smallholder and female-run productivity per hectare can be high; and that there is more social value in raising their output further than in driving them from the land, adding to already fast-growing conurbations (Lang and Barling, 2012: 318).

Food sovereignty, which Via Campesina campaign for, was defined in the Declaration of Nyéléni in 2007, as:

the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. It puts those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations (cited in Shawki, 2012: 428).

Food sovereignty and food sustainability approaches bring to the fore questions of social justice, such as gender and intergenerational equality in access to and control of natural resources and environmental capital, such as land.

Research from many different African contexts has revealed that access to land depends on complex socio-cultural norms and practices that vary according to place (Meinzen-Dick et al., 1997; Joireman, 2008). A recent UNDP (2012: 137) report argues that secure access, tenure, use and control of land, whether through customary systems or legal means, are essential to achieving food security and to protecting women and vulnerable groups from injustices related to the arbitrary management of land. Recent legal reforms and development initiatives have sought to promote women's equal access to land as a means of alleviating poverty (Budlender and Alma, 2011).

A key defining feature of 'chronic poverty' is its extended duration and people who experience 'significant deprivations for a period of five years or more' are more likely to remain poor for much of their lifecourse and pass on their poverty to subsequent generations (Hulme and Shepherd, 2003: 405). The 'intergenerational transmission of poverty' can be seen as an extreme form of chronic poverty (Bird and Higgins, 2011). Research has revealed the need to go beyond thinking only about

child poverty, but rather to explore key moments in the lifecourse and to analyse the 'social, economic and institutional factors that enable poverty and inequality to persist and to be replicated by one generation after another, at the same time as household and intra-household factors' (Bird and Higgins, 2011: 5). Ownership of physical assets and positive transfers of resources appear to break poverty cycles and interrupt the intergenerational transmission of poverty (Cooper, 2012). Following the sustainable livelihoods framework (Chambers and Conway, 1992), assets have been conceptualised as different forms of capital, including physical assets and material resources, such as livestock and property, human, financial, socio-political and environmental capital, such as land. Inheritance represents a critical mode for the transfer of land and other assets between generations (Cooper, 2012). An understanding of the 'intergenerational transmission' of poverty needs to be embedded in critical understandings of the social institutions, structures and power dynamics that perpetuate conditions of poverty, rather than reinforcing underclass perspectives that place responsibility for the transmission of poverty on parents and underplay structural dimensions.

The literature on gender and land suggests that increased commercialisation and privatization of land often consolidates men's control of land (Lastarria-Cornhiel, 1997; Yngstorm, 2002). While there is a growing interest in the gendered impacts of recent large-scale land acquisitions in Africa (Doss et al. 2014), little attention to date has been paid to everyday gendered struggles over land in rural communities and how changing agricultural land use may affect food security and poverty alleviation for different groups. Few studies have explored young people's perspectives on access to land and intergenerational tensions in safeguarding future land inheritance and preventing the intergenerational transmission of poverty. Furthermore, factors such as class, gender and culture play an important role in whether climate change adaptation strategies are chosen or rejected at the local scale (Nielsen and Reenberg, 2010). This report adopts a 'sustainable food systems' approach to 'food security' and land rights, in recognition of the complex interplay between socio-cultural, economic and ecological issues and inequalities in access to land and other resources.

1.2 Cashew production and climate change in Ghana

Agricultural activities contribute to over a third of Ghana's Gross Domestic Product and the majority of the population (60%) are involved in agricultural production (ACi, 2010). The agricultural sector is comprised of crops such as cocoa and others, livestock, fisheries and forestry. Non-traditional export crops, such as pineapple, mango and cashew nuts, are of increasing significance to the Ghanaian economy (ACi, 2010).

Although cashew production began in Ghana in the 1960s under a government programme, poor agricultural management practices resulted in drastic declines in yields and plantations were abandoned (Dedzoe et al., 2001). From the mid-1990s onwards, the export of RCNs increased significantly from 15 metric tonnes in 1991 to 61,590 tonnes in 2008. Annual local production was estimated to be 26,454 tonnes, indicating significant cross-border trading of RCNs, especially between Côte d'Ivoire and Ghana (ACi, 2010). A recent CIAT (2011: 2) report notes that global demand for cashew is growing and argues that 'the crop has the potential to reduce poverty among the rural poor' in Ghana and Côte d'Ivoire.

As Dedzoe et al. (2001) note, cashew does well under high temperatures, within a range of 15-35 °C, with an optimum range of 24-30°C. Although the crop is drought resistant, it requires an annual precipitation range of 500-4000 mm and requires a distinct dry period of at least four months or more for reasonably good yields (Dedzoe et al., 2001: 104). Well drained, deep, light to medium-textured soils are preferable. Dedzoe et al. (2001) conclude that the Forest-Savannah Transition agro-ecological zone of Ghana, within which Brong-Ahafo region is located, is most suitable for cashew production, in terms of climatic conditions and soil characteristics.

Ghana and other countries in West Africa which depend heavily on rain-fed agriculture, are projected to experience more frequent and intense droughts, altered rainfall patterns and increases in temperature as this century continues (Codjoe et al., 2012). These changes are likely to affect crop yields and vulnerability to poverty, since scarce resources are often already under pressure from population growth, increasing competition for land, poor soil fertility and other social, political, technical and financial constraints (ibid). Cashew yields can decrease considerably, due to high temperatures, droughts, and floods (Gilleo et al., 2011).

The current optimum altitude for cashew is 300-500 meters above sea level (masl), which is projected to decrease to 100-350 masl by 2050 (CIAT, 2011). In Ghana and Cote d'Ivoire, the yearly and monthly minimum and maximum temperatures are projected to increase by 2030 and continue to increase by 2050, while seasonality in precipitation and the number of dry months (five) remain unchanged (CIAT, 2011). The CIAT report concludes that the suitability of most of the current cashew-growing areas in Ghana and Côte d'Ivoire will increase by 2050, as shown in Figures 1 and 2. At present, most of Brong-Ahafo region is of very good suitability for cashew cultivation (Figure 1), while by 2050, southern parts of the region will increase in suitability, while some northwest and eastern parts of the region will decrease in suitability (Figure 2).

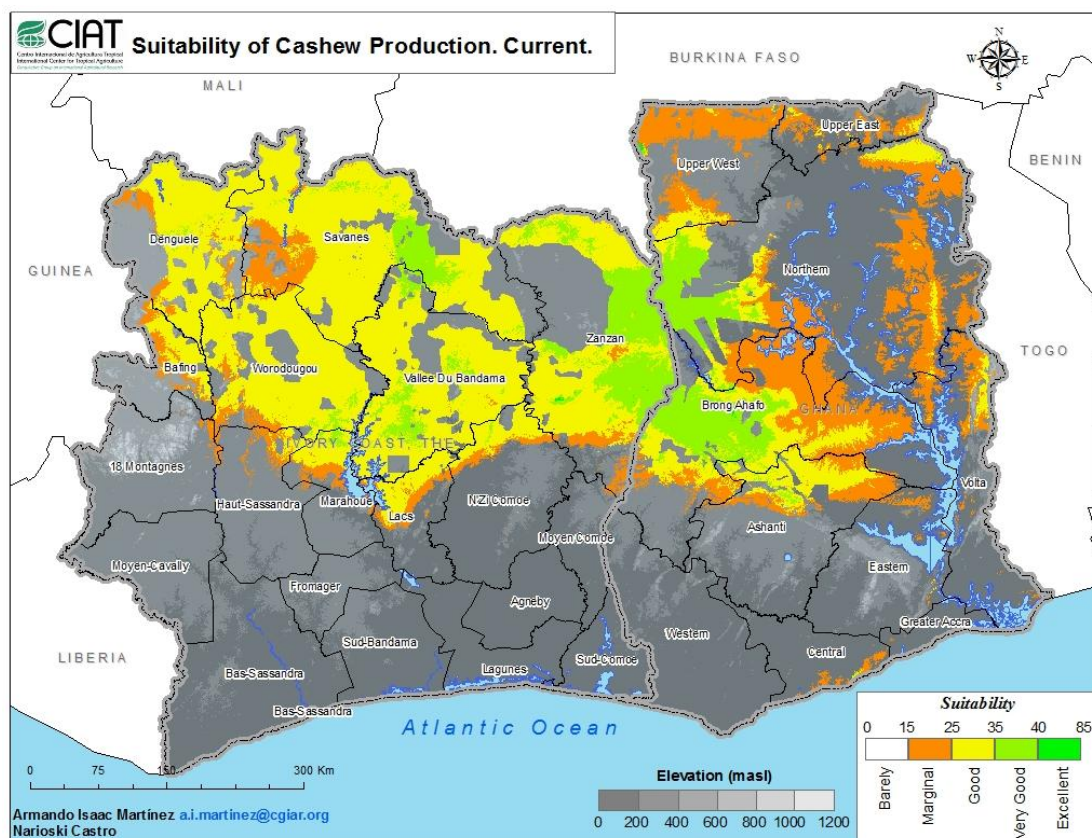


Figure 1: Current climate suitability for cashew production within cashew-growing regions of Ghana and Côte d'Ivoire. The grey areas inside the suitable areas are protected areas not available for cashew production (CIAT, 2011: 12).

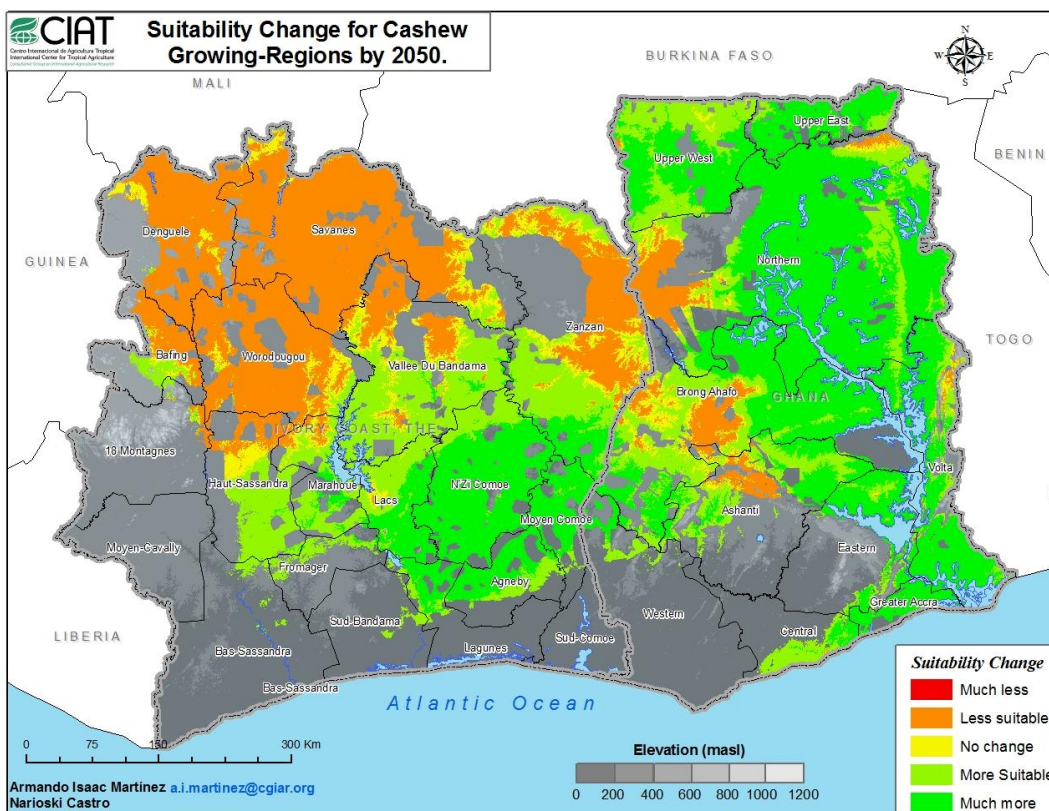


Figure 2: Suitability change for cashew growing regions by 2050 (CIAT, 2011: 16).

2. Research objectives

This exploratory research project was developed from the shared research interests of the authors. The research objectives were:

- To map livelihoods, land tenure and inheritance practices from a gendered and intergenerational perspective in the research location;
- To explore how and why access to agricultural land may be changing for different groups;
- To analyse the effects of increased cashew cultivation and changing agricultural land use on food security and poverty alleviation;
- To explore perceptions of climate-related and other risks affecting small-holder farmers and how these can be reduced;
- To develop international collaborative relations for future research.

3. Research methods

A qualitative methodology was considered most appropriate for this exploratory project. Seketia, a small rural community in Jaman North district, Brong-Ahafo region, was selected as the primary location, due to its relatively recent involvement in cashew nut production. Using snowball sampling, a diverse sample of community members of different genders, ages and social status and with varying sizes of cashew plantations, were identified to participate in the study. Ethical approval for the research was granted by the University of Reading Research Ethics Committee in 2012 and 2014.

During Phase 1, from August to October 2012, research was conducted with a total of 60 participants. Three focus groups and community mapping activities were conducted with 24 participants in the case study rural community, comprising separate groups of men, women and young people (8 in each) to map access to land and other resources. The focus group discussions focused on cashew cultivation, land use and inheritance practices, changing livelihood opportunities, perceptions of poverty and community members' views about increased cashew cultivation, food security and access to land in the future.

Semi-structured interviews were conducted with 26 participants involved in cashew cultivation from a diverse sample of 13 households in Seketia, the rural community in Jaman North, Brong-Ahafo region. Two participants of different genders and/or generations from each household were selected where possible to provide insight into access to land for different groups and intra-household divisions of labour and resource allocations. The majority of interviewees were of Bono ethnicity, a sub-grouping of the Akan, while one was Fante, another sub-grouping of the Akan, and two were of Nkona (Nkorang) ethnicity, who live mainly in Brong-Ahafo region. All interviewees were Christian, belonging predominantly to the Presbyterian, Roman Catholic or Pentecostal Church. The majority of households in the sample were male-headed, with three de-jure female-headed households, headed by widows and one de-facto female-headed household, headed by a married woman whose husband usually stayed in Sefwi, Western region to manage his cocoa farm, visiting and sending remittances regularly.

Semi-structured interviews were conducted with 10 key informants at the village, district and national levels, including local elders, the chair of the Unit Committee, representatives of the Cashew Growers Association and Cashew Buyers Association, representatives of the District Agriculture Office, representatives of the Cashew Desk at the Ministry of Food and Agriculture, Accra and an international NGO. Table 1 summarises the research methods used and the number of participants.

Table 1: Research methods and number of participants

Research method	No. of men (aged over 25 years)	No. of women (aged over 25 years)	No. of young men (aged 14-25)	No. of young women (aged 14-25)
PHASE 1:				
Focus groups and community mapping	8	8	3	5
Household interviews	9	9	6	2
Key informant interviews:				
Village	5	1		
District	1			
National	3			
Total participants in Phase 1: 60	26	18	9	7
PHASE 2:				
Participatory feedback workshops in rural community	10	11	5	6
Strategic stakeholder workshop	1	10		
Key informant interview:		1		
International level				
Total participants in Phase 2: 44	11	22	5	6

All the audio-recorded interviews and focus groups were transcribed and translated into English and analysed thematically, drawing on the literature on access to land, food security, rural vulnerabilities and the intergenerational transmission of poverty. Analytic summaries of each interview and focus group were written to assist in identifying the overarching themes for this report.

During Phase 2, in March 2014, a series of participatory feedback workshops were held with men, women and young people in the rural community and with strategic stakeholders working at national level. A total of 32 community members and elders, the majority of whom had participated in the first phase of the research, were invited to participate in a series of workshops to discuss the findings, rank their priorities for action and to co-produce a short participatory video that aimed to generate discussion with strategic stakeholders and to disseminate the key research messages for policy and practice. The first workshop was held with 10 male elders and farmers and 11 female farmers, with discussions held in separate gender groups. The second workshop was held with 11 young people (aged 17-24), comprising 5 young men and 6 young women, with some discussions held in separate gender groups (see Table 1). Informal interviews were also conducted with the Manager and other members of a small local cashew processing co-operative and a Ghanaian export business owner as part of the participatory video process.

Following filming and the initial edit, the video was screened in the rural community to an audience of approximately 40 participants and community leaders, including the Head of the District Assembly, to verify that participants were satisfied with this visual representation of key research messages and to generate further feedback and discussion. The preliminary findings and video were then presented and discussed further in a workshop in Accra with 11 strategic stakeholders working at national and international levels, who were also invited to contribute to the video. Participants included representatives of the African Cashew Alliance, the Africa Cashew Initiative of GIZ (the German Government Agency for International Cooperation), the Ministry of Trade and Industry and the Hunger Project Ghana. The audio-recorded workshop discussions and an additional strategic key informant interview were transcribed and analysed for this final report. Final edits were made to the video that accompanies this report. Although the small purposive sample of participants recruited for this research cannot be seen as representative of cashew farmers and other stakeholders in Ghana, it provides in-depth insights into the perspectives of different stakeholders involved in cashew production at local, district, national and international levels.

4. Profile of the case study rural community

As is the case for the whole of Jaman North District and the majority of Brong-Ahafo Region, Seketia, the case study rural community, lies in the forest savannah transition zone of Ghana, which is highly suitable for cashew production (Dedzoe et al. 2001). The land is fairly flat with a few hilly areas and is located at an elevation of 276 meters above sea level. The major vegetation is woodland with a few patches of semi-deciduous secondary forest found around water sources (Jaman North District Assembly, 2014); the majority of land surrounding the village is used for farming purposes. The District Assembly notes that the District is facing a serious threat of deforestation through pressures from human and animal activities, such as housing expansion, farming, overgrazing, bushfires and timber exploitation, which have contributed to the seasonal drying up of rivers and other water bodies.

There are two main rainfall patterns, the major season (April to July) and the minor season (September to November), with a dry period in August. The mean annual rainfall in the district ranges from 120mm to 178mm per annum (District Assembly, 2014). Figure 3 shows a comparison of mean monthly rainfall from Figure 3 in Dedzoe et al. (2001) and from the TAMSAT rainfall dataset for the nearest station at Wench, located at 7.73°N latitude and 2.21°W longitude, or approximately 73 km east of Seketia, the case study rural community. Although covering different time periods and one is based on station data (Figure 3a), while the other is a satellite-based rainfall estimate produced by TAMSAT (Figure 3b), the two annual distributions of rainfall are quite similar over these two time periods.

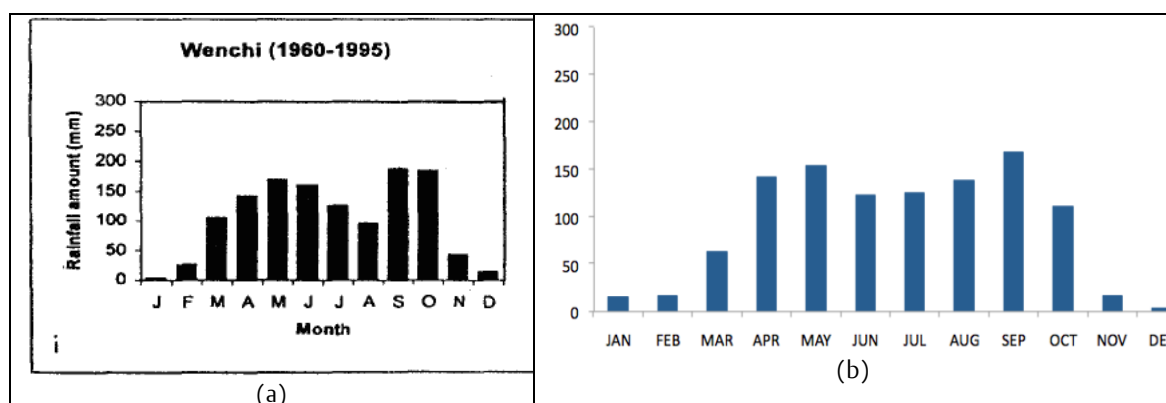


Figure 3: Mean monthly rainfall in mm for Wenchi, Ghana over the 1960-1995 time period (from Figure 3 in Dezdoe et al. 2001) and for the same location over the 1983-2012 time period as derived from the TAMSAT monthly rainfall estimates.

As shown in Figure 4, the time period covered by the research (2011 and 2012) does not appear to deviate substantially from long-term average rainfall conditions, though there may have been locally variable rainfall patterns that could have impacted on cashew and food crop yields in 2011 and 2012.

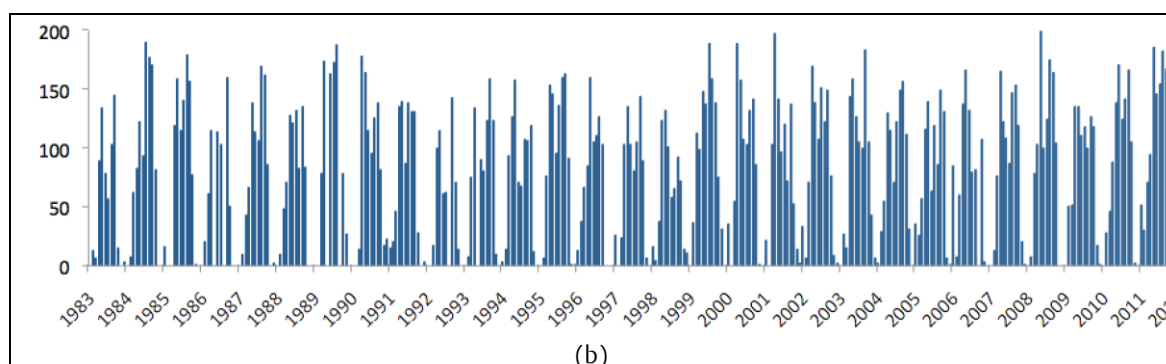


Figure 4: Monthly rainfall from Jan 1983 to Dec 2012 in mm for Seketia, Ghana (source: TAMSAT monthly rainfall estimates).

The population of the village was approximately 1,698 in 2000 (Ghana Statistical Service, 2005). With a population growth rate of 2.3% per annum in Brong-Ahafo region (Ghana Statistical Service, 2012), the population of the village is estimated to be 2,088 in 2013. The population is composed mainly of Bonos, a sub-grouping of the Akan ethnic group, who are the indigenes, and other ethnic groups such as the Dagartis who have migrated from the Upper West Region of Ghana.

The majority of the population are farmers, which is a reflection of the general economic activities of the majority (70%) of the residents of Jaman North District (District Assembly, 2014). The production of yam, maize, cassava, plantain and cocoyam is considered generally high, as they constitute the main food staples; the District Assembly (2014) suggests that the District is self-sufficient in terms of access to food, since the preferred food staples are always available and at affordable prices in the district throughout the year. Farmers' access to Agriculture Extension Agents (AEA) in the district is generally poor, with an AEA/farmer ratio of 1:1,500, which is higher than the national/ desired ratio of 1:1,000 (District Assembly, 2014). The lands in the District are owned by the three paramount traditional authorities who have control over the use of land within their jurisdictions. The average farm size in the District is approximately 1 hectare (2.5 acres), while the proportion of women with access to land for cultivation is estimated to be 30 per cent (District Assembly, 2014).

Approximately 240 households live in the rural community, with an average household size of 7.1 people (Ghana Population and Housing Census, 2000). The community has serious housing problems ranging from poor roofing to heavily cracked walls which cause serious hazards. Houses with thatch roofing are also at risk of fire when people cook indoors. Homeowners try to renovate their houses with their small income when houses collapse; walls are often rebuilt with locally moulded bricks, and roofs which blow off during the rainy season may be replaced with aluminium roofing sheet. A few new houses are built annually, but many remain uncompleted due to financial difficulties.

The village only has one communal pit latrine, with very few private latrines, and four boreholes to provide safe drinking water, which participants reported broke down frequently. There is a rural health clinic, school and several church denominations. Gross enrolment rates for kindergarten and primary school are generally high in the District (100% and 73% respectively), but progression from Primary to Junior High School (60% gross enrolment) and Senior High School is poor (District Assembly, 2014). Water and sanitation-related diseases (malaria, diarrhoea and intestinal worms) constituted the highest reported cases in the District, 2007-9 (District Assembly, 2014).

5. Research findings

5.1 Mapping livelihoods, food security and access to resources

Most community members relied on farming for their livelihood. They cultivated cashew, food crops, such as maize, yam, cocoyam, cassava and plantain and beans, fruit and vegetables, such as okra, tomatoes, garden eggs and pepper. The women worked with their spouses on the farms, but also had their own farms. Some members of the community were also teachers, tailors, carpenters or mechanics or had small shops or engaged in other small business activities. Many women earned income from the sale of peppers, tomatoes and garden eggs or from the sale of cooked food. Most of the food crops, such as yam, maize and cassava, were used for household food consumption, but some participants produced enough food to sell surpluses for income. Several interviewees also had small livestock, such as goats, sheep and fowl which they sold when they experienced financial difficulties, or occasionally consumed. An estimated half or more of the population of the village also had cocoa farms in the Western region of Ghana, where they hired labourers and/or stayed there for periods, especially during the cocoa harvest. Young people, especially young men, and other community members experiencing poverty, such as widows and older women, often worked as day labourers on other people's farms to earn money to buy food or other basic necessities. They usually earned 2-6 GHS [equivalent of 0.66 - 2 US\$] per day. Some young people also migrated to the Western region to work on the cocoa farms, or sought work, training or apprenticeships in towns and cities in Ghana or migrated to other countries such as Nigeria, Libya, Spain and other countries in Europe or the USA. Several interviewees relied on remittances from adult kin living elsewhere in Ghana to help pay the bills.

In the focus groups, men, women and young people all identified a range of natural and community resources that were important to them. Men tended to prioritise their farms, the health clinic, the school, the churches, and the roads as a route out of the community that enabled them to access markets for their produce. Women tended to prioritise the local market in the village where they sold vegetables and food crops (see Figure 5), the churches, the boreholes where they fetched water, their farms, the health clinic, the school, the roads and the river, located two miles away, from which the women and children fetched water, load bearing on their heads, when the boreholes in the village broke down. The women also reported having to wake at midnight to queue for water until dawn when only one borehole was in operation. The young people tended to prioritise the

school, the churches, the football field, the farms and the roads, as a means of moving away from the community to continue their studies or to pursue employment opportunities (see Figure 6).



Figure 5: Women and children selling foodstuffs at the local market



Figure 6: Young people's participatory map of the rural community

Participants reported that they usually walked to their farms, which were located 1-4 miles away from their homes in the village. Men were usually responsible for cutting down trees, clearing the land and raising the mounds, while women intercropped food crop seedlings and were responsible for weeding, maintaining and harvesting the crops. Children also helped women with planting, weeding and harvesting crops and boys were often responsible for tending livestock (sheep, fowls).

While some women reported that the income from the sale of farm produce was usually pooled to meet the family's needs, they also said that a husband or wife may maintain separate budgets for income earned through their own activities. Some women said that men controlled the income from cash crops such as cocoa and cashew and/or allocated a portion of the cashew plantation to their wife:

'The men do not usually disclose income from the sale of cash crops. He uses his discretion to spend the money. The woman has little say'.

'By tradition, some men allocate a portion of the cashew plantation to their wives and tell them to sell and use the money to cater for themselves. The men do not usually give them the money'.

Others reported a more equal sharing of the proceeds of cash crops between spouses: *'If the two of you jointly financed or worked together on the farms, he makes you aware of how much income is generated and the two of you take decision regarding how to use it'.*

Men, women and young people defined those who were wealthy in the community as those who could meet the basic needs of the family, could afford to hire labour to work on their farms, thereby increasing their yields. They said that wealthy people had larger, well built homes, could afford to eat good quality food, the children studied at higher levels of secondary and tertiary education, they perhaps had consumer goods such as a car, could leave important assets to their children to inherit, did not have to ask for help, such as loans, and could afford to *'take care of the poor people'*. They regarded a person of average wealth as having a small farm which he/she depended on to support the family, they were able to meet their basic needs (for food, clothing, healthcare, housing, education) and did not depend on others. They regarded poor people as those who did not have adequate means to provide for their children, they could not afford to pay for National Health Insurance, for children's education, or to feed the family. They all thought that only a small proportion of the population of the village was wealthy, and the vast majority was either of average wealth or was poor.

Participants reported that they usually ate two or three times a day. Just over half of the interviewees (14/26) said that they usually ate twice a day and just under half (12/26) said they ate three times a day. Many participants perceived the income from cashew cultivation as helping to alleviate hunger and to pay for children's educational costs. As one young woman (aged 15) commented: *'At first, sometimes we don't get food to eat before going to school. Now that the cashew work is there, we get food to eat every day. We also get books and pens now at school'.*

Household spending on food varied between less than 1 GHS [equivalent of 0.33 US\$] per day during harvest, to up to 10 GHS [3.33 US\$] per day during the 'lean season', with most interviewees reporting spending 3-5 GHS [1 - 1.66 US\$] per day on food during this period. May - August were reported as the most difficult months of the year, as farmers were waiting for the food crops to mature and the income from cocoa and cashew had been used up. Participants sometimes experienced food shortages during this 'lean season' between harvests, although if families had significant land available for food crop production and the yield was good, food stores could sometimes (rarely) last the whole year. For some interviewees, food stores only lasted for approximately five months. Food crop yields were reported to be heavily dependent on sufficient rainfall and most participants were not able to afford fertilisers, pesticides and weedicides.

Participants reported adopting a range of survival strategies to cope with poverty and food shortages, such as reducing food consumption to one or two meals per day, eating less nutritional food, relying on cassava or maize flour for their staple food, rather than their usual staples of yam, cocoyam or plantain, buying food on credit, working as day labourers' on other people's farms, selling or eating livestock and asking for help from family members. Some women said that they struggled to ensure that their children could eat regularly and sometimes bought cooked food such as rice for them to eat. They also sometimes sent young children to stay with other relatives. Many participants were aware that food shortages and poor nutrition were most harmful for children, in terms of their health and development and made sure that children had food to eat, even if adults' consumption was reduced. They also reported that food shortages and famine negatively affected

children's ability to concentrate at school and could result in poor school attendance, including truancy due to children hunting for bushmeat to obtain food.

5.2 Changing access to land and inheritance practices?

The land that participants cultivated was regarded as 'family land', which was allocated to different family members in large extended family/ clan groups by the family head. Chiefs were regarded as custodians of these 'stool' or 'family lands' (Berry, 2009) and had an important role in resolving land disputes. Traditionally among the Akan, land was transferred to younger generations through matrilineal inheritance practices, whereby maternal nephews would inherit their uncle's land. However, since the introduction of the Intestate Succession Law (PNDC law 111, 1985: Kutsoati and Morck, 2012), participants reported that matrilineal inheritance practices were rarely observed and there had been a shift towards patrilineal inheritance so that widows and their children (sons and daughters) could inherit directly from the husband/ father. One young person explained: *'Even though we farm on our mother's land, we do it most often on our father's lands. This is because we get our inheritance from our father's side'*. This shift to predominantly patrilineal inheritance practices was welcomed, since previous practices were regarded as having detrimental impacts on widows and children, who might be forced to leave the home and land they had shared with their deceased husband/father.

Women appeared to have better access to land than in other regions, such as in Northern Ghana; they gained access to land through their husband, in addition to being able to farm on land belonging either to their father's or their mother's family. Newcomers and migrants were able to gain access to land through negotiating with the chiefs and family heads and engaging in share-cropping arrangements, whereby they cultivated the land and shared the harvest with the landowner, gaining ownership of half or a third of the produce following the harvest, and in the case of cashew, gaining ownership of half or a third of the land.

Increased cashew cultivation was reported to be leading to greater competition for land and consolidating communal property rights into more individualised systems of property ownership, since tree crops, such as cashew, oil palm and teak were regarded as an individual's property. One older man commented:

'Yes, it has changed our inheritance system. Previously, we can inherit the lands that our grandfathers farmed on. But now that is not possible since nobody will allow his cashew plantations to be inherited by external relatives. It is for only your wife and children, not for the external relatives'.

Cashew was thus regarded as individual property to be passed on to one's immediate descendants. People were aware of the Intestate Succession Law and increasingly made written or verbal wills to safeguard the inheritance of their property. Few interviewees had land titles or had registered their family lands, except for those who had cocoa farms in Western region, which they had bought, obtained through share-cropping arrangements or inherited and therefore had land titles to this land. Following the death of male heads of household, cocoa farms were often divided into three parts and shared between the husband's family, his widow and children or sold to pay off debts.

Due to the individualised nature of property rights of tree crops, the approval of family heads was generally needed to change land use from food to tree crop cultivation. Widows were usually able to continue to grow food crops on their deceased husband's land following his death, especially if they had children to support, but if they remarried outside of their husband's family, widows could not continue to access the land. Widows and newcomers were subject to regulations about growing cashew and other tree crops on land to which they only had usufruct rights: *'A widow is allowed to farm on her late husband's land but only for cultivation of food crops and not cash*

crops like cashew' (young woman). Young women's comments suggest that married women regarded cultivating a portion of their father's land as a vital means of livelihood security in the event that they lost access to their husband's land after his death: *'A married woman still needs to farm on her father's and husband's land to prevent loss of land at her father's side when the husband is no more'*. Indeed, some instances were reported where widows' continued access to their deceased husband's land was denied by his relatives.

Widows who had inherited cashew farms from their deceased husband thought it was important to continue to cultivate cashew to safeguard their land inheritance. For example, one widow (aged 40) commented: *'Even though it has its disadvantages, I am doing it to secure my late husband's land to prevent people encroaching on it in future...I am left with a small part of the land because people have been farming on it, so if I don't, they would take it from me'*. Others reported restrictions imposed on widows from expanding cashew farms. For example, one widow had replanted her deceased husband's cashew farm following destruction by bushfire four years previously. She had been told by her husband's family not to expand the cashew plantation:

'The family land I am farming currently is just a portion of the land. The family members have actually told me not to expand the farm. This is because they fear that if people keep on expanding their cashew farm, it may create food shortages. So if I should disobey and expand the cashew farm, this may generate conflict between us'.

Some young people also reported that they had not inherited their father's land and found it very difficult, when they came of age, to re-claim their inheritance from relatives who had taken the land following their father's death, resulting in family disputes. Writing wills was regarded as a way to help secure children's inheritance: *'Normally some people seize the property from the children if the will is not made'*. Land disputes and conflicts within and between families were reported to be common, but most were settled amicably by the chiefs and elders. Some land disputes between chiefs from neighbouring communities were reported to be the subject of ongoing law suits which had lasted for several years, with an agreement that community members could continue to farm on the land until the case was resolved.

5.3 Impacts of increased cashew cultivation on food security and poverty alleviation

Most participants had been cultivating cashew for between three and ten years at the time of the research. The estimated size of participants' cashew plantations varied considerably from 2 acres cultivated by one widow, to 40 acres cultivated by a middle-aged married man, who was not originally from the community and had gained access to the land through his wife's family. There were no large-scale commercial cashew plantations in the community; the chief noted that there was insufficient land available for this. Many participants were not aware of the exact size of their farms. Cashew was usually harvested in the period from February to April each year. Pruning cashew trees was regarded more as 'men's work' than women's, but widows or women whose husbands were away either hired labour or did this work on the cashew plantation themselves. Women and children usually gathered the cashew nuts and/ or labourers were hired to harvest the cashew. Participants sold the cashew in the village to agents of the cashew buyer companies such as Olam, a company based in India or to other buyers reported to be from Vietnam, Singapore and other Asian countries.

Many participants thought that increased cashew production in recent years had helped to improve their living standards and enabled them to pay for their children's education. Some commented that the cashew income had even enabled some families to support their children through to tertiary level education. It had enabled many families to renovate and rebuild their homes with

better quality materials, although these renovations often took a long time to complete, as shown in Figure 7. Since many participants also had cocoa farms in Western region, the sale of cashew provided a welcome additional cash income following the cocoa harvesting season. As one male farmer commented:

'There has been a positive change; previously our parents only went to the Western Region to cultivate cocoa so when the harvesting was over, there was not any other work to do until the next cocoa season. But this time round, by the time the cocoa money is finished, income from the cashew will be ready so we are able to balance between the seasons, with money from both cocoa and cashew'.



Figure 7: Renovating homes with the income from cashew production

Participants reported that cashew had been grown for many years in neighbouring Côte d'Ivoire. People started growing cashew in the village when they saw other farmers making a good income from cashew production. They commented that the climate and soil were particularly favourable for cashew cultivation, especially since many community members' cocoa farms were becoming less productive and the food crops, such as maize, that they used to rely on for sale as well as consumption, were not producing such good yields in recent years. One community elder also commented that relatively unproductive 'waste' land could be used for cashew cultivation.

A key tension in relation to the expansion of cashew plantations in the community was the extent to which this would affect food security in future. Although intercropping of young cashew plants and food crops was possible in the first three to five years, when cashew trees matured, the dense canopy and root system of the tree means that intercropping is no longer possible after the first five years. Participants were aware of this potential difficulty and were concerned that the loss of land for food crops could lead to food insecurity in future. For example, male farmers commented: *'Right now, we get income to support ourselves, but in the future we will run out of food crops since we would have used all the land for cashew cultivation'*. Similarly female farmers, who are usually responsible for providing food for the household, explained: *'You cannot grow crops on the land once it has been used for cashew. So it means that we will run out of foodstuffs very soon and famine will increase'*. They noted that they now had to travel to the nearby market town to buy more foodstuffs than previously. Young people were also concerned about the future impacts of increased cashew cultivation on land that they and future generations would rely on for food production: *'What our parents are doing now is not good, it will affects us and our children in future'*.

In view of these concerns, several participants recognised that some land needed to be reserved for food crops and some families had allocated portions of their land for food crop cultivation. Indeed, the chiefs had made public announcements calling for people to stop the expansion of cashew and reserve a portion of their land for food crops:

'There has been a 'gongon' beating [public announcement] to announce that already by the chiefs, but the young ones don't listen, before you realized the mounds are made ready for planting the cashew. Now we need to make announcement through the district assembly so that those who have the cashew farm already will take it like that and stop it'.

A representative of the District Agriculture Office estimated that the majority (60-70%) of the land in the district was now used for cashew cultivation, reducing the land available for other crops. Some farmers recognised the importance of not using all their land for cashew and having land available to adapt to new crops, as one male farmer commented: *'In future, there may be the discovery of the cultivation of new crops. So if I use all for growing cashew, I wouldn't have any land for the cultivation of that crop'.*

Agricultural extension officers had changed the information they gave to farmers and, at the time of the research, advised them to plant cashew at 10 by 10 metre distance, to enable intercropping with food crops:

'The moment they cover the place with the cashew, nothing can be planted there. But the way we are teaching them now, you can continuously use the land meanwhile the cashew plants will be there so that in the next 15 to 20 years, you can still utilise the land. [...] Now we are planting at 10 metres by 10 metres. That will give you a lot of spaces in between the plants which you can use for maize, yam, plantain, everything you want to do. This is what we are teaching them now. In fact a lot of them are adhering to our advice now'.

Although providing this education about planting distances and getting farmers to 'buy into it' was challenging, the District Agriculture Office representative felt that this intervention had come in time to avert a major problem of food insecurity, as had been seen in the Sefwi area of Western region, where many participants had cocoa farms:

'If this thing had not come in, I would say that in the next ten years, it would be very difficult to get food as it is happening somewhere in the Western Region, around the Sefwi area where they are having problems with the land for food crops. Land in those areas is not available for cultivation because of cocoa. The people have to export food from here to the area because of food shortages as the cocoa farms have taken over the lands. We want to avoid that situation here'.

African Cashew Initiative representatives pointed out, however, that the 10 by 10 metre spacing approach only allows intercropping for the first five years, but the cashew trees then grew too large and thus this was *'not a solution in the long run'*. They suggested that an alternative approach of 'alley cropping' of cashew nuts with food crops at a distance of 30 metres had proved successful in northern Ghana.

Despite Agricultural Extension Officers' advice and farmers' awareness of the problem, many participants thought that land disputes, both within and between families had increased in recent years, as people sought to use as much of their land as possible for cashew plantations and encroached on others' land to grow food crops. As an elder commented:

'Last year for instance, people with three thousand mounds used all to grow cashew and when it happens like that, then the person tries to go on others' land to farm because he

can't grow yam under the cashew, hence bringing up disputes on the land, and this will cause us a lot of suffering in the next three years'.

Land disputes were usually resolved through the chiefs and other community leaders and the Unit Committee, although occasionally disputes had to be settled in the law courts.

5.4 Global-local interdependencies and power relations

The research demonstrated how small-scale farmers, who used to predominantly grow food crops, and sometimes cocoa in Western region, were increasingly tied into the global economy as they expanded their cashew production. This made them increasingly vulnerable to price fluctuations, both of cashew as an export crop, as well as that of food, in global markets. A representative of the village Cashew Buyers Association explained that cashew prices fluctuated within the season, explaining that in 2011, the price varied between 2 GHS per kg, to 1 GHS, ending the season at 1.20 GHS. This made it very difficult for farmers to be certain of the income they would earn. The price had increased to over 2 GHS per kg at the beginning of the cashew season in 2014 (equivalent of approximately 0.66 US\$ per kg), although buyers and intermediaries suggested that this was likely to decrease as the cashew season progressed, due to the decline in the quality of the nuts if they could not be dried properly following rainfall.

Many participants highlighted the problem of 'middle-men' or intermediaries exploiting small-holder farmers, since farmers lacked the means to transport their produce directly to buyers and were forced to accept the prices set by intermediaries. In the focus group, the men explained: *'Cashew is exported to China and India. They buy most of it through middle men. They use the local people as purchasing agents who also reduce the prices, so that they end up cheating the farmers.'*

Farmers and Agricultural Extension Officers had sought to establish an Association of Cashew Growers and an Association of Cashew Buyers in the village to try to negotiate better prices with the agents and buyer export companies. In their experience, however, such associations and cooperatives were generally in a weak bargaining position to negotiate prices with agents. In addition, some farmers were reluctant to support and contribute financially to an association and could not afford to wait until later in the season to sell their cashew. As one male farmer commented: *'We set up a group to help us bargain well on the prices, but because the government is not part of it, the buyers are able to have their way by offering us anything they like'*.

Many community participants and key informants at the local, district and national levels thought that the Government of Ghana should regulate the sale of cashew and guarantee the price, in same way as cocoa:

'...here is the case, the private companies come with their own price. At the beginning, they may say a kilo will cost so much but because there is no guaranteed price, farmers have no option but to sell to them'. (representative of the District Agriculture Office)

'With respect to the buying, we would beg that if the government can intervene it should, so that there would be no representatives or middlemen. There should be a fixed price just like the price tag on cocoa. It would help us a lot because the person knows that cashew is bought and sold at this price. So there is no cheating'. (representative of Cashew Buyers Association).

The Cashew Growers Association reported that they had sent petitions to local government representatives and tried to lobby Government representatives of the Ministry of Food and Agriculture responsible for cashew about pricing and the need for government support, but their efforts to date had been in vain. Ministry of Food and Agriculture representatives and other stakeholders suggested that government involvement was unlikely at present, since the volume of

cashew production was still relatively small compared to other export crops. They also pointed to issues of inconsistent quality of the produce and the need for the Government to add value to primary products through, for example, processing taking place in the country, before the Government would become involved in buying cashew from small-scale producers and guaranteeing a minimum price.

Strategic stakeholders highlighted the fact that there is a relatively high demand for cashew in Ghana, due to the availability of cashew processing facilities, a favourable political climate for export companies, combined with limited raw material. This means that cashew farmers in Ghana generally received higher prices for their cashew in comparison to cashew farmers in neighbouring countries, such as Ivory Coast. For example, the farm price of RCNs in Ghana in 2014 was the equivalent of 250-300 Francs CFA [equivalent of 0.52 - 0.62 US\$] per kg compared to 200-250 Francs CFA [0.42 - 0.52 US\$] in Côte d'Ivoire (www.anacarde.com, 2014).

The Jaman North District Assembly (2014) note that the export of raw cashew by local and international merchants seriously affects the comparative economic development of the District and suggests that large-scale processing is required to encourage farmers to increase production. Recent news reports suggest however that following successful lobbying by the Ghana Cashew Industry Association, the Government of Ghana is committed to doubling production of cashew in the period 2013-16 (African Cashew Alliance, 2013) and the number of processing plants is being increased from the current total of 12, as large processing companies establish processing plants in Ghana, particularly in Brong-Ahafo region (Ghanaweb, 2014).

According to an African Cashew Alliance (ACA) representative, the vast majority (90%) of RCNs currently produced in Africa is exported for processing elsewhere (mainly in India and Vietnam). However the situation in Ghana is rather different from other African cashew producing countries, such as Ivory Coast, which has a much higher volume of cashew production. Recent investment in cashew processing facilities in Ghana, including four in Brong-Ahafo region, means that processing facilities exceed current levels of cashew production. From ACA's perspective, the emphasis in Ghana should be on increasing the quantity and quality of cashew produced and ensuring better market linkages between farmers and processors, rather than emphasising a need for more processing facilities:

'What is required in Ghana at the moment is to establish good linkages between the farming communities in the northern regions and the processing facilities, so that the cashew actually does reach the factories. Because at the moment, especially with the ban on cashew from Ivory Coast, the processors are looking to, where am I going to get my cashew from? Being in competition with external traders, let's say, who are going to take the raw cashew and export it to India, Vietnam while there's processing units within Ghana that do not have sufficient supply' (representative of ACA).

Ivory Coast's recent enforcement of the ban on cross-border trade of agricultural products between Ivory Coast and Ghana (the law was originally passed in 1991, but only enforced from 2013) was regarded as having a mixed impact. Some cashew farmers and young people in the rural community (located within a few kilometres of the Sampa border crossing with Ivory Coast) appeared to welcome the ban; they felt that imported cashew from Ivory Coast was often sold at lower prices, which made it difficult for them to negotiate higher prices for their cashew produced in Ghana. Strategic stakeholders thought that the ban was likely to have a detrimental impact on cashew traders, processors and buyers in Ghana, especially in Jaman North and other districts near the border, since it led to a reduced supply of raw material being sold in Ghana for processing and for export. They suggested that the ban might also be linked to the current and future expansion of

cashew plantations in the study location, since farmers may be keen to plant more cashew trees to obtain higher yields in order to meet the increased demand for cashew.

5.5 Reducing risks and preventing the intergenerational transmission of poverty?

The research highlighted a number of problems facing small-holder farmers in the research location which restricted the productivity of their farms and increased their vulnerability to shocks and the risk of the intergenerational transmission of poverty. These included pests and diseases affecting cashew and food crops; being unable to afford pesticides, weedicides and fertilisers for food crop production; difficulties accessing 'agric' improved cashew seedlings that produce higher yields; being unable to hire labour to maintain, harvest and expand cashew plantations; difficulties accessing credit for investment and paying back loans; declining soil fertility due to not being able to leave land fallow and continuous cropping practices; insufficient rainfall, which had badly affected the maize and yam yields the year of the research; difficulty storing food crops, leading to post-harvest losses of maize and fruit and vegetables such as tomatoes; insufficient cashew storage facilities and theft of produce; lack of vehicles and costs of transporting produce to markets; and exploitation by intermediaries and cashew buyers who forced farmers to accept low prices.

A Cashew Development Project, funded by the African Development Bank, had been in operation in the district from 2003-2008 and had provided access to loans to groups of farmers to expand their plantations. Strategic professionals reported that many of the farmers had not been able to repay their loans and the project had been taken over by the Cashew Initiative of GIZ (the German Government Agency for International Cooperation), which provided assistance with inputs and training.

Few of the cashew farmers interviewed reported receiving any assistance, training or support from NGOs or governmental agencies, except for access to subsidised inputs, and some limited education and technical advice provided by Agricultural Extension Officers. Strategic professionals highlighted the fact that the human and financial resources of the District Agriculture Office were heavily overstretched, with very few extension officers available to cover a large area, they lacked transport and experienced other logistical and resource constraints.

Government initiatives to provide loans and micro-finance that farmers could use to invest in inputs and labour to increase yields were welcomed, although some farmers experiencing poverty did not think that they would qualify for loans and/or feared not being able to repay any loans offered. Despite subsidised inputs, many farmers with smaller farms, especially widows and other female farmers, struggled to pay for pesticides, weedicides and fertilisers to improve food crop yields and could not afford to hire labourers to weed and prune cashew trees and to harvest the cashew. The poorest groups, such as older women and children, were sometimes forced to rely on day labour working on cashew plantations to earn money to feed themselves. During filming for the video, one older woman (aged 85) was working as a day labourer to harvest cashew with her young grand-daughters (aged 12 and 6 years) on a Saturday (the older girl attended school during the week). They earned 2.50 GHS [0.83 US \$] per large bucket of cashew collected for the land owner. The older woman had her own farm of approximately two acres which could produce four or five buckets of maize for sale and her husband had a larger farm but in recent years, he had become blind and she was not able to maintain it.

Some strategic professionals thought that government should provide assistance to cashew farmers with spraying cashew with pesticides to increase yields, similar to the support provided to cocoa farmers. However, an African Cashew Initiative representative commented that cashew could be easily produced in West Africa without insecticides, pesticides and other chemicals. Rather than

relying on chemicals to improve yields, a recent ACi study (2013) shows that pollination initiatives such as beekeeping could help to raise cashew yields in West Africa substantially. Although not as dramatic an increase as in Benin, yields increased in the study locations in Ghana where beekeeping was integrated on cashew plantations by an average of 116.7% (ACi, 2013). Beekeeping also helped to increase farmers' incomes through the sale of hive products (honey, beeswax and propolis).

Many participants also commented on perceived environmental and climate-related risks. These included: insufficient and more unpredictable rainfall patterns which reduced food crop yields (particularly maize and yam) and increased food prices; the problem of bushfires which could destroy food crops and severely damage cashew plantations (although community mobilisation efforts appeared to be effective in reducing this risk); and flooding of the land near the river and sometimes homes in the lower part of the village. Many participants thought that insufficient rainfall was related to deforestation and teak logging activities, while some also saw this as a natural phenomenon or related it to spiritual beliefs: *'when we are experiencing inadequate rainfall, it is believed that the land has "spoiled" spiritually. As such we have to see the elders to pacify the gods so that they will ensure we get adequate rainfall'*. Participants were involved in a government tree planting initiative to address deforestation on communal land near the river. In response to the changing climate, Representatives of the District Agriculture Office thought that farmers needed to be flexible, diversify and adapt their practices, such as growing cowpea to make up for the loss of maize and so on.

Almost all participants regarded education and formal sector employment as the most important priority to prevent the intergenerational transmission of poverty. The income earned from cashew was viewed as a means to support children's education to enable them to pursue formal sector job opportunities in the city and provide for their parents and elders in old age as part of the intergenerational contract (Collard, 2000): *'Money from the cashew can help us to finance our children's education so that they can come and take care of us in the future'* (men, focus group). This vision of the future is thus based on a reliance on income from cashew to support educational investments in the younger generation, so that young people will not need to rely on the land to develop sustainable livelihoods in future. Thus, the expansion of waged employment was regarded as the solution to provide jobs for young people in rural and urban areas in the future.

Young people also thought that if land was no longer available for them to cultivate, they would need to rely on formal employment opportunities in future: *'We don't have enough land anymore so we need office jobs here'*. Young people felt that the older generations were reluctant to recognise the problem of insufficient land remaining for food crops due to increased cashew cultivation: *'They [their parents and elders] know but because of the present benefits, they do not want to talk about it'*. They said that it was difficult to raise these issues with their parents and that direction was needed from community leaders and elders, such as family heads: *'Only the heads of families can stop our fathers from growing cashew'*.

Several community participants and some strategic professionals expressed their view that young people were not interested in farming and identified a need for more investment in agricultural and rural development to make it more attractive for youth. Some strategic stakeholders suggested that the school curriculum needed to be revised to include agricultural science at an earlier stage. A male farmer who had developed large cashew plantations, gaining access to land in the community through his wife, commented that despite population growth and the increased demand for land for cashew plantations, sufficient family land was still available for young people who wished to farm: *'I am a migrant but I managed to get land for farming. So, the young ones who are determined in the community can also get access to the land for farming. Others are lazy and do not want to make any investments in agriculture'*.

The views of some young people, however, refute these perceptions and suggest that they did want to develop sustainable livelihoods through farming, but were concerned that their parents and elders were using all the available land for cashew, reducing the potential to grow food crops and inherit land in future. Young people suggested that perhaps *in vivos* transfers of land to young men and young women while their parents and older generations were still alive might be a more equitable means of transferring land to young people. They felt this would help to ensure that young women did not lose out, thereby also fulfilling gender equality and poverty alleviation goals, as one young woman commented: *'Our fathers need to share the land for us while we are young so that man or woman can have equal share in future'*. Indeed, the tendency for cash crops to be controlled by men, and for women to rely on food crop production as their main source of income as well as a means of subsistence for the family, means that women and children are likely to be more adversely affected by reduced availability of land for food crops than men.

However, the research also suggests that women are increasingly cultivating cashew and benefiting from the income this provides, often in the context of their experiences of declining food crop yields on their land. Some widows interviewed had also expanded cashew plantations on portions of land they inherited from their deceased husbands. One widow (aged 75) who lived with three grandchildren next door to her son and his family, thought that increased cashew cultivation was helping to empower women economically: *'Before, women were involved in just food crop cultivation which did not raise much money for them, but the cashew is bringing in a lot of money for them'*. This widow was also a member of a church women's association which had acquired a communal plot of land to cultivate cashew and palm fruit which was sold to support members of the association. If women are able to safeguard their inheritance and access to land and benefit from increased income from the sale of cashew, this may mean that they are able to make greater investments in children's health and education, helping to prevent the intergenerational transmission of poverty.

6. Key messages for policy and practice

In the participatory feedback workshops in Phase 2, men, women and young people involved in cashew cultivation in the rural community ranked a series of priorities for action that emerged from Phase 1 of the research. The ranked priorities, collated from the three groups' responses, are shown in Table 2.

Although the ranking exercise revealed generally consensual views about the most important priorities in the rural community, which participants confirmed in the second feedback workshop, there were some nuanced differences between the views of men, women and young people revealed in the breakdown of the top three priorities for each group (see Table 3).

Informed by their experience of growing cocoa, for which they earn a stable price guaranteed by the Ghana Government throughout the season, both male and female cashew farmers ranked the need for government involvement in guaranteeing a minimum price for cashew as their first priority for action. In the stakeholder workshop that discussed farmers' priorities, strategic stakeholders thought government involvement in buying cashew at a fixed price from small-scale producers in the same way as the COCOBOD was unlikely and could be counter-productive, since farmers would not be able to benefit from price increases in RCN in global markets. Strategic stakeholders also noted that the Government already gave an indicative minimum price for cashew each season and saw market forces as the key means to regulate prices and enable farmers to earn more for their products.

African Cashew Alliance (ACA) and African Cashew Initiative (ACi), key international stakeholders supporting the development of the cashew industry in Africa, instead wished to emphasise community members' priority of forming stronger associations to negotiate prices. The African Cashew Alliance representative linked this to the need to improve the quantity and quality of cashew: *'The more you farm, the better quality and the better their negotiating bargaining power would be when it comes to selling the product'*. ACi highlighted the cashew farmer training programmes they facilitated in Brong-Ahafo and other regions, which emphasised the importance of improving the quality of produce and how this could help farmers to negotiate better prices, as well as significantly increasing yields: *'Our monitoring data shows that they have increased the yields by three times in the last ten years [...] that's actually the type of work we do in order to have improved productivity on the same land and have more land also available for food crops'*.

Table 2: Ranked priorities for action of participants in rural community

Importance	Priority
1	Community development – water, sanitation, health and education
2	Lobby government to guarantee cashew prices each season
3	Diversify sources of income e.g. new crops
4	Raise awareness of land use and food security
5	Cheaper pesticides, weedicides and fertilizers
6	More dialogue between older and younger generations about land use
7	Increase cashew processing in the region to provide more jobs
8	Form stronger association to negotiate prices
9	Access to credit (soft loans)
10	Allocate land to young men and young women while older generation is still alive

Strategic professionals and male cashew farmers thought that it was important to organise farmers into groups to form strong local and national associations to negotiate cashew prices with export companies, processors and traders. In the workshops, men ranked 'forming stronger associations' and 'access to credit' higher than women and young people, reflecting the fact that these aspects of cash crop production tended to be dominated/ used most by men.

New technologies, such as mobile phones and IT software, were regarded as helpful in fostering greater transparency and knowledge about cashew prices and ensuring good governance of co-operatives and local associations. For example, the African Cashew Initiative piloted a 'virtual co-operative' project with SAP software company, developing a smartphone barcode system that allowed traceability of bags of cashew and more transparent prices. According to ACI, this meant that at the level of producer groups in the pilot communities, transactions such as farmer registration, pre-payment, input supply, grading, purchase, logistics and payments were recorded and synchronised in the field via smartphone technology (ACi, 2013). This was regarded as helping to foster greater transparency and good governance: *'So nobody can put anything in the pocket and this has led in two cases for immediate changes in the leaders of the farmers' cooperative'*. Indeed, strategic stakeholders regarded trust as crucial to the success of cashew farmers' associations and co-operatives. They acknowledged that this took time to develop, depended on the personalities of the leaders and usually worked best in more socially cohesive communities.

While both men and women in the rural community saw lobbying the Government to guarantee stable prices within the season as the most important priority, women and young people saw community development in terms of access to water, sanitation, health and education as more important than men. Education was regarded as very important for young people. Women and children were usually responsible for fetching water and other domestic work and were most affected by the frequent breakdown of boreholes in the village. Young people also recognised the need to diversify sources of income and gain new skills in response to changing economic and environmental conditions.

Women and young people in the rural community also appeared to be more concerned about the loss of land for food crops and future generations' access to land than men. They emphasised the need for greater awareness and dialogue about land use and food security in the community and between generations. Many women and young people thought that the chiefs and traditional leaders should stop people from further expanding their cashew plantations in order to ensure that sufficient land was available for food crop cultivation in the present and future. They also raised the question, however, of what could be done to redress the current situation of families who had already used all their land for cashew and now lacked sufficient land for food crop cultivation. Four of the ten women participating in the workshop confirmed that this was the situation their families faced. They explained that some family members who had cocoa farms in Western region had returned to find that all the family land had been used for cashew and there was no land left available for them to grow food crops. In this instance, social capital was crucial; farmers had to negotiate with other family members or family friends, church members etc. to plant cashew on their land and intercrop with food crops in the years before the cashew matured. The women recognised however, that this was only a temporary solution and the land continued to belong to those who owned the cashew trees.

Table 3: Breakdown of top three priorities for young people, men and women in the rural community

Importance	Young people	Men	Women
1	Community development – water, sanitation, health and education	Lobby Government to guarantee cashew prices each season	Lobby Government to guarantee cashew prices each season
2	Raise awareness of land use and food security	Form stronger association to negotiate prices	More dialogue between older and younger generations about land use
3	Diversify sources of income e.g. new crops	Access to credit	Community development – water, sanitation, health and education

In response to the question of whether it mattered if all the family land in rural areas was used for cashew and people were not longer able to cultivate food crops, strategic stakeholders emphasised the importance of farmers spreading risk and not relying on cashew as their sole source of income. Rather than continually expanding cashew plantations to increase yields, strategic stakeholders pointed to the need for greater awareness about good agricultural practices in planting, maintaining and pruning cashew trees, as well as establishing beekeeping and by-product processing (such as using cashew apples to make cashew jam, juices, brandy and using the apples as feed for livestock), as important ways to increase the quantity and quality of cashew production on the existing land. Cashew farmers in the study location did not appear to be aware of the 'alley cropping' approach that ACi found effective in northern Ghana.

Cashew farmers and young people in the rural community emphasised the need for more support and training from Agricultural Extension Officers on best practices in cultivating cashew. They wanted Extension Officers to be closer to farmers and more available to visit their farms and give advice. Furthermore, the Head of the District Assembly highlighted the potential income that farmers could generate from the processing and use of cashew apples in the study location. According to ACi (2013), less than 4% of a survey sample of 80 cashew farmers in six districts in Brong-Ahafo region, Ghana processed cashew apples at the time of the research.

7. Conclusion

This exploratory research with cashew farmers, young people and local leaders in a rural community in Jaman North District, Brong-Ahafo region of Ghana and with strategic stakeholders working at district, national and international levels, has revealed a number of tensions and challenges for policy and practice. The expansion of cashew plantations on family land in rural communities in Ghana is linked to a range of wider concerns about food security, poverty alleviation, gender and intergenerational equality and environmental pressures.

The income that increased cashew cultivation provided helped to improve living standards in the rural community in Brong-Ahafo region, particularly regarding access to better quality food, education, healthcare and housing. Considerable development challenges remain however, as other indicators of quality of life, such as access to safe drinking water and improved sanitation, have not kept pace with other improvements in living standards in rural communities.

Increased investment in the education of younger generations was regarded as a key means of preventing the intergenerational transmission of poverty. This raises questions however about the quality of education that students receive in rural communities and whether this equips young people with the knowledge and skills they need to develop sustainable livelihoods in the future. Efforts are needed to invest in agriculture and rural development to ensure that young people completing education are able to access appropriate employment opportunities that enable them to support themselves and their families.

The research suggests a number of ways in which support for small-holder farmers, especially women and young people, could be improved. Access to credit, affordable inputs and the ability to hire labourers is key to enabling vulnerable households to invest in their farms, increase their yields, diversify and develop sustainable pathways out of poverty. While the income from increased cashew production is to be welcomed, many participants felt that cashew farmers were losing out to intermediaries and export companies who pushed the prices down, and called for government intervention to regulate prices. Young people and women particularly recognised the importance of diversifying sources of income and adapting to changing economic and environmental conditions, but often lacked the means to invest in new income-generation activities due to limited access to 'soft loans' (available from NGOs and other development agencies rather than banks which charge very high interest rates) and savings.

Evidence from the case study rural community suggests that the expansion of cashew plantations is leading to increased land disputes and conflicts, with wealthier farmers able to encroach on the land of poorer farmers, exacerbating existing gender and class inequalities. While local leaders appeared to be able to resolve most land disputes at present, awareness-raising activities could help to ensure that adequate land is allocated to food production in future, that land disputes are minimised and the land inheritance of marginalised groups, such as widows and orphaned young people, is safeguarded. Women and young people, in particular, wanted more opportunities for

dialogue with traditional leaders, elders, family heads and older generations about land use and food security in the present and future.

Reductions in the land available for food crop production are likely to have most impact on women and young people, further marginalising their usufruct land rights. It is unsurprising, therefore, that women and young people placed greater emphasis than men on the need to raise awareness of land use issues concerning the expansion of cashew plantations and future food security. Women in the research location are however also increasingly cultivating cashew on their own farms and benefiting from this additional source of income, which may help to safeguard their access to land and prevent the intergenerational transmission of poverty, if women have more income available to invest in their children's education and healthcare.

The available evidence suggests that good agricultural practices in planting, maintaining and pruning cashew trees, alongside initiatives such as beekeeping, may help to substantially increase cashew yields in West Africa (ACi, 2013; Gilleo et al., 2011). Greater awareness about 'alley cropping' spacing methods for intercropping food crops with cashew may help to ensure that adequate land is reserved for food crop cultivation in the study location and other districts and regions involved in cashew cultivation in Ghana. Increases in yields, alongside the use and sale of by-products (such as cashew apple juice, using the fruit as feed for livestock, honey, beeswax and propolis produced from beekeeping) could make a substantial difference to the income that cashew farmers in Brong-Ahafo and other regions in Ghana are able to obtain from their existing trees and other livelihood activities. This would help to reduce the risk of poverty for future generations, without needing to expand cashew plantations and compromise the area of land available for food crop production.

Global demand for cashew is projected to continue to grow rapidly in the immediate future and cashew-growing areas of Ghana are well placed to respond to this demand (ACi, 2014). As CIAT (2011) note, the suitability of most of the current cashew-growing areas in Ghana and Côte d'Ivoire will increase by 2050, as temperatures rise, while seasonality in precipitation and the number of dry months (five) remain unchanged. The value of land inheritance and the quality of environmental capital for future generations, however, is called into question in the light of global environmental change and volatility in global markets for agricultural products. Policy challenges relate to the level of awareness of, and access to information about, climate-related changes and whether farmers are able to develop the adaptive capacity to respond to changing environmental conditions that may affect particularly food crops and horticulture in future.

In summary, this research demonstrates the need to understand the complex interactions between sustainable food systems, access to land and changing land use in particular places. These are shaped by global and local economic interdependencies, socio-cultural norms and power relations and responses to environmental and climate-related pressures.

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