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Local Environment

The International Journal of Justice and Sustainability

ISSN: 1354-9839 (Print) 1469-6711 (Online) Journal homepage: https://www.tandfonline.com/loi/cloe20

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To cite this article: Suhiyini I. Alhassan, Mohammed T. Shaibu & John K.M. Kuwornu (2018) Is land grabbing an opportunity or a menace to development in developing countries? Evidence from Ghana, Local Environment, 23:12, 1121-1140, DOI: 10.1080/13549839.2018.1531839

To link to this article: https://doi.org/10.1080/13549839.2018.1531839

LOCAL ENVIRONMENT
2018, VOL. 23, NO. 12, 1121–1140
https://doi.org/10.1080/13549839.2018.1531839

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Is land grabbing an opportunity or a menace to development in developing countries? Evidence from Ghana

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ABSTRACT

This study examined the developmental effects of land grabbing on farming households' livelihoods and their adaptation strategies. Primary data was collected from 560 randomly selected farming households in seven regions of Ghana using questionnaire and was complemented with key informant interviews and focused group discussions. The Spearman rank correlation was used to determine the relationship between land grabbing and livelihood outcomes while the adaptation strategies of households were analysed qualitatively using descriptive and content analysis. The results revealed that land grabbing has a significant negative relationship with food production, income, social cohesion, health and nutrition of farming households, but had a significant positive relationship with education and employment of farming households. Based on the empirical findings, this study concludes that land grabbing in Ghana is to some extent a threat to development, as the disadvantages outweigh the advantages of the livelihood outcomes of the households that have been affected by these land deals, although it may yield some development opportunities that would yield benefits to the households in the long term. The policy recommendations are presented.

ARTICLE HISTORY
Received 30 November 2017
Accepted 27 September 2018

KEYWORDS
Land grabbing; livelihood; farming households; Spearman rank correlation; adaptation strategies; Ghana

1. Introduction

Land grabbing has become one of the hottest debates in academic discourse in recent times because of the increasing cases coupled with the sizes of such land deals. Numerous studies have revealed that lands grabbed for plantations of international demanded products such as jatropha and cashew have positively impacted the livelihood of residents of the project's host communities by providing job opportunities.

The rush to secure food supply by increasingly food-insecure nations, the surging demand for biofuels and other energy and manufacturing demands, and the sharp rise in investments in both the land and the soft commodities markets (Daniel 2011). While Sub-Saharan Africa dominated the early years of the land grab debate, other regions have also received prominent attention, including Latin America (Borras et al. 2012) and the former Soviet Union (Visser and Spoor 2011).

Foreign investors perceive Africa as the best destination for land investment because it is where land can be obtained at low cost (Aabø and Kring 2012). A report based on the Land Matrix Database shows that Africa is the most affected region by land deals where there were 754 deals covering 56.2

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million ha of land (Anseeuw et al. 2012). The total land sold out/leased in Africa account for some 48 percent of the total agricultural area in the continent, which is approximately the size of Kenya (Anseeuw et al. 2012). It is claimed that many developing countries in Africa and beyond seem to be keen on adopting a development model that places land grabbing or agri-businesses supported by FDI at the centre of their policy considerations (Richards 2013).

An important driver for land grabbing in Ghana, and the rest of Africa, is the growing global demand for bio-fuels and other plantations. The period from 2005 until now has experienced unprecedented growth in global biodiesel demand and production (Biofuels International 2007). Biofuels accounted for 2.7 percent of all global fuel for road transportation in 2010 (Kemausuor, Akowuah, and Ofori 2013). Global demand for biofuel was projected to increase to about 183.8 billion litres by 2015 (Global Biofuels Outlook 2009). The increasing demand for biofuels can be explained partly by the mandatory targets set by governments to reduce their dependence on fossil fuels in order to mitigate their footprints on the environment and ultimately the climate (Antwi et al. 2010; Kemausuor, Akowuah, and Ofori 2013; Sindayigaya 2011). The increasing trends of the demand for land to undertake investments in plantations by the powerful nations in the weak and vulnerable global south and developing nations, and governments' desire to accelerate development has led to the acquisition of large-scale land from the smallholder farmers for biofuel and cash crops plantations have resulted in the foreign pressures on Africa lands. These have adversely affected livelihood activities of the smallholders in terms of land size, output, savings and total development (Chizoba et al. 2012). Woodhouse (2012) attributes the attractiveness of Sub-Saharan Africa to land grabbers to its weak legislative and regulatory frameworks to protect the interests of existing land users or the general public. Makutsa (2010) adds that the conventional perception that Africa has vast and suitable lands for agricultural purposes has made the region attractive to land investors.

In recent times, Ghana has become one of the destinations for large-scale land deals in Africa, attracting high foreign investment in the agricultural sector. Over the past decade, the Government of Ghana has leased out large tracts of land to investors, mainly foreign-based. One main feature of such land deals in Ghana has been that lands given to foreign investors are larger than those given to domestic investors. The reason has often been that the government perceives foreign firms to possess more capital and technologies than the domestic firms to carry out big investments successfully (Scoones 1998). In addition, the government offers very generous incentives for foreign investors including lower capital requirement, guarantee against expropriation or nationalisation and attractive financial incentives, such as exemptions of income tax on exports (tax holidays) and free custom duties on imports (Rahmato 2011; Tamrat 2010).

The FAO (2008) and Right and Resource Initiative (2012) observed that land grabbing displaces families from their homes and farmers from their fields. This has the potential to interfere with their livelihoods and ultimately deprive them of their basic needs (Thurmond 2007). Relocation of affected people to areas where there is available land for farming either by company arrangement or individual choices is common among plantations across the globe. The impact of households' loss of land to Jatropha plantations in Northern Ghana that land accessibility was not the issue with farmers; rather, accessing land that is close to their homes for purposes of farming, grazing and/or settlement is the major challenge to smallholder farmers (Danso 2015). Yet, governments of developing nations claim that there exist vast agricultural land and that most of these lands issued for investment are "idle" land that can be better managed by foreign investors with sufficient capital resources and advanced technologies without hindering smallholder farmers' livelihoods (Scoones 1998). Contrary to this view, these lands, in reality, have long been used by local communities for farming and are hitherto temporarily left for several purposes, such as shifting cultivation or bush fallowing by local users. As a result, it is scaring that the government's agricultural land investment policy is capable of marginalising rural dwellers by depriving them of an important productive asset which is their main source of livelihoods.

On the other hand, the state owns all land whereas smallholder farmers and pastoralists have only the right to use. For this reason, local communities have no say on land grabbing. Therefore, the

government can transfer any land it wishes to investors without any consultation with the occupants of such lands (Dheressa 2013). This normally happens when the government pays compensation before the investors arrive and do not have to go through the appropriate channels. However, this makes rural communities voiceless because the ultimate power of deciding on the fate of agricultural land rests on the authorities (i.e. governments). Consequently, these communities could see their livelihoods hampered when land is transferred to investors at the expense of their interests. Thus, land grabbing in developing countries, especially Ghana when continued by leasing out farmland for Foreign Direct Investment (FDI) denies farming households of their source of livelihoods. In the literature, most studies that have attempted investigating the effects of land grabbing on livelihood have employed macro-level data which do not present the grassroots' view. This study examined the effects of land grabbing on the livelihoods of farming households in Ghana using micro-level primary data to provide further insights into our understanding of the effects of land grabbing in developing and emerging economics. This study postulates that land grabbing has negative effects on the livelihood outcomes of smallholder farming households in Ghana, as the benefits of land grabbing accruing to the government has been unevenly distributed to the disadvantage of the rural communities that suffer the direct consequences of land grabbing by way of losing their farmlands.

1.1 Scope of land grabbing in Ghana

Any land sale of 1000 hectares and above is classified as land grabs (Cotula et al. 2009). Land grabbing has been defined to mean large-scale, cross-border land deals or transactions undertaken by transnational corporations or introduced by foreign governments (GRAIN 2008). It is also defined as "Taking possession and/or controlling a scale of land which is disproportionate in size in comparison with average land holdings in the region" (Offei 2014). Large-scale land can be arable and marginal but each has a socio-economic use that is likely to favour humans. Land grabbing is not new in Ghana as vast areas of land have been acquired and used for the purposes of establishing plantations. For example, the National Jatropha Plantation Initiative (NJPI), which was initiated in 2006, had a target of developing up to one million hectares of jatropha plantations in Ghana by the year 2010. Up to date, literature is silent on whether this target has been achieved. However, Hughes, Knox, and Jones-Casey (2011) identified over 20 companies, mostly foreign-owned, that are into large-scale plantations in various regions in Ghana. Figure 1 presents a map of Ghana showing the ecological region with the incidence of land grabs. Available data indicate that Eastern region has the highest size of land grabbed by investors in Ghana, placing the Brong Ahafo region second. Table 1 presents the scope of land grabs in Ghana by region.

2. Literature review

The section provides the literature review on livelihoods, effects of land grabbing on livelihood outcomes and the adaptations to the effects of land grabbing.

2.1 Emergence and drivers of land grabbing

According to Schoenberger, Hall, and Vandergeest (2017), studies on land grabbing emerged out of an acute moment of uncertainty and concern during the 2007/2008 global food, financial and fuel price crises and a rapid rise in biofuels production. The issue of land grabbing was first mentioned in the report of GRAIN, a Non-governmental organisation. The 2008 land grab for food and financial security. GRAIN's formulation specifically included only overseas investments in land for "outsourced food production" by "'food insecure' governments" and "food corporations and private investors", saw the food and financial crises as the key drivers, and provided a precise start date of 2007 (2008, 1–2). The report developed a sense of urgency by making connections not

Figure 1. Map of Ghana showing the ecological region with incidence of land grabs.
Source: FAO 2004 cited in Schoneveld, German, and Nutakor (2011)

just to the food and financial crises but to a changing world order in which emerging powers like China and the Gulf States had increasing influence. Also, GRAIN's global-scale representation of land grabs provided the background for many further studies, including a World Bank report (Cotula et al. 2009; World Bank 2010).

In the literature, land grabbing emerged out of a remarkable series of conferences, workshops, funding calls and special issues, and it reframed the core concerns of the land grab debate in

Table 1. Scope of land grabbing in Ghana by region.

Region	Size of land grabbed (hectares)	Grabbing organisation	Feed stock
Ashanti	96,926	Scanfuel (Now ScanfarmGh Ltd) Norway and Hazel Mercantile Ltd. (India)	Jatropha and Maize
Greater Accra	1750	Bionic Group (U.S.A.)	Jatropha
Brong Ahafo	248,742	Smart Oil Ghana Limited (U.S.A.), Natural African Diesel Ghana Limited, Kirminic Estates Limited (Canada/Ghana), Savannah Black Farming & Farm Mgt Ltd, Jatropha Africa (UK/Ghana) and Agroils (Italy)	Jatropha, sugarcane, maize and soy beans
Central	7000	Symboil AG (Germany) and Buabeng Oil Palm Plantation (local)	Oil palm and jatropha
Eastern	435,640	Viram Plantation Ltd. (India), Anuanom Farms and Gopdc	Oil palm, sugarcane and jatropha
Northern	118,909	Integrated Tamale Fruit Company-(ITFC), Bio Fuel Africa (Norway), and Northern Sugar Resource (BRAZIL)	Jatropha, sugarcane, and mango
Volta	102,300	Biofuel Africa and Galten Agro Ltd	Jatropha

Source: National Agricultural Development Unit Report, 2016.

numerous essential ways. First, academics undertook a critical analysis of the two core objects just described. Early Global Land Grab (TLG) framings were challenged for their overly narrow focus on, especially, the securing of food supplies by food-insecure states (Borras et al. 2012; Zoomers 2010). Academics also wrestled with the outbreak of "land measurement-oriented accounting" around the individual land grab (Borras et al. 2012).

Second, scholars embarked on a positive project of reorienting, broadening, deepening and nuancing the study of land grabbing. The inaugural publication by the Land Deals Politics Initiative (LDPI) underscored the need for "in-depth and systematic enquiry that takes into account the political economy, sociology and ecology of contemporary land deals", and framed that project in terms of core, longstanding concerns of agrarian political economy (Borras et al. 2012). This project was pushed further in a paper on "the new enclosures" (White et al. 2012). Another leading LDPI publication emphasised variation in land deal trajectories in introducing studies that sought to "situate the constitution and contemporary dynamics of new land deals in the political economies and ecologies of particular places" (Wolford et al. 2013). By 2013 it was already time to take stock of this new literature, "to reflect, challenge and reframe, nuancing and sometimes confronting existing narratives" (Kaag and Zoomers 2014; Scoones et al. 2013, 478). More broadly, the wide and welcoming view taken of the scope of land grab studies has facilitated the enrolment of a very diverse body of scholarship. For instance, the call for papers for the 2015 LDPI Chiang Mai conference exemplifies this approach.

Third, many scholars including specialists on Southeast Asian Agrarian and Environment Mental Transformation (AET) worked to define, refine and stabilise a new set of concepts. Perhaps the most noticeable of these was "land grabbing". Borras and Franco (2012) reframed land grabbing as "control grabbing" that did not necessarily involve the direct land acquisition, and insisted that the scale not just of the land but of the capital involved had to be considered. This framing also incorporated a Marxist theoretical perspective by stating that new, post-grab land uses "are largely determined by the accumulation imperatives of capital" (Borras et al. 2012). "Land grabbing" abandoned the effort to set sharp boundaries around "land grabs" as objects. More generally, the scholarly literature has both made and problematised connections between land grabbing and such prominent themes as colonialism, tendencies towards enclosure and consolidation in agrarian capitalism, primitive accumulation, and accumulation by dispossession (Borras and Franco 2012; Hall 2013; Hall, Scoones, and Tsikata 2017; McCarthy, Vel, and Afiff 2012; Peluso and Lund 2011; White et al. 2012; Wolford et al. 2013).

In the same way, many academic analyses preserved the TLG idea that "the recent wave of land grabs" represents "a distinct historical phenomenon" while re-conceptualising it (Margulis, McKeon, and Borras 2013). Precise formulations differed (and the terms used varied), but scholars expanded

the concept by pushing the beginning of the "rush" as far back as the early 2000s, expanding the range of land uses in question to include non-agricultural uses like special economic zones and resource extraction, incorporating domestic investments, and including drivers like conservation imperatives and infrastructural developments.

While these interventions helped to shift the conception of TLG, they preserved the core idea of a distinct, nameable, contemporary land rush as an object of study (Borras et al. 2012; Cotula et al. 2014; White et al. 2012; Zoomers 2010). Some scholarly formulations also deepened the analysis of TLG's connection to contemporary global crises by drawing on neo-Marxist ideas (Hall 2013). McMichael (2012) argued from a food regime perspective for understanding land grabbing "as a reflex of changing conditions of accumulation" and "the recent 'land rush'" as "symptomatic of a crisis of accumulation in the neoliberal globalisation project", while Borras et al. (2012) proposed that "contemporary land grabbing" should be understood "as capital's response to the convergence of food, energy and financial crises, climate change mitigation imperatives, and demands for resources from newer hubs of global capital" (McMichael 2012).

In general, the rush to secure food supply by increasingly food-insecure nations, the surging demand for biofuels and other energy and manufacturing demands, and the sharp rise in investments in both the land and the soft commodities markets are the key factors driving land grabbing (Daniel 2011). While sub-Saharan Africa dominated the early years of the land grab debate, other regions have also received prominent attention, including Latin America (Borras et al. 2012) and the former Soviet Union (Visser and Spoor 2011).

2.2 Effects of land grabbing on livelihood outcomes

There have been scholarly debates on the benefits or otherwise of land grabbing on affected people. For the proponents, numerous positives can be cited stretching from environmental to economic. Yet, enough evidence has equally been gathered on the adversities that land grabbing has had on affected persons, the smallholder farmers are denied their livelihoods in order to fulfil the interests of the rich fuel consumers, exports of goods, and government policies. Numerous studies have revealed that such actions by multinational companies leave affected people who are mostly dependent on the land with little alternatives and thus impoverishes farmers (e.g. Ariza-Montobbio and Lele 2010).

Remarkably, the positivist view of land grabbing has pointed on some occasions to the compensation offered affected (Boamah and Overa 2016; Mahonge 2012) and others proposing appropriate compensation as a mitigating measure (Geuder-Jilg 2014; Hunsberger et al. 2014). On the other hand, claims of non-payment and inadequacy of compensation have dominated the scenes (Cotula et al. 2009; Schoneveld, German, and Nutakor 2011; Hamenoo 2014). It then holds that compensation has not done enough, hence, alternative means are being sought by affected people to cope with the adverse effects of this land dispossession. According to Mujenja & Wonani (2012), the people of Mpongwe District in Zambia after due compensation were not properly paid and some attempts to find alternative livelihoods failed, became squatters on the acquired land resisted the efforts by the company to evacuate them. They again noted that the community's attempt to cope with the situation through this violent means escalated into a conflict against the company (Mpongwe Development Company (MDC) Ltd).

Proponents of land grabbing list a number of opportunities such as the provision of farm and off-farm jobs, and the construction of rural infrastructure including schools and health posts for the rural dwellers. Other potential benefits arising from land acquisition also include resources for new agricultural technologies and practices as well as future global price stability and increased production of food crops that could supply local and national consumers in addition to foreign consumers (Braun and Ruth 2009). Since land grabbing leads to increased investments in food and biofuel production flowing to rural areas of developing countries, it could present essential benefits and opportunities for promoting the livelihoods of rural communities. Such investments have the potential to

boost the agricultural sector, promote its modernisation and stimulate rural economies by the development of processing industries, livelihood diversification and employment generation; increased agricultural productivity through the provision of improved seed varieties, know-how and new technologies; low cost of production, higher returns for the farmers, and provision of facilities such as roads, ports, schools, health centres and water services (Haralambous, Liversage, and Romano 2009).

Land grabbing can be a "win-win" deal. Investing in large-scale agriculture can be an opportunity for growth. This is because increasing the size of land under agricultural production and improving productivity through the application of modern farm techniques and economies of scale will benefit the country of the investors as well as the host country financially (Shepard and Mittal 2009).

In as much as the views expressed by the proponents cannot be completely disputed, it is also crucial to add that, because most of such investments are often carried by the private sector, their profit-seeking motives usually could override their commitment to really ensure the provision of these opportunities for the local people. Even where these opportunities are created, they may not often be sustainable and local elites also usually tend to take advantage of them to cheat their own people. In terms of the promises often made by investors such as the provision of social amenities and economic infrastructure, it has been reported, notably by the World Bank, a proponent of land grabbing that, these benefits usually do not materialise in several instances or at least are very slow to come (Morges 2010). It is also worthwhile to mention that in most cases even when the investors promise to offer employment to the local people whose lands have been grabbed; it is usually seasonal in nature, lowly paid and offer poor working conditions as the case of plantation workers in Mali (Oviedo 2011).

Often, host governments do not have the prerogative to compel foreign investors to adhere to their promises (Morges 2010). In addition, for some local people, it would be very difficult for them to easily adapt new strategies in order to take advantage of the opportunities provided by investment in the acquired lands. This could mean that the livelihoods of such people will become very precarious. Arguing from the literature, it is therefore not feasible that all affected people will indeed access these benefits as prescribed. All the same, it does not necessarily imply that investing in acquired lands does not have any positive effect on the livelihoods of the members of the host communities. If the investments are responsibly and effectively carried out, their benefits on the local people's livelihoods and host country's development cannot be underestimated.

Makutsa (2010) in addressing the effects of land grabbing on livelihoods indicates that there will be severe food deficit in the Tana Delta in Kenya, a home to many land deals, if all the proposed agricultural investments on all acquired lands take off in the region. Similarly, using a case study involving Uganda for example, the National Association of Professional Environmentalist (NAPE 2012) reiterates that, the use of grabbed lands for oil palm plantation in Uganda has affected the local economy, which previously had fishing, timber harvesting and food crop farming as the major economic activities. Local food production is threatened since vast lands desirable for growing food crops are diverted mainly to grow oil palm. Due to the huge capital investment in grabbed lands, local subsistence farmers and pastoralists are now taking interest in casual paid jobs which are not well paid. Evidence from plantation workers on grabbed lands in Mali and Sierra Leone shows that seasonal workers in Sierra Leone, for example, are paid approximately USD 2.25 a day, while workers in Mali receive even lower wages of USD 0.60 to USD 1.20 a day (Oviedo 2011). Against this backdrop, it could be argued from the literature that, food production in developing economies will reduce since many subsistence farmers are converting into casual paid workers on foreign-invested lands. So then, without appropriate policy framework to manage and regulate the activities of land grabbing and its subsequent eviction of local farmers, it would not be surprising to see severe forms of hunger and poverty in many developing nations, especially in sub-Saharan Africa where worse forms of land grabbing activities occur. Many development oriented organisations for example have criticised the issue of land deals by the government and private individuals with the aim to invest money to enhance local food production and to stabilise local and regional markets. Instead, land grabbing increases competition for land which leads to higher land prices, and in turn, the price of food

might also increase. Hence, local communities in developing nations will become less able to afford that food, even though it is grown in their own countries (Christiane et al. 2011).

The polarisation in the debate reflects radically different views of the best options for developing countries in terms of their agricultural development and policy priorities. While some emphasised the positive role that large-scale investors can play in agrarian transformations and a transition towards a more developed agriculture capable of feeding a growing population with higher productivity and superior technology, others oppose large-scale land deals that are seen to threaten local livelihoods, to accelerate the demise of peasantries and to contribute little to the development of recipient countries (Cotula et al. 2014).

2.3 Coping and adaptation strategies to the effects of land grabbing

The literature on the coping and adaptation strategies of smallholders to the growing phenomenon of land grabbing in development is scanty. Attempts have been made by very few authors to report on smallholder' coping strategies to land grabbing, but these have been less robust. Rural communities across the developing world use various coping strategies in response to poverty, food insecurity, conflict as well as environmental stresses; all challenges which are compounded by climate change and variability (Berman, Quinn, and Paavola 2013; Bryceson 2002).

When farmers experience food shortages, they respond by eating smaller meals, eating fewer times a day, changing their diet or supplementing their food supplies by harvesting wild yams (Demi and Kuwornu 2013; Harvey et al. 2014; Kuwornu, Demi, and Amegashie 2013, 2014) whilst some supplement their food supplies by purchasing rice from market and routinely selling household assets, and encouraging household members to get outside employment (as an agricultural labourer on another farm) to obtain income to buy food (Okonya, Syndikus, and Kroschel 2013). Some farmers also rely heavily on wild foods from communal forests to supplement their diets (Morton 2007).

Relocation of affected households to areas where there is available land for farming either by company arrangement or individual choices is common among plantations across the globe. Danso (2015), indicated in a study on the impact of households' loss of land to Jatropha plantations in Northern Ghana that land accessibility was not the issue with farmers but rather accessing land that is close to their homes.

Some affected farmers migrate to urban areas in search for better and alternative livelihoods (Kalebi 2010). Mahonge 2012 revealed that traditional land governance systems and actors including farmers are affected by land grab deals for Jatropha plantations, and that the affected farmers in Kisarawe district in Tanzania resorted to charcoal burning as their source of livelihoods. Similarly, a study by Schoneveld, German, and Nutakor (2011) in the Brong-Ahafo region of Ghana reported that affected people diversified their livelihood sources by relying on products such as beans from the locust bean tree (fermented into "dawa dawa"), nuts from the shea tree, charcoal production, medicinal plants, mushrooms, and small game for incomes and a livelihood. Also, changes in farming systems, reduction in farm sizes and changes in crop diversity have been adopted by households to cope with the loss of farmlands arising from land grabbing.

2.4 Conceptual framework

The conceptual framework guiding this study aims at establishing a linkage between the vulnerability of smallholder farming households to land grabs and capability, through the livelihood strategies to livelihood outcomes of smallholder farming households as well as their strategies for adapting to the effects of land grabbing. Thus, the conceptual framework guiding this study is somewhat rooted in the Sustainable Livelihood Framework (Department for International Development (DFID) 2000), (Figure 2).

The increasing demand for biofuel products across the globe in recent times calls for increased production of these products to satisfy the high demand by the multi-national industries. The

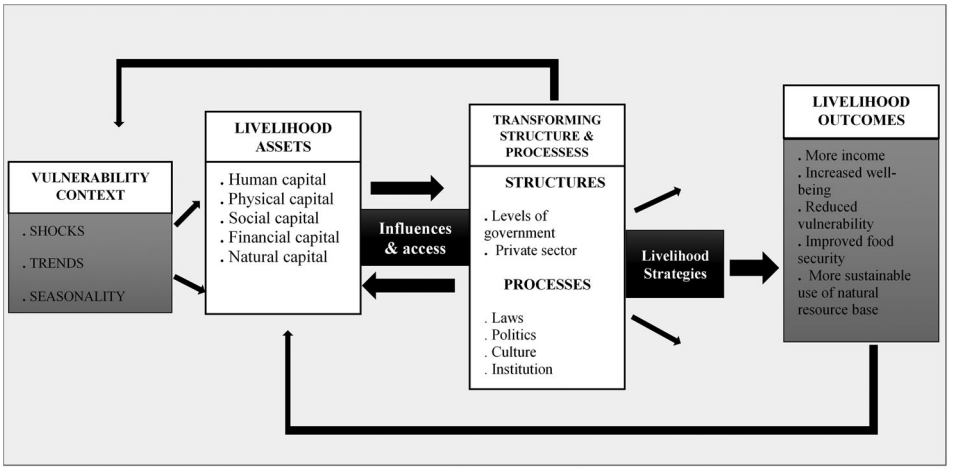

Figure 2. Sustainable Livelihoods Framework (SLF).
Source: DFID (2000), Sustainable Livelihoods Guidance Sheets http://www.nssd.net/pdf/sectiont.pdf

quest for greater developments and better livelihoods for its citizenry, governments of developing nations including Ghana formulate policies aimed at attracting Foreign Direct Investment (FDI) especially in the agricultural sector where there is vast idle fertile lands with low technological levels of farming enterprises which account for the low productivity in the sector and the high poverty levels of people engaged in the sector. The government, therefore, gives community lands to large-scale land investors with the aim of generating employment and development to these communities. This renders farming households vulnerable to land grabs by relinquishing their farmland to large-scale land investors. Thus, the influx of land grabbers' activities exerts either a positive or negative effect on the resources of farming households such as physical, financial, human, natural and social resources endowments. For instance, given that the main source of livelihood in rural Ghana is farming with fertile land as the main capital asset, losing such precious resource (land) through land deals will no doubt affect farming households' livelihood outcome (employment, income, food production, health and nutrition, education and social cohesion) negatively or positively. In the interim, farming household adopt coping strategies to withstand the effects of land deals. In the long-run, however, permanent measures are required by farming households to fully adapt to the impact of land deals. This study investigated the effects of land grabs on farming households' livelihood outcomes and how they cope with or adapt to these effects.

3. Methodology

3.1 Study area

The study was conducted in sixteen communities selected from seven regions of Ghana. The regions included Northern (Kpachaa, mankango and Gushei), Volta (Lolito and Adidome), Eastern (Afram Plains and Kwae), central (Dunkwa and Winneba), Brong Ahafo (Atebubu, Domeabra, Prang and Yeji), Greater Accra (Sege) and Ashanti (Agogo and Nsuta). According to the Ghana Statistical Service, GSS (2012), the population of the region were as follows: Ashanti region (4,780,380), Greater Accra (4,010,054), Eastern region (2,633,154), Northern (2,479,461), Brong Ahafo region (2,310,983), Volta region (2,118,252) and Central region (2,201,863). About 39.1 percent of Ghana's population resides in the rural areas and 65.3 percent of households in Ghana are headed by males. The employment-to-population ratio for urban and rural Ghana were 69.9 percent and 81.6 percent respectively with the agricultural, forestry and the fishing sector employing about 44.7 percent of Ghana's active labour force (GSS 2014).

3.2 Sources of data and sampling procedure

This study was a survey research and required primary data which was collected from farming households, district assemblies, community leaders, and agricultural extension officers in 2016 and 2017. A multi-stage sampling technique was used in selecting the sample units for the study. The seven regions of Ghana were purposively selected because they had more land deals activities. Within each region, only communities with land grabs were considered for selection. The number of communities selected in each region depended on the number of communities with land deals in each region. In all, sixteen communities were sampled for the study (Northern region – 3, Volta region – 2, Greater Accra – 1, Eastern region – 2, Central region – 2, Asante region – 2 and Brong Ahafo region – 4). Based on the population, proportionate simple random sampling was used to select the required households in each community. In all, 560 farming households were selected and questionnaires were administered to them. Within each community visited, a focused group discussion was held to establish the community viewpoints on certain communal issues. Each focused group constituted between ten to twelve members, with the community development chairperson, assembly person (i.e. the community's representative of the district assembly) and women' organiser as members. A checklist of questions was used for the focused group discussions. Key informant interviews were also held with community elders using structured interview guide. This was to ascertain some vital facts on the existence and operations of land grabbing companies.

3.3 Methods of data analysis

The study has been designed as a cross-sectional survey which involves observation of all of a population, or a representative subset at one specific point in time. It mostly aimed at describing the pattern of relations before any attempt at casual inference is made. In this design, we examined the association between the effects of land grabbing and the livelihood of farming households in the study area. Malhotra, Lee, and Khurana (2007) argued that analytical cross-sectional surveys are easy and faster to undertake, a better approach for descriptive analyses and formulating hypotheses, a suitable approach to measure the prevalence of all factors under study and also a suitable design to study multiple outcomes and exposures. According to Mann (2010), studies designed as a cross-sectional survey can be helpful in determining how many people are affected by a condition and whether the frequency of the occurrence varies across groups or population characteristics. In this study, both farming households who have been affected and not affected by land grabs were sampled to assess the effects of land grabbing on their livelihood outcomes. The study determined land grabbing effects on the livelihood outcomes of affected communities' outcomes and as well as the strategies that have been put in place to cope with and adapt to the situation. The generalisability of such studies is good, because they are representative of given populations (e.g. when data has been collected systematically, and some probability sampling technique has been employed.

In determining the relationship between land grabbing and the livelihoods of smallholder farming households, the Chi-Square statistic, the Product Moment Correlation Coefficient (Karl Pearson's Coefficient) and the Spearman's rank Correlation Coefficient are the parametric techniques that can be used. The Pearson's Correlation Coefficient best suits a data set of two variables measured quantitatively. On the other hand, the Spearman's Rank Correlation Coefficient is applied on a bivariate data with both variables being measured quantitatively and appears non-linear; both variables are qualitative in nature; or one variable is measured quantitative and the other is qualitative.

Given that farming households' responses on land grabbing was categorical (lost land or not) and the livelihood outcomes are either categorical or ordinal, the study employed the Spearman's Rank Correlation Coefficient (one-tail test) to determine the effects of land grabbing on the livelihood outcomes of farming households. The Spearman's Rank Correlation Coefficient is specified as:

$$r_{xy} = 1 - \left\{ \frac{6\left(\sum d_i\right)^2}{n(n^2 - 1)} \right\} \tag{1}$$

where r_{xy} is the correlation coefficient for land grabbing and a livelihood outcome (employment, food production, income, healthcare and nutrition, education and social cohesion), n is the number of paired observations and d is the difference in each paired ranks.

To test for the statistical significance of the Spearman's Rank Correlation Coefficient, the t-statistic was employed to validate the hypotheses. The t-statistic is specified as follows:

$$t = \frac{r_{xy}\sqrt{n-2}}{\sqrt{1-r_{xy}^2}} \tag{2}$$

where t is the t-calculated, which can be positive (positive correlation) or negative (negative correlation), r_{xy} is the computed correlation coefficient for land grabbing and a livelihood outcome (employment, food production, income, healthcare and nutrition, education and social cohesion) and n is the number of observations ($n = 560$).

The decision rule is to reject the null hypothesis (H_0) if $t_{calculated} > t_{critical(one\ tail)}$; otherwise, do not reject the H_0. Table 2 presents the descriptions, measurements and a priori expectations of the variables considered for the study.

The coping and adaptation strategies used by farming households were identified and analysed using descriptive statistics such as percentage presented in the tabular forms.

4. Results and discussions

Results of data analysis are presented and discussed as follows.

4.1 Socio-demographic characteristics of respondents

The socio-demographic characteristics of farming households determine the magnitude of the effect of land grabbing on its' livelihood outcomes. About 63 percent of sampled households were headed by males. A gender perspective is critical to truly understand the impact of land grabs, because women and men have different social roles, rights, and opportunities and will be differently affected by any major change in tenure regimes, especially land transfers to investors (Behrman, Meinzen-Dick, and Quisumbing 2012). Also, the coping and adaptation strategies adopted by a household depend on the sex of the household head. The main occupation of a household also

Table 2. Description, measurement and a priori expectation of the variables.

Variable	Explanation	Measurement	A priori expectation
Land grabbing	Has the household lost any farm land to land grabbers?	Dummy: 1 = yes, 0 = Otherwise	+/−
Employment	Number of household members employed as a result of land grabbing	Number of persons	+/−
Food production	Difference in quantity of food crops produced by households before and after land grabbing	Kg	+/−
Income	Has there being any change in the income level of the household due to land grabbing?	Dummy: 1 = increase, 0 = Otherwise	+/−
Healthcare and nutrition	Households' perceived improvement in their healthcare and nutritional levels as a result of land grabbing	Dummy: 1 = improved, 0 = Otherwise	+/−
Education	Households' perceived effect of land grabbing on education of household members	Dummy: 1 = improve, 0 = Otherwise	+/−
Social cohesion	Households perceive effect of land grabbing in ensuring social bonding, cohesion and togetherness of community members	Dummy: 1 = yes, 0 = Otherwise	+/−

determines the intensity of the effect of land grabbing on a household's livelihood outcomes and how it adjusts to this effects. About 73 percent of households had farming as its' primary occupation with an additional 27 percent reporting farming as its' secondary occupation. About 7 percent of households had hunting, fishing and gathering from the wild as its' primary occupation. All these households depend on the land for their livelihoods which they stand to lose with the advent of land deals. In terms of education, about 53 percent of sampled households were headed by people with no formal education while 27 percent of household heads had primary education. Descriptive statistics of other socio-demographic background of respondents are presented in Table 3.

The average age of household heads in the study was 41.52 years with an average household size of 6.13 persons. About 27.1 percent of sampled households reported to have lost land to land grabbers in recent times. The average acres of land lost to land grabbers by households at the time of the study was 2.13 acres. Given that the average household land lost through land deals is 8.87 acres, it implies the land lost by households through land deals can immensely affect a household.

4.2 Relationship between land grabbing and farming households' livelihoods

The livelihood outcomes of farming households are the indicators which directly reflect or determine the livelihood status of farming households. The livelihood outcomes considered in this study were employment, food production, nutritional and healthcare level, income levels, education and social cohesion of farming households. To determine the effect of land grabbing on the livelihood outcomes of farming households, the yes/no response of households to the question "did you lose any land to large-scale land investors" was correlated with the livelihood outcomes of households. The Spearman's Rank Correlations (one-tailed test) of the effects of large-scale large land acquisition on livelihood outcomes are presented in Table 4.

The empirical results showed that land grabbing has a significant positive effect on the employment of farming households in Ghana. The Spearman's correlation coefficient of 0.75 implies that employment of farming households in Ghana is strongly affected positively by land grabbing. The null hypothesis which states "land grabbing has no significant effect on the employment levels of smallholder farming households" is therefore rejected. In the community focus group discussions, it was revealed that though companies into large-scale land activities promised to recruit more of its' workers from the operating communities, it turned out to be the reverse as very few people

Table 3. Descriptive statistics of sampled smallholder farmers.

Variable	Mean	Standard deviation	Minimum	Maximum
Age of household heads	41.52	6.54	26	67
Household size	6.13	4.12	1	19
Household land size (acres)	8.87	3.92	3	45
Land lost by household (acres)	2.13	4.12	0	18

Source: Field Survey, 2016.

Table 4. Results of the Spearman rank correlation of land grabbing and livelihood outcomes of the farming households.

Livelihood outcome	Number of respondents	Spearman's correlation coefficient	Significance (one-tailed)	Decision
Employment	560	0.750***	0.000	Reject H_0
Food production	560	−0.119*	0.064	Reject H_0
Nutrition and health-care	560	−0.014	0.404	Do not reject H_0
Education	560	0.128**	0.014	Reject H_0
Income	560	−0.049	0.245	Do not reject H_0
Social cohesion	560	−0.229**	0.013	Reject H_0

Source: Field Survey, 2016.

from the communities were employed as labourers in the companies. In most cases, community members were only employed as casual workers especially on plantation farms and are paid on "by-day" conditions. Thus, the jobs created for people of communities are more of informal than formal and are lowly paid. However, even-though more local people are engaged by land grabbing companies, they are only employed as casual workers to serve as labourers in the plantation fields with very low wages and would have been better off engaging in their farming activities which they have lost to land grabbers. One of the community chiefs had this to say in our interview with him:

> When the people came with the assembly officers in search for land, they promised to employ our community's youth and that they will partner with us to operate the plantation. … . But, when the project was fully operational, it was the reverse. They owned and controlled everything in the plantation. They brought their own nationals to occupy supervisory and managerial positions while the few people from this community employed by the company were just common laborers who worked on by-day conditions which was usually seasonally.

This study showed that most Ghanaians were employed as part-time workers and were poorly remunerated. This finding confirms Acheampong and Campion (2014) findings that a Jatropha plantation of a Biofuel company engaged 42 percent of people in affected communities in Ghana, though mostly on part-time conditions. The findings of this study are also consistent with Baumgnertner et al. (2015) who reported that workers of Saudi Star in Ethiopia spent a portion of their income on locally produced goods and services such as local beer which had a positive effect on self-employment. Similarly, the significant effect of land grabbing on employment may be explained by the fact that though the companies are not able to directly employ many people from within the local communities; their presence in these communities have created market for the local products of community members such as sales of food, foodstuffs, and call cards to workers of the companies. The study revealed that about 37 percent of sampled households indicated that a household member has gained employment (direct and/or indirect) as a result of the activities of land grabbers. This is not different from the findings of Baumgnertner et al. (2015) who revealed that the workforce of Saudi Star in Ethiopia composed of 20 percent local members employed as field workers, tractor drivers and other casual jobs which were lowly paid.

The results also showed that land grabbing has a significant negative relationship with food production of farming households in Ghana. The Spearman's correlation coefficient of –0.19 suggests that land grabbing has a negative relationship with food production of farming households in Ghana. Hence, the null hypothesis is rejected. Community members during the various focused group discussions indicated that due to the loss of their fertile lands to land grabbers, households have no option but to return to previous lands which were left to follow. Given that farming households are not in good financial standing to purchase fertiliser and hybrid seeds to increase yield, they only rely on the cultural practices for the cultivation of staple crops such as yam, maize, cassava and rice, which often yield low outputs insufficient to feed their households. The household survey revealed that about 64 percent of sampled households reported a reduction in crop output due to land grabbing, which has rendered them more food insecure. Interviews with land grabbing companies' officials showed that their produce target the export market rather than for domestic consumption. Thus, outputs of land grabbing companies do not contribute to reducing the food deficit of the host communities. In a focus group discussion, one participant had this to say:

> We use to harvest between fifteen to tween-five bags of maize per farming season which was enough for our household food consumption for the year. But, now that we have lost our most fertile farmlands to the company, our highest maize output since the takeover has been nine bags of maize which is able to meet our food need for only five months. We always have to struggle for food for the rest of the year.

In a similar study on the impact of Jatropha plantation on the food needs of households in host communities in Ghana, Acheampong and Campion (2014) found that most farming household reported a reduction in their food production and food surplus after losing their farmlands to the plantation company. Also, Doso Jnr et al. (2015) found decreased food crop production in the Tarkwa

Nsuaem Municipality of the Western region of Ghana due to increased takeovers of agricultural land for cash crop cultivation and mining companies' concessions to the neglect of traditional food crops. The results also confirms the findings of Dheressa (2013) who reported that agricultural projects have a negative effect on the food security of host communities in Bako Tibe Woreda of the Oromia region in Ethiopia because the projects did not increase food supply in the district but, exported its outputs to foreign markets like Sudan, Kenya and the Asian market.

Land grabbing is negatively related to the health-care and nutritional level of farming households in Ghana, although the correlation results failed to reject the hypothesis because the influence is not statistically significant. All sampled households reported a negative effect of land grabbing on the nutritional status of households. Households reported a decline in crabs and mushrooms quality and quantity which were nutritional foods to farming households. On health-care, about 82 percent of sampled households indicated that they have not noticed any improvement in their health-care systems attributable to land grabbers. Most land grabbers promised to build health facilities for their host communities as part of their corporate social responsibility. However, this never materialised. Only two of the sixteen communities visited reported to have ever received donation of assorted items from land grabbers to support health-care delivery in their communities. In one of the community focused group discussions, one member said:

> The first day they came, their boss mentioned to us that they will build a new clinic in the community to provide quality health-care to their workers and the community members. They are yet to fulfill this promise. Even the compound of our Community Health Post has not being renovated.

The empirical results indicate that land grabbing has a significant positive relationship with the education of farming households in the study communities. Therefore, the null hypothesis is rejected. When households were asked whether land grabbing activities have any effect on the education of their household members, about 51.2 percent of households indicated that students in their households take up part-time jobs with the companies to earn some income in meeting their school needs such as buying text book, school bags, uniforms, foot wares, "chop monies" and sometime payment of school fees. This has prevented students from dropping out of school to seek for livelihoods in the cities. On the contrary, participants in the focused group discussions opined that in most cases, students who engage in part-time works with these companies eventually drop out of school for the little income they earn from their engagement with land grabbing companies. Also, no community reported an improvement on their educational infrastructure by land grabbers. The correlation coefficient of 0.128 suggests a low positive effect of land grabbing on households' education.

The correlation results showed that land grabbing has a negative relationship with the income levels of farming households in the study communities, although it is not statistically significant. Majority of households (79%) reported a reduction in their household income due to loss of farmland to land grabbers. The Key informant interviews in the communities revealed that most households with high-income levels have large fertile lands which give them good crop yield to sale. Losing such fertile land leads to the loss of income. The alternative source of income would have been employment with the companies of land grabbers. Unfortunately, the only few community members employed with the companies are casual workers which attract less remunerations. In a focused group discussion in one of the communities, a participant stated that:

> The highly paid workers are the managers and the supervisors, who are foreigners. For us, our only job in the plantation field is to weed and water the plants which are temporal jobs and less rewarding.

It was revealed in focus group discussions that land grabbing has exacerbated households low incomes and community members who were employed by land grabbing companies receives vary meagre remuneration of between GHS 100.00 to GHS 150.00.[1] This gives a daily wage of between GHS 3.33 to GHS 5.00, which is below Ghana's minimum daily wage of GHS 9.68. This finding corroborates with Acheampong and Campion (2014) who revealed that almost 75 percent

of local employees of the Jatropha plantations in Ghana earned less than GHS100.00 per month. Most participants stated that depending on the discretion of land grabbers, households were compensated between GHS 70.00 to GHS 120.00 per acre for losing farmlands and were given between six to twelve months to relocate to different farms lands. In an interview with an elder in one of the communities, he said;

> Initially, the compensation packages and its payment resulted in disagreements between the occupants of the farmlands and Bio Fuel Africa. But later, we had no option but to accept it.

The Spearman's correlation coefficient of 0.049 implies a very low relationship of land grabbing on the income levels of farming households. This finding contradicts the earlier findings of Baumgnertner et al. (2015) who attributed the almost 50 percent increased the per-capita income of settler and native citizens of Ethiopia to the operations of Saudi Star project. However, the finding agrees with Oviedo (2011) who reported lower earnings of plantation workers on grabbed lands in Mali and Sierra Leone. Our findings also somewhat confirm Atindana et al. (2015) who reported that the construction of the Bui dam had no significant effect on the income levels of resettled affected households in Lucene and Agbegikuro communities in the Northern region of Ghana.

In rural Ghana where agriculture is the mainstay for the majority of the people, any attempt by governments, organisations and individuals to take control of large portions of farmland has often been resisted vehemently by the affected communities for fear of losing their livelihoods. This is because, for the rural dwellers, an attempt to deny them of their land is considered as a deprivation of well-being. Acheampong and Campion (2014) revealed that farming households in Northern Ghana resisted the taking over of their farm lands by the Biofuel Company Ltd for jatropa plantation without consultation with affected households for compensation. Social cohesion of farming households is significantly and negatively influenced by land grabbing activities. In most communities, lands reserved as shrines for performing certain traditional practices are confiscated by land investors and host communities are denied access to such lands. This has often resulted in conflict and other tensions between communities and land investors especially where the occupant of leased land (usufructs or those who have usufruct right to lands) were not consulted regarding the land deal process and also have no land title documents to prove their ownership of the land. About 28.4 percent of households are reported to have engaged in a dispute with other households over land. Conflict is a social disintegration. This finding is consistent with an assertion made by Chizoba et al. (2012) that, the changing dynamics of land use and rights have implications for property relations and is a treat to social cohesion due to violence and conflict in people's struggles for control over land resources. Also, the outcome of this study substantiates the views of De Schutter (2010) that land has great economic and emotional significance and, hence it is a potential source of conflict that can span generations.

4.3 Farmers' strategies of coping with and adapting to the effects of land acquisition

Given that land grabbing adversely effects the livelihood outcomes of farming households, some contingent measures have been taken to mitigate the level of effects. The measures embarked upon by households to survive the effects of activities of large-scale land acquisition in the short-term are known as coping strategies while those measures adopted by the households so as to adjust to the effects of large-scale land acquisition in the long-term are called adaptation strategies. The coping and adaptation strategies identified to have been adopted by farming households in communities are presented in Tables 5 and 6.

One of the serious effects of land grabbing is the tendency of smallholder farmers having to relocate their farmers to far sites. To immediately surmount the effect, majority of smallholder farmers (71%) go to their farms very early than they used to while about 27 percent of farming households reduce the number of days they visit the farm. However, as a long-term measure, most smallholder farmers (91%) reported establishing backyard farms rather than travelling to distant places to

Table 5. Farming households' coping strategies to the effects of land grabbing.

Coping strategy	Number of households using strategy	Percentage (%)
Reduce number of days of visit to farm	151	27.0
Leaving to farm very early	398	71.0
Get medicinal plants from family and friends	235	42.0
Casual work (by-day)	266	47.5

Source: Field Survey, 2017.

Table 6. Adaptation strategies of farming households to land grabbing.

Adaptation strategy	Number of households using strategy	Percentage (%)
Keep backyard garden	510	91.0
Bought motor bike	252	45.0
Grow medicinal plants	78	14.0
Fish farming	235	43.0
Petty trading	235	42.0
Gathering from the wild	90	16.0
Brewing and shea processing	50	9.0

Source: Field Survey, 2017.

cultivate their produce. About 45 percent of households also reported to have adapted by acquiring motor bikes to aid their transport to their new farmlands which are relatively far away from their homes than their old farm sites. The adaptation strategies farmers perceive as appropriate include crop diversification; using different crop varieties; varying the planting and harvesting dates; increasing the use of irrigation; increasing the use of water and soil conservation techniques, shading and shelter; shortening the length of the growing season; and diversifying from farming to non–farming activities (Hassan and Nhemachena 2008). This was apparent in a narrative given by a farmer:

> The issue of land grabbing has resulted in the extensive migration of the youth to Yeji, Makango and other communities who are forced to be fishermen and hence the current accident on the Yeji river, all these has happened due to investors.

Another effect of land grabbing on smallholder farmers is the extinction of medicinal plants which has been the main source of healing to ailment among the farmers in the study communities. About 42 percent of farmers reported that they get depleted medicinal plants from friends and relatives in other communities in the short run, but, adapt to the situation in the long run by replanting such medicinal plants in their communities as reported by about 14 percent of households.

The coping and adaptation strategies adopted by farming households in this study are not much different from those adopted by farmers (resettlement of farmlands, off-farm activities such as fishing, firewood, charcoal burning and shea nut picking) in the Talensi/Nabdam district in Northern Ghana as effective coping and adaptation strategies to the effects of small-scale mining activities in the region (Ontoyin and Agyemang 2014). Also, according to Dheressa (2013), the majority of smallholder farmers in the Woreda District of Oromia region adopted such strategies as changing land use, share cropping, tenant farming, changing to off-farm occupation and seeking employments with foreign companies to cope with the adverse effects of large-scale agricultural projects in Ethiopia. Fish farming, brewing and shea processing, and petty trading) were other strategies employed by households in adapting to the effects of land grabbing. Whereas brewing, shea processing and petty trading were found to be dominated by women, casual works was mostly an effective adaptation strategy employed by male-headed households.

About 47.5 percent of respondents reported coping with the effect of land grabbing by engaging in casual works. Farmers who lost their farmland to land grabbers and could not travel far to acquire new farmland to continue farming had to be content with the little wage paid them by land grabbing companies. In the opinion of some farmers, most farmers are engaged in weeding plantation farms for immediate income that can help them buy their farm inputs and also meet the school needs of

their children in school. However, it was observed that some farmers completely abandoned their farms to work for land grabbing companies mostly as labourers. This finding agrees with Dheressa (2013) who found that most smallholder farmers in the Woreda District of Oromia region in Ethiopia resorted to casual labour (by-day) as a strategy of coping with the effects of land grabs.

5. Conclusions and recommendations

The empirical findings revealed that land grabbing in Ghana has a significant negative effect on food production, nutrition and health-care and social cohesion of farming households but, is positively related to employment and education. Farming households leave to farm very early as a coping strategy in the short run, but adapt to the effect of land grabbing by keeping backyard gardens and working for the companies involved in land grabbing, on part-time by-day conditions for low remuneration. Based on the empirical findings, this study concludes that land grabbing in Ghana is to some extent a threat to development, as the disadvantages outweigh the advantages of the livelihood outcomes of the households that have been affected by these land deals, although it may yield some development opportunities would yield benefits to the households in the long term. Therefore, developing countries pursuing policies that would create the business environment for land grabbing are only developing their own underdevelopment and trading against the well-being of its people. Based on the experience of Ghana, it is recommended that developing countries should formulate policies that would either minimise or end foreign land grabbing, or strengthen its institutions to enforce stringent by-laws on land grabbing that would benefit its citizenry.

The contribution of this study is provided as follows. Schoneveld, German, and Nutakor (2011) examined the impacts of land grabbing on a broad section of society (i.e. women, migrants, and farming households) in the Pru district in the Brong Ahafo region of Ghana. Mahonge 2012 revealed that traditional land governance systems and actors including farmers are affected by land grabbing deals in the Kisarawe and Same districts in Tanzania. Kalebi (2010) assessed the impact of jatropha farming on food security of small-scale farmers in Rukwa and Arusha regions in Tanzania. Danso (2015) examined the impact of land grabbing for Jatropha plantations on the livelihoods of farmers in the Yendi district in Northern Region of Ghana. Similarly, our study examined the effect of land grabbing on farming households in seven regions of Ghana (i.e. Northern, Volta, Eastern, Brong Ahafo, Greater Accra, and Ashanti), thereby providing an empirical contribution to the existing literature on the effects of land grabbing on the livelihoods of farming households in developing and emerging economies.

Note

1. 1 USD = GHS 4.3 on average at the time of data collection in 2016 and 2017.

Disclosure statement

No potential conflict of interest was reported by the authors.

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