Scientific Research Publishing

Open Journal of Social Sciences, 2023, 11, 129-144
https://www.scirp.org/journal/jss
ISSN Online: 2327-5960
ISSN Print: 2327-5952

Influence of Livelihood Assets on the Livelihood Outcomes of Smallholder Farmers in the Bawku East District of Northern Ghana

Osmanu Karimu Azumah, Solomon Asiimwe Muchwa, Edaku Charles

Nkumba University, Entebbe, Uganda
Email: azumaha@yahoo.co.uk, asiimwesm37@gmail.com, charlsedaku@gmail.com

How to cite this paper: Azumah, O. K., Muchwa, S. A., & Charles, E. (2023). Influence of Livelihood Assets on the Livelihood Outcomes of Smallholder Farmers in the Bawku East District of Northern Ghana. *Open Journal of Social Sciences, 11,* 129-144.
https://doi.org/10.4236/jss.2023.115011

Received: March 4, 2023
Accepted: May 20, 2023
Published: May 23, 2023

Abstract

This research paper is a result of a study that assessed the influence of livelihood assets (the human, natural, physical, social, financial, assets) on the outcomes of smallholder farmers in Bawku East District in Northern Ghana. The study adopted a descriptive and correlational study design and employed mixed methods approach. It surveyed and interviewed 400 respondents and study participants in four villages in the Bawku East District that were affected by large scale land acquisitions for community development projects and by individuals for residential purposes. It was found out that, in terms of the importance of livelihood assets in the Bawku East District; Financial Capital is of most importance to the participants (Cum. mean 4.5275), followed by Physical capital (Cum. mean 4.3175) and social capital (Cum. mean 4.3175), Natural Capital (Cum. mean 4.31), and the least is Human Capital Assets (Cum. mean 3.395). This also means that the farmers in the Bawku East District do not have a strong human capital as compared to the others. But then, need more financial capital to be productive and survive due to the high rate of land acquisition. The results show that there is high level of experience in crop farming among farmers in Bawku East District ($M = 4.04$), and this experience is an important human capital asset that need to be relied on among farmers for better livelihoods.

Keywords

Livelihood Assets, Livelihood Outcomes, Smallholder Farmers, Bawku East District, Ghana

1. Introduction

Livelihood assets (human, natural, physical, social, and financial) and their con-

nection with or influence on smallholder farmers' outcomes have been studied variously in different parts of Africa. Udoh, Akpan, & Uko (2017) study assessed the livelihood assets that sustain rural farm households in Abak Local Government Area of Akwa Ibom State in the Southern region of Nigeria. In selecting 110 farming household heads in the study area, a multi-stage sampling technique was employed; with structured questionnaires used to collect cross-sectional data from the respondents. Descriptive tools used to analyze the data collected revealed that, the demographic features of respondents of the sampled population were fast ageing, dominated by married males who were moderately educated. Significantly, the results showed that, respondents had considerable stocks of physical, social, and natural assets which influenced their livelihood outcomes. However, there existed a deficiency of financial and human assets among farming households in the region; and hence recommended that, farming households should increase their human assets by encouraging the education of the younger household members. Additionally, efforts should be made to improve the social capital formation among farming households and villages in the study area.

Mumuni & Oladele (2016) examined the relationship between rice farmers' access to livelihood capitals (natural, financial, physical, social, and human) and their entrepreneurship capacities in the northern and Ashanti regions of Ghana. In selecting the sample size of 301 rice farmers in the two regions, simple random and purposive sampling methods were used: with a structured questionnaire in conducting the study. It was revealed that, farmers' access to livelihood capitals improved their internal locus of control, farming management abilities and ultimately boosted their agricultural entrepreneurial capabilities. The study recommended that farmers should use their human capital (farming skills/knowledge) to improve on their other livelihood capitals to enhance their entrepreneurial skills.

2. Literature Review

2.1. Human Capital

Human capital is an intangible asset or quality not listed on a company's balance sheet; that can be classified as the economic value of a worker's experience and skills. This includes assets or competencies such as education, training, intelligence, skills, health, and other skills, employers' value such as loyalty, commitment and punctuality. The concept of human capital recognizes that not all labor is equal; but employers can improve the quality of their human capital by investing in employees. The education, experience, and abilities of employees all have economic value for employers and the economy. The quantity of workers is normally measured in the form of total workers available to the household while quality is measured by the level of education, skill attained, and good health of household members (Xu et al., 2015). Households with better quality of human capital can benefit from high-paying livelihood strategies. Abbassi et al. (2019) further posited that, Human assets symbolizes a collection of capabilities such as

skills and aptitude, knowledge, a physical and mental ability that enable households and individuals to conquer the ecosystem and meet livelihoods need (Butt et al., 2015). Kamaruddin and Samsudin (2014) state that: "it entails an array of productive capacities that empower the individual or household towards earning livelihood which in turn secure the individual or household that accessed and utilized it". Human assets enable those that utilise them to have advantages of engaging into gainful employment, off-farm activities, and other forms of engagements that pay and support livelihoods accomplishment which led to poverty reduction (Weiss, 2015). Sen (1997), however, argues that human assets rest on an individual's capabilities which involve knowledge, economic, social and mental capabilities which jointly would enhance investment and in turn lead to livelihood attainment of the individual or household. One can therefore infer that, human assets depict knowledge, employment opportunities resulting from the physical and mental capability that all together empower those that utilised it and enable them to meet their livelihoods requirements.

Empirical study stressed on the linkage between access to the human asset and poverty reduction, for instance, established that access to human asset enhances the income of households (Kamaruddin & Baharuddin, 2015), while in terms of food consumption it has been submitted that access to human asset improves and sustains food intake of households (Parmawati, 2018). Furthermore, the need to have access to the human asset has been emphasized as it empowers households and helps towards improving their wellbeing (Suleman et al., 2018). Lack of education and low-level educational qualifications has a relationship to poverty incidence, as such level of education relates positively to sustainable poverty reduction (Ibrahim et al., 2018). From the above overview, access to human assets consistently has an impact on sustainable poverty reduction as access to human assets enhances sustainable livelihoods. The studies under review were conducted in Nigeria and Southern Ghana; thus there is the need to further conduct a similar study in another environment to reassert the viability of access to human assets towards ensuring wellbeing.

The human capital of subsistence farmers in northern Ghana is weak with over 72% of farmers being illiterate (GLSS-5, 2008). This affects the ability of subsistence farmers to adopt innovations while diseases like malaria, tuberculosis and guinea worm limit their ability to work by an average of forty-eight days in a season (GLSS-5, 2008). The unimodal rainfall regime in the region further compromises their resolve to construct sustainable livelihoods by increasing their workdays (Batterbury, 2015; Asenso-Okyere et al., 2011). Labour scarcity is a major constraint to agriculture in northern Ghana, about forty-three percent (43%) of smallholder farmers' expenditure is spent hiring labour every season. This makes the population in each household an economic decision if complementary assets are needed in production. More successful households here will implicitly be those with more wives, children, and dependents (White, 2001).

2.2. Natural Capital

The term "natural capital" was first used in 1973 by E.F. Schumacher in his book "Small Is Beautiful" (Schumacher, 1973) and further developed by Herman Daly, Robert Costanza, and other researchers of the science of Ecological Economics, as part of a comprehensive critique of the shortcomings of conventional economics (Costanza & Daly, 1992; Farber, 1999). Natural capital is a concept central to economic assessment ecosystem services valuation which revolves around the idea, that non-human life produces goods and services that are essential to life. Thus, natural capital is essential to the sustainability of the economy. In a traditional economic analysis of the factors of production, natural capital would usually be classified as "land" distinct from traditional "capital". The historical distinction between "land" and "capital" defined "land" as naturally occurring with a fixed supply, whereas "capital," as originally defined referred only to man-made goods. It is, however, misleading to view "land" as if its productive capacity is fixed, because natural capital can be improved or degraded by the actions of man over time. Moreover, natural capital yields benefit and goods, such as timber or food, which can be harvested by humans. These benefits are like those realized by owners of infrastructural capital which yields more goods, such as a factory that produces automobiles just as an apple tree produces apples. Natural capital is the gift of nature (Guerry et al., 2015; Israr & Khan, 2010). It includes land, forests, biodiversity, wildlife, rivers, etc. (Li et al., 2012).

Without the use of natural capital, no production process whatsoever can ever be carried out. Natural capital is the term to describe natural resource inventory, and extensively means livelihood resource flow and related services. Natural capital can be divided into intangible public capital (such as air and biodiversity), tangible and divisible capital directly used in production (such as land, water, and trees), and the ecological services they provide (Su & Shang, 2009). This research mainly discusses the natural capital type of land resource. To farmers, the land is the support of natural capital, and the area of land is the base of natural capital inventory. Land type (field or hills) and land use (planting grains and economic crops or raising fowls) determine the amount of land earnings and value of natural capital, reflecting the direct use value of land resource. As scarce natural resource, even unused, land possesses its value as natural existence.

The interdependence between man and the environment makes life generally impossible without assistance from natural capital (Batterbury, 2015). According to Lopez (2008) and Boli (2005), in Bolivar and Kenya respectively, there is a positive correlation between livelihood outcomes and the size of landholding, with those having more access to land being generally better off. However, in a study on livelihood strategies in the Taita hills in Kenya by Soini (2005), natural assets were said to have a positive, but an insignificant contribution towards household income. Again, the findings of Samuel et al. (2020) on livelihood strategies at Wa revealed that 28% of household heads rely upon the capital available as the main business resource for a startup business. Findings from interviews with respondents clarified that, even though natural capital is the most available re-

source, they have become inadequate because of land acquisition, project construction by government, and sand mining and stone quarrying companies for social infrastructure development. This implies that even the natural capital has become scarce to serve as a strategic asset for livelihood development. The developments have led to the aged and those not having the financial muscle to engage in non-farming activities, while some must consider subsistence farming on any piece of land available including backyard farming to support the family or household.

2.3. Physical Capital

Mckay & Ansoms (2010); Jakobsen (2012); Guerry et al. (2015), state that: physical capital is a subset of capital including financial capital (money), human capital, social capital, and knowledge capital. Physical capital in economics is one of the three primary factors of production used to produce goods and services; representing the tangible man-made goods that help and support the production inventory, cash, equipment or real estate. Bridges, roads, irrigation canals and shelter etc. are examples of physical capital (Jakobsen, 2012). Better infrastructural facilities enable households to diversify their livelihood strategies and to get engaged in high-paying livelihood strategies (Xu et al., 2015; Erenstein, 2011). Physical capital is the physical households use to support their livelihoods in production and lives. It includes infrastructures and production means such as housing, traffic condition, communication, and health care. The role of physical capital is to help people meet their essential needs and get higher productivity. Lack of infrastructures, basic housing, and essential production materials usually leads to poverty. Lack of infrastructure may decrease the accessibility to the market. Without the assistance of tools and equipment, people cannot completely realize potential productivity (Erenstein, 2001).

Except for meeting essential needs inhabitation, housing possesses the utility of value maintained and added as a form of wealth. In a study on livelihood assets in East Africa by Mkenda et al. (2003), fishing gear (nets and boats) which were regularly damaged by whales and ships and accessible roads to transport fish to the market constituted the major physical assets in the livelihoods of the inhabitants of Zanzibar who were mainly fishermen. In a related work done by Lopez (2008), when he studied livelihood strategies in Bolivar and Ecuador, the regression output revealed that households owning small livestock and cattle which were both classified under physical assets were significant in their contribution to household income at 1% while productive assets like hoes, irrigation equipment, and backpack sprayer were also significant at 1% and 5% respectively. However, vehicles, chainsaws, and machetes were insignificant assets owned by farmers.

2.4. Financial Capital

Financial capital could include the availability of credit, savings and cash (Israr & Khan, 2010). For the rural population, the presence of financial institutions

and livestock constitute two very important financial assets (Erenstein, 2011; Guerry et al., 2015). Livestock ownership acts as a safety net for rural populations and can be relied upon when any adverse shock happens. Financial asset implies a range of economic sources and resources that empower households and individuals to accumulate wealth and make an investment and develop livelihood strategies to sustain their livelihood (Ibrahim et al., 2018). Bajwa (2015) states that financial assets comprise accessible stocks like cash and deposits, liquid assets such as livestock, and income or cash flow from regular income, farm and off-farm activities, transfers and remittances which improve livelihoods and provide an opportunity to accessing other livelihood assets. Furthermore, a financial asset is conceived as an economic resource pathway that includes deposits and credit in monetary terms, assets, and savings in banks as well as productive infrastructure that enhances livelihoods outcome and potential which in turn affect the wellbeing of households (Batterbury, 2015). The correlation between access to financial assets and the sustainability of livelihood outcomes which in turn influence the wellbeing of rural farmers has been proved by empirical studies. Ibrahim et al. (2018) asserted that access to financial assets enhances access to health and medical facilities because the household is able to afford medical bills which have a resultant effect on the human assets of the household. Similarly, a study conducted in Malaysia (Kamaruddin & Baharuddin, 2015) stressed that income increase supports household livelihoods which further helps in improving their wellbeing. In line with this, it was further confirmed that access to financial assets enhances the wellbeing of households as a benefit of transfer was found to have a positive correlation with increased income.

According to GLSS-5 (2008), twenty-seven percent (27%) of farm households in Ghana owe money or goods to other persons with the level of indebtedness more pronounced in rural Ghana (29.8%) than urban Ghana (24.1%). The fungibility of funds in subsistence livelihood and inadequate collateral makes subsistence farmers unattractive for commercial loans; this compels subsistence farmers to rely on their relatives, friends and traders most of the time for loans (GLSS-5, 2008; Ellis, 2000). Quaye (2008), reports that only 14% of farmers in the Northern region of Ghana have access to credit. Subsistence farmers' investment of their financial capital is not uniform across their asset endowment, eighty-nine (89%) of their investment is often spent on crops with the remaining eleven (11%) spent on livestock and fish (GLSS-5, 2008). In a study on livelihood capitals and outcomes in Kenya, financial capital was seen to be significant at 5% in its contribution to the household income of smallholder farmers (Soini, 2005). Nearness to landmarks like towns, cities, paved roads and major water bodies were all significant in influencing the amount of financial capital each household had (Lopez, 2008).

2.5. Social Capital

Social capital includes norms and networks of mutual benefit and relationships

of trust. It includes networks, family, voluntary associations (Erenstein, 2011). Social capital is the social resource use to realize their livelihood goals. It includes social resources obtained by joining formal or informal organizations or groups, and the social network or social relationships established among relatives and community neighbors. The roles of social capital for accumulating the other four types of capital are: 1) to increase economic efficiency. For example, the relationship of mutual trust may decrease complex formalities in mortgage and help to increase income and savings rate (that is, financial capital). 2) To effectively improve the maintenance of public infrastructures (such as the physical capital of countryside road), because the more people trust each other, the more they are willing to work together. 3) Social network is helpful to promote innovation, development, and sharing of knowledge (Erenstein, 2011).

Besides, it contributes greatly to a sense of happiness by acceptance, sense of honor, and sense of belonging. Social capital in the DFID (2000) livelihood framework measures the social resources upon which people structure their livelihoods. It includes network and vertical or horizontal connectedness; membership of more formalized group; and relationship, which is captured in kinship and reciprocity of trust. When social capital is vertical, citizen ability to participate in collective action is limited and influence over state markets becomes weaker. But horizontal social capital ensures higher levels of participation in social organization and other networks (Bebbington, 1999). Social capital is said to be the most important asset in terms of changing structures and processes which directly impact the other livelihood assets. Social capital here influences incomes as villages with higher levels of social capital are often wealthier. Studies by Soini (2005) in Uganda and Kenya respectively both concurred that there was no relationship between social capital and household income, contradicting the assertion portrayed in the (DFID, 2000) livelihood framework. According to Lopez (2008), the amount of social capital farmers had significantly improved their accessibility to loans to invest in agriculture.

3. Methods and Materials

In this study post-positivist research paradigm was adopted. The descriptive research design was chosen to permit obtaining and describing of information concerning the influence of livelihood assets on livelihood outcomes of smallholder farmers; how the available livelihood assets could be transformed through innovative livelihood coping strategies towards achieving sustainable livelihood outcomes for the rural dwellers who lost land in the Bawku East District of northern Ghana. The correlational design was utilised to permit investigation of the influence of livelihood assets on livelihood outcomes of smallholder farmers in Bawku East District of northern Ghana. The study purposively selected four villages (Baribari, Kulungungu, Missiga and Kard) out of the twelve villages as the target area because these villages had similar vegetational, climatic, social, cultural, social characteristics. Results from any findings will be same in any of

the 12 villages within the BED. According to the Bawku Municipal Statistics Service Department, the 4 villages targeted in this study have a total population of 11,985 inhabitants with 3876 persons as active farmers and farm owners as the target population (Ghana 2021 PHC). The sample size of participants included active smallholder farmers from the four villages seriously affected by land acquisitions for community development projects and by individuals for residential purposes, who would have been displaced from their farmlands, disrupting their livelihood and sustainability; key government officials and public servants within the Bawku East District Assemblies; representatives of NGOs in the affected villages. Since a population of 3876 was very big, the sample size of 400 participants from the rural areas was selected, and determined using the Sloven (1960) formula as shown below:

$$n = \frac{N}{1 + Ne^2}$$

where n = sample size; N = Target Population size and e = the level of precision of measurement (acceptable error margin); The error margin will be considered at a Level $e = 0.05$.

Thus, substituting into the Sloven's formula of

$$\begin{aligned} n &= N \div 1 + N(e)^2 \\ &= 3876 \div 1 + 3876(0.05)^2 \\ &= 3876 \div 1 + 3876(0.0025) \\ &= 400 \end{aligned}$$

Adoption of purposive sampling method ensured that the most qualified and key informants relevant to the focus of the study were selected. The Researcher's used a contracted professional photographer, his IPAD, Android phone and notebook for record purposes through video recordings and picture taking during the data collection process.

Structured interview guides and interview schedules elicited relevant data that underpins the objectives of the present study. The choice of the in-depth interview was used to allow the cross-checking of the survey results and to explain the realities behind the identified trends in the data. The observation method was used in this study; because it facilitated physical engagement that enabled researcher to get firsthand impression of events, by acting as a participant in all activities. An observation checklist was used as a guide in data collection as social and developmental facilities was observed on rural farmlands together with the related activities. Documentary review was based on the analysis of literary works of scholars, and it was an intensive exercise which involved deep analysis and interpretation of facts and findings/records of others (Mbabazi, 2008). One of the main methods used to collect data was the survey method because the population was too large to observe directly. The information collected was through self-administered questionnaires which were distributed to the respondents. This study majorly employed the survey method because it was cheaper

and convenient given its flexibility. One of the main methods also used to collect data was the questionnaire; because the population was too large to observe directly (Mbabazi, 2008). Many studies of Land Acquisition Structures/Processes employed questionnaire research techniques to examine Land Acquisition Structures/Processes and alternative livelihood outcomes of smallholder farmers. The focus group discussion method advantage was that it involved stakeholders who are normally part of the land acquisition structures and participated in the land acquisition processes; owned land and livelihood assets; initiated and implemented livelihood coping strategies for alternative livelihoods of land-lost smallholder farmers; and it was possible to have information which was obtained by use of a tool like a questionnaire on influence of livelihood assets on livelihood outcomes of smallholder farmers.

The observation and unit of analysis focused on smallholder farmers in four villages, namely: Baribari, Kulungungu, Kard and Missiga in the Bawku East District of the Upper East Region of Ghana who have lost their farmlands or have been compelled to leave their lands. The target population for this study was smallholder farmers, traditional leaders/Tindanas, family heads, government officials/influential individuals and commercial farmers within the agricultural sector. The study population constituted mostly of the smallholder farmers within the Bawku East Districts of Northern Ghana.

Triangulation of the research techniques, where several methods of data collection were employed was done. All data collection instruments were analysed to establish their consistency and validity. In order to ensure internal and external validity, a pilot test was conducted in Bador village of the Bawku East District using 20 participants. Results obtained were used to identify weaknesses in the guide and appropriate correction(s) made. To ensure reliability, the internal consistency was measured using the Cronbach alpha. Reliability is defined as the degree of consistency with which an instrument measures the attribute it is designed to measure. Reliability of the questionnaire was measured with Cronbach's alpha statistics using SPSS 20. Data was edited to detect errors and omissions and make corrections; classified based on common characteristics according to the descriptive attributes. Descriptive and inferential statistics, by means of the Statistical Package for the Social Sciences (SPSS) version 20 was also used to process the data collected for the study. The use of both manual and electronic coding helped in the identification of emergent trends and pattern in the data.

Data analysis involved both qualitative and quantitative data. The data ably answered the research questions and hypotheses. The descriptive analysis of the data was performed using SPSS analyses, while the research hypotheses were analysed using the Partial Least Square Structural Equation Model (PLS-SEM). The use of structural equation modeling, the Smart PLS has been proven to be an effective software for such analysis involving latent variables and mediation effect (Hair, Ringle, & Sarstedt, 2013). The final outputs and selected summary tables were transferred into the main report, findings presented, interpreted and conclusions deduced. The qualitative data helped to supplement the data that

had been generated quantitatively.

The researcher envisaged certain limitations that could inhibit the collection of rich data and overall findings of the study. These were forestalled through meeting with participants before the interview/FGDs to allay any fear or favour. Also, closed-ended questions were raised to elicit opinion of participants. The study strictly considered all the research ethics and protocol regarding the conduct of research of this kind with human subjects and the living conditions. The respondents were further assured of confidentiality of the information given and that the findings of the study were entirely for academic purposes only. Every respondent involved in the study was entitled to the right of privacy and dignity of treatment. The researcher employed all avenues and opportunities to ensure that all issues that were considered unethical in context were addressed. Questions included in the guide was ethically considered to avoid personal sensationalism and sentimentalism.

4. Discussion of Results

4.1. Descriptive Findings

This section shows descriptive statistics on livelihood assets. A 5-point Likert scale was used ranging from 1 to 5 with a midpoint or average as 3.0, meaning that any response statistics above 3.0 is deemed to be confirmed as a form of livelihood assets in the Bawku East District (see Table 1). The study examined the level of livelihood assets in the Bawku East District. The livelihood assets examined included human capital assets, social capital assets, natural capital assets, financial capital assets, and physical capital assets. The findings are presented in Table 1.

The results in Table 1 show that there is high level of experience in crop farming among farmers in Bawku East District (M = 4.04). This thus requires that farmers experience is an important human capital asset that need to be relied on among farmers for better livelihoods. This finding is contrary to what was revealed in the GLSS-5 (2008) where it was reported that human capital of subsistence farmers in northern Ghana is weak with over 72% of farmers being illiterate. However, the basis of the previous finding in the Ghana Statistical Service was based on the level of literacy but not the farmers experience.

The study findings also show that availability of social capital for farmers is generally very low as indicated by many of the respondents (M = 4.76). Here, it was affirmed by the participants that social capital benefits include remittances, giving of lands for livelihood activities, gifts and motivation etc., and the availability of social capital for farmers is generally low. This calls for much needed efforts among farmers to improve social capital through networks together with shared norms, values and understandings that facilitate co-operation within or among groups. In agreement, studies by Soini (2005) in Uganda and Kenya respectively both concurred that social capital among households was very minimal and whose contribution was insignificant.

Table 1. The level of livelihood assets in the Bawku East District.

Livelihood Assets (Valid N List Wise – 200)	Mean	Std. Deviation
Human Capital Assets		
Farmers in this locality have much experience in crop farming	4.0350	0.51488
Farmers in this neighborhood generally have strong and healthy family members to support in small farming.	2.7550	1.07739
Pooled Mean & Standard Deviation	**3.395**	**0.795**
Social capital Assets		
Social capital benefits include remittances, giving of lands for livelihood activities, gifts and motivation, etc.	3.8800	0.77369
Availability of Social capital for farmers is generally low.	4.7550	0.71942
Pooled Mean & Standard Deviation	**4.3175**	**4.32**
Natural Capital Assets		
Natural Capital include water, Trees, firewood, etc.	4.2050	1.20425
Land size or natural assets have reduced	4.4150	1.05277
Pooled Mean & Standard Deviation	**4.31**	**0.905**
Financial Capital Assets		
Farmers' financial capital includes access to credit, bank account, etc.	4.5050	0.98224
Farmers financial assets have reduced	4.5500	0.83124
Pooled Mean & Standard Deviation	**4.5275**	**0.905**
Physical capital Assets		
Farmers' have physical assets like ownership of land, farm equipment(s), motorcycle, etc.	4.2650	0.60548
Farmers have less physical capital assets	4.3700	1.09043
Pooled Mean & Standard Deviation	**4.3175**	**0.85**
Aggregate Mean & Standard Deviation	**4.17**	**0.89**

With regards to *Natural Capital*, the participants indicated that the available Natural Capital include water, Trees, firewood and their land size or natural assets are reduced due to land acquisition. The study findings further showed that land size or natural assets have greatly reduced (M = 4.42). Given that, farmers mainly depend on land for livelihoods, integrated sustainable use of the available land/natural resources is urgently required. In agreement the findings of Samuel et al. (2020) on livelihood strategies at Wa revealed that 28% of household heads rely upon the available land but whose size has greatly reduced because of land acquisition, project construction by government, sand mining and stone quarrying companies for social infrastructure development.

The study findings further revealed that farmers financial assets have very highly reduced (M = 4.55) attesting that farmer's financial capital includes access to credit, bank account etc.; but then farmers financial assets have reduced be-

cause of land acquisition. This is an indication that farmers must be engaged in various income generating activities to improve their financial assets. In line with the study findings, the GLSS-5 (2008) indicates that 27% of farming households in Ghana owe money or goods to other persons with the level of indebtedness more pronounced in rural Ghana (29.8%) than urban Ghana (24.1%). Similarly, Quaye (2008), reports that only 14% of farmers in the Northern region of Ghana have access to credit. Subsistence farmers' investment of their financial capital is not uniform across their asset endowment, eighty-nine (89%) of their investment is often spent on crops with the remaining eleven (11%) spent on livestock and fish (GLSS-5, 2008).

Further still, farmers in Bawku East District have very less physical capital assets (M = 4.37). It occurs that the farmers physical assets comprise ownership of land, farm equipment(s), motorcycle etc. However, the farmers have less physical capital assets due to land acquisition. This implies that farmers in Bawku East District need to have different income sources to achieve assets, such as buildings, machinery, and vehicles which can uplift their living standards.

Overall, it was discovered that in terms of the importance of livelihood assets in the Bawku East District; Financial Capital is of most importance to the participants (Cum. mean 4.5275), followed by Physical capital (Cum. mean 4.3175) and social capital (Cum. mean 4.3175), Natural Capital (Cum. mean 4.31), and the least is Human Capital Assets (Cum. mean 3.395). This also means that the farmers in the Bawku East District do not have strong human capital as compared to the others. But then need more financial capital to be productive and survive in the midst of the high rate of land acquisition.

4.2. Effect of Livelihood Assets Utilization on Livelihood Outcomes

The study also looked at the effect of livelihood assets on livelihood outcomes. The following results were discovered (see **Table 2**). The responses ranges from disagreed (Minimum 2) and strongly agreed (Maximum 5). The mean scores showed that all the assertions have mean scores greater than 4 (agreed) which means that they are established to be having significant effect on livelihood outcomes. The following results were confirmed: Financial assets and human capital positively influences farmers livelihood strategies and outcomes in the area of post displacement wellbeing and capabilities (mean 4.1100, Std. Dev. 1.17679); There is lack of coordination between agencies and chiefs handling land acquisition matters which affects the farmers (mean 4.1550, Std. Dev.1.25253); Farmers integrate capital assets in an interaction process involving human resources and livelihood strategies that produces positive outcomes in a post resettlement life satisfaction (mean 4.2350, Std. Dev. 1.19032); The type of livelihood asset available guides the determination of a particular strategy necessary for survival (mean 4.3500, Std. Dev. 1.06921); Reduction in land size or natural assets due to land acquisition negatively affect farmers' livelihood strategies and outcomes in the area

Table 2. Descriptive statistics on livelihood outcomes.

	N	Minimum	Maximum	Mean	Std. Deviation
Financial assets and human capital positively influence farmers livelihood strategies and outcomes in the area of post displacement wellbeing and capabilities	200	2.00	5.00	4.1100	1.17679
There is lack of coordination between agencies and chiefs handling land acquisition matters which affects the farmers	200	2.00	5.00	4.1550	1.25253
Farmers integrate capital assets in an interaction process involving human resources and livelihood strategies that produces positive outcomes in a post resettlement life satisfaction	200	2.00	5.00	4.2350	1.19032
The type of livelihood asset available guides the determination of a particular strategy necessary for survival	200	2.00	5.00	4.3500	1.06921
Reduction in land size or natural assets due to land acquisition negatively affect farmers' livelihood strategies and outcomes in the area of post displacement poverty	200	2.00	5.00	4.5350	0.98163
Livelihood assets are significant factors necessary to develop survival strategies	200	2.00	5.00	4.5450	0.98122
Having different kinds of assets helps to achieve positive livelihood outcomes by improving post displacement food security	200	2.00	5.00	4.5800	0.93701
Cumulative Effect (listwise)	200			**4.3586**	

Source: Field Findings, 2020.

of post displacement poverty (mean 4.5350, Std. Dev. 0.98163); Livelihood assets are significant factors necessary to develop survival strategies (mean 4.5450, Std. Dev. 0.98122) and; having different kinds of assets helps to achieve positive livelihood outcomes by improving post displacement food security (mean 4.5800, Std Dev. 0.93701). The overall mean score further established the cumulative effect with a mean score of 4.3586.

5. Summary of Results

It was revealed that farmers' access to livelihood capital improved their internal locus of control, farming management abilities and ultimately boosted their agricultural entrepreneurial capabilities; and the farmers should use their human capital (farming skills/knowledge) to improve on their other livelihood capitals to enhance their entrepreneurial skills.

Results showed that there was high level of experience in crop farming among farmers in Bawku East District (M = 4.04), and this experience is an important human capital asset that need to be relied on among farmers for better livelihoods.

The study findings also showed that availability of social capital for farmers is generally very low as indicated by many of the respondents (M = 4.76); as it was affirmed by the participants that social capital benefits include remittances, giving of lands for livelihood activities, gifts and motivation, etc.

The study findings further showed that land size or natural assets have greatly re-

duced (M = 4.42); and given that, farmers mainly depend on land for livelihoods, integrated sustainable use of the available land/natural resources is urgently required.

The study findings also revealed that farmers financial assets have very highly reduced (M = 4.55) attesting that Farmers financial capital includes access to credit, bank account etc., but then Farmers financial assets have reduced because of land acquisition. This is an indication that farmers must be engaged in various income generating activities to improve their financial assets.

Further still, farmers in Bawku East District generally had fewer physical capital assets (M = 4.37) which implies that they need to have different income sources to achieve assets, such as buildings, machinery, and vehicles which can uplift their living standards.

Overall, it was discovered that in terms of the importance of livelihood assets in the Bawku East District; Financial Capital is of most importance to the participants (Cum. mean 4.5275), followed by Physical capital (Cum. mean 4.3175) and social capital (Cum. mean 4.3175), Natural Capital (Cum. mean 4.31), and the least is Human Capital Assets (Cum. mean 3.395). This also means that the farmers in the Bawku East District do not have a strong human capital as compared to the others. But then, need more financial capital to be productive and survive during the high rate of land acquisition.

6. Recommendations

It is recommended that, the Government of Ghana:

Through the Ministry of Food and Agriculture (MOFA) assist educate farmers in Bawku East District on the available livelihood assets and support them with financial capital to highly invest in non-agricultural specialization for better livelihood outcomes as agriculture becomes non-productive due to loss of land.

Through its Ministry of Lands and Natural Resources ensure sustainable use of arable land and natural resources. Boost or scale training in modern farming methods for smallholder farmers, and increase access to affordable and reliable agricultural and agricultural assets credit for smallholder farmers in Ghana.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

Abbassi et al. (2019). CSR in SME—Paper Ismail Abbasi. *Journal of Humanities and Social Sciences, 244,* 153-164.

Asenso-Okyere, K. et al. (2011). Understanding the Interaction between Farm Labor Productivity, and Health and Nutrition: A Survey of the Evidence. *Journal of Development and Agricultural Economic, 7,* 1-11.

Bajwa, S. K. (2015). *A Study of Status of Livelihood Assets at Household Level: Evidence from Saidpur Village, Pakistan*. Discussion Paper, Institute for Development Economics.

Batterbury, S. (2015). Scoones, Ian. 2015. Sustainable Rural Livelihoods and Rural Development. UK: Practical Action Publishing and Winnipeg, CA: Fernwood Publishing.

Reviewed by Simon Batterbury. *Journal of Political Ecology, 23,* 492-494.

Bebbington, A. (1999). Capitals and Capabilities: A Framework for Analyzing Peasant Viability, Rural Livelihoods and Poverty. *World Development, 27,* 2021-2044. https://doi.org/10.1016/S0305-750X(99)00104-7 https://www.sciencedirect.com

Boli, J. (2005). *The Globalization Reader* (5th ed.). Library of Congress Cataloging-in-Publication Data.

Butt, T. M., Gao, Q., & Yousuf Hussan, M. (2015). An Analysis of the Effectiveness of Farmer Field School (FFS) Approach in Sustainable Rural Livelihood (SRL): The Experience of Punjab-Pakistan. *Agricultural Sciences, 6,* 1164-1175. https://doi.org/10.4236/as.2015.610111

Costanza, R., & Daly, H. E. (1992). Natural Capital and Sustainable Development. *Conservation Biology, 6,* 37-46. https://doi.org/10.1046/j.1523-1739.1992.610037.x

DFID (2000). *DFID's Sustainable Livelihoods Approach and Its Framework.* http://www.glopp.ch

Ellis, F. (2000). *Rural Livelihoods and Diversification in Developing Countries*. Oxford University Press.

Erenstein, O. (2011). Livelihood Assets as a Multidimensional Inverse Proxy for Poverty: A District-Level Analysis of the Indian Indo-Gangetic Plains. *Journal of Human Development and Capabilities, 12,* 283-302. https://www.tandfonline.com https://doi.org/10.1080/19452829.2011.571094

Farber, H. S. (1999). *Alternative and Part-Time Employment Arrangements as a Response to Job Loss*. https://doi.org/10.3386/w7002

GLSS-5 (2008). *Ghana Statistical Service (2008) Ghana Living Standards Survey, Report of the Fifth Round (GLSS 5).* Accra.

Guerry, A. D. et al. (2015). Natural Capital and Ecosystem Services Informing Decisions: From Promise to Practice. *Proceedings of the National Academy of Sciences of the United States of America, 112,* 7348-7355. https://www.researchgate.net

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Editorial-Partial Least Squares Structural Equation Modeling: Rigorous Applications, Better Results and Higher Acceptance. *Social Science Research Network*. https://papers.ssrn.com/abstract=2233795

Ibrahim, S. et al. (2018). *Has Civil Society Helped the Poor?—A Review of the Roles and Contributions of Civil Society to Poverty Reduction*?

Israr, M., & Khan, H. A. (2010). Availability and Access to Capitals of Rural Household in Northern Pakistan. *Sarhad Journal of Agriculture, 26,* 443-450.

Jakobsen, K. (2012). Livelihood Asset Maps: A Multidimensional Approach to Measuring Risk-Management Capacity and Adaptation Policy Targeting a Case Study in Bhutan. *Regional Environmental Change, 13,* 219-233. https://doi.org/10.1007/s10113-012-0320-7

Kamaruddin, B., & Samsudin, S. (2014). The Sustainable Livelihoods Index: A Tool to Assess the Ability and Preparedness of the Rural Poor in Receiving Entrepreneurial Project. *Journal of Social Economics Research, 1,* 108-117. https://www.researchgate.net

Kamaruddin, R., & Baharuddin, A. H. (2015). The Importance of Good Aquaculture Practices in Improving Fish Farmer's Income: A Case of Malaysia. *International Journal of Social Economics, 42,* 1090-1105. https://doi.org/10.1108/IJSE-02-2014-0028

Li, D. et al. (2012). Clonal Evolution in Relapsed Acute Myeloid Leukaemia Revealed by Whole-Genome Sequencing. *Nature, 481,* 506-510.

Lopez, R. S. (2008). *Livelihood Strategies of Farmers in Bolivar, Ecuador: Asset Distribution, Activity Selection and Income Generation Decisions in Rural Households.* Virginia Polytechnic Institute and State University.

Mbabazi, T. (2008). *A Sure Friendly Guide to Research and Research Methods.* Jotain Co. Ltd.

McKay, A., & Ansoms, A. (2010). A Quantitative Analysis of Poverty and Livelihood Profiles: The Case of Rural Rwanda. *Food Policy, 35,* 584-598. https://doi.org/10.1016/j.foodpol.2010.06.006

Mkenda, A. F., Richmond, M. D., & De Villiers, A. (2003). *Livelihood Assets Required for an East Africa FADs Programme.* https://www.mrag.co.uk

Mumuni, E., & Oladele, O. I. (2016). Access to Livelihood Capitals and Propensity for Entrepreneurship amongst Rice Farmers in Ghana. *Agriculture & Food Security, 5,* Article No. 1.

Parmawati, R. et al. (2018). Analysis of Village Tourism Development in Sawahan, Trenggalek Regency, Indonesia: A Sustainable Livelihood Approach. *E-Journal of Tourism, 5,* 46-53. https://doi.org/10.24922/eot.v5i1.35181

Quaye, W. (2008). Food Security Situation in Northern Ghana, Coping Strategies and Related Constraints. *African Journal of Agricultural Research, 3,* 334-342.

Samuel, R. D., Tenenbaum, G., & Galily, Y. (2020). The 2020 Coronavirus Pandemic as a Change-Event in Sport Performers' Careers: Conceptual and Applied Practice Considerations. *Frontiers in Psychology, 11,* Article ID: 567966. https://doi.org/10.3389/fpsyg.2020.567966

Schumacher, E. F. (1973). *Small Is Beautiful.* Blond & Briggs.

Sen, A. (1997). Editorial: Human Capital and Human Capability. *World Development, 25,* 1959-1961. https://doi.org/10.1016/S0305-750X(97)10014-6

Sloven, E. (1960). Slovin's Formula for Sampling Technique. Journal of Geoscience and Environment Protection, *8*.

Soini, E. (2005). Land Use Change Patterns and Livelihood Dynamics on the Slopes of Mt. Kilimanjaro, Tanzania. *Agricultural Systems, 85,* 306-323. https://doi.org/10.1016/j.agsy.2005.06.013

Su, F., & Shang, H. Y. (2009). Relationship Analysis between the Response to Participate in Eco-Compensation and Livelihood Assets: A Heihe River Basin Example. *Advanced Materials Research, 113-116,* 317-321.

Suleman, A., Suleman, F., & Reis, E. (2018). Fuzzy Approach to Discrete Data Reduction: An Application in Economics for Assessing the Skill Premium. *Journal of Business Economics and Management, 17,* 414-429. https://doi.org/10.3846/16111699.2014.978361

Udoh, E. J., Akpan, S. B., & Uko, E. F. (2017). Assessment of Sustainable Livelihood Assets of Farming Households in Akwa Ibom State, Nigeria. *Journal of Sustainable Development, 10,* 83-96. https://doi.org/10.5539/jsd.v10n4p83

Weiss, J. A. (2015). The Aid Paradigm for Poverty Reduction: Does It Make Sense? *Development Policy Review, 26,* 407-426.

White, H. (2001). Combining Quantitative and Qualitative Approaches in Poverty Analysis. *World Development, 30,* 511-522. https://citeseerx.ist.psu.edu

Xu, D. D. et al. (2015). Household Livelihood Strategies and Dependence on Agriculture in the Mountainous Settlements in the Three Gorges Reservoir Area, China. *Sustainability, 7,* 4850-4869. https://www.researchgate.net https://doi.org/10.3390/su7054850