

## **Agricultural land use at East Akim municipality in the Eastern Region of Ghana**

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### ***Abstract***

*The last decade has witnessed a flow in large-scale and long-term acquisition of agricultural land in many developing countries. This trend has been driven by the recent global food price crises, fears about energy insecurity and a surge in Foreign Direct Investment flows. The objectives of the study are to present an analysis of East Akim Farmers database into land area, main crops and commodity basis. The study was undertaken in the East Akim Municipality of the Eastern Region of Ghana in which a major device for data collection was questionnaire, which was determined after its validity and reliability among 1,036 farmers from sixteen communities. The compilation and development of farmers' database were carried out. The database of farmers was sorted according to crop and commodity disciplines. Land area acquired for each crop by farmer was determined. Land acquisitions for agricultural projects over 4,400 hectares were used. For data analysis and interactions existed among variables, descriptive statistics were used. The study demonstrated the highest (1,913 hectares) land area under Cocoa cultivation. The results of the study show the importance of agricultural land use prior to drawing up a research programme to address the concerns of farmers.*

***Key Words: Land use, crop production, land area, commodity, discipline***

### **L'utilisation des terres agricoles dans la municipalité d' East Akim dans la région Orientale du Ghana**

#### ***Résumé***

*Au cours de la dernière décennie, on a observé un flux dans l'acquisition à grande échelle et à long terme de terres agricoles dans de nombreux pays de développement. Cette tendance a été influencée par les crises mondiales récentes des prix alimentaires, les craintes concernant l'insécurité énergétique et la flambée des flux d'investissements directs étrangers. Les objectifs de l'étude sont de présenter une analyse de la base de données des agriculteurs d'East Akim sur la base de la superficie des terres, les cultures principales et la*

*commodité. L'implication politique est que les interventions agricoles devraient être développées sur la base de zones agro-écologiques. Les colis globaux d'amélioration des cultures devraient être évités. L'action politique recommandée est que les agriculteurs des cultures vivrières devraient être aidés à améliorer la gestion de leurs terres agricoles sur les zones écologiques à deux niveaux. Tout d'abord, les pratiques communes et la promotion de la production agricole dans chaque zone devraient être ciblées pour l'amélioration. Deuxièmement, les pratiques de gestion des terres qui ne sont pas actuellement utilisées par les agriculteurs dans chaque zone mais qui ont le potentiel d'améliorer la production végétale devraient être identifiées et promues dans les zones agro-écologiques. Une politique proactive de ce type fournira aux agriculteurs un meilleur usage des terres dans la municipalité d'East Akim. Des techniques quantitatives d'analyse de contenu ont été utilisées pour un inventaire systématique des bi-données avec la compilation et le développement de la base de données des agriculteurs d'East Akim sur seize zones urbaines. L'utilisation et la gestion des terres agricoles ont un effet important sur la superficie des terres des aliments et des cultures arborées dans toutes les quatre zones de la municipalité d'East Akim, dans la région orientale du Ghana.*

**Mots-clés:** *Gestion des terres, production végétale, zone terrestre, commodité, discipline*

### Introduction

The country report of Ministry of Food and Agriculture, Ghana (2003) takes stock of the available evidence on the state of large-scale land acquisitions that have occurred within the last decade. The trend is global and appears to be primarily driven by the production of crops for export, as well as the cultivation of plants for the production of biofuels. This trend which are generally characterised as a global land grab (Neville and Dauvergne, 2012; Borras *et al.*, 2011; Borras and Franco, 2010; Cotula *et al.*, 2009; Von Braun and Meinzen-Dick, 2009), has triggered lively and passionate discussions among researchers.

Land in Ghana is held from various stool lands, families or clans, which are the allodial owners. These lands are known as customary lands (Addo-Fenning, 1987; Appiah, 2011). The highest title in land recognized by law is the allodial title, a real property ownership system where the real property is owned free and clear of any superior landlord (Land

Ownership in Ghana, 2015). In this case, the owner will have an absolute title over the property.

According to Rocha and Lodoh (1999) leasehold is an interest in land that has a specified start and end for a period, subject to payment of annual ground rents and covenants. The majority of investors are foreigners. However, a significant number of land acquisitions involve Ghanaian investors, either operating wholly-owned ventures or in partnerships with foreign investors (Adarkwah, 2006; Ubink, 2010; Abegaz, 2011; Zhllima and Imami, 2012). Most of these land-based investments in Ghana concentrate on jatropha for the production of biofuel and the cultivation of cereals such as maize and rice for export (Asfaw *et al.*, 2010; Pray *et al.*, 2011; Makwarimba, 2014). This is why there is always the evidence that farmlands of small scale farmers are leased to investment (Odame, 2008; Menale *et al.*, 2008; Jayne, and Boughton, 2011). The result is the displacement of many farmers, leaving them to find marginal lands elsewhere.

A recent study by Ryan (2006) on increasing demand for land has been carried out in Ghana. Population pressures and increased interest in commercial investment have driven increasing demand for land in Ghana. However the use of farm lands has not received much attention. Hence there is little information on agriculture land use, the benefit and challenges to farmers growing indigenous crops in Ghana. Detailed information is important so that appropriate research can be properly planned to solve problems, and to address the specific needs of farmers wishing to increase land size to grow indigenous crops. The objectives of the study is to present an analysis of East Akim Farmers database into land area, main crops and commodity basis.

#### Materials and Methods

The study is based on a quantitative analysis techniques. Initial visits were paid to the study area to establish contacts and build confidence with the farmers involved in crops production. Most of the farmers who completed the questionnaire were farm owners with few as caretakers. Extension Officers from Ministry of Food and Agriculture (New-Tafo Akim) administered the questionnaires to registered farmers in East Akim Municipality. The East Akim Municipal Assembly has a total land area of approximately 725km<sup>2</sup> (PHC, 2010). The mean annual rainfall is between 125 mm and 175 mm (Ghana Meteorological Agency, 2010).

The first stage involved a systematic bio-data inventory of East Akim farmers of sixteen town areas from four zones: New Tafo, Osiem, Asafo and Kibi. This was carried out through questionnaire administration. The inventory involved collecting data about key parameters, including nature and origin of the land acquirer, project location, land area and main crops in the East Akim Municipality of the Eastern Region of Ghana.

The second stage dealt with the compilation and development of farmers' database (Osei-Kofi *et al.*, 2015). The compilation was undertaken by staff of CSIR - Plant Genetic Resources Research Institute and Extension Officers from the Ministry of Food and Agriculture (MoFA) East Akim Municipality. The database of farmers was sorted according to crop and commodity disciplines. Land area acquired for each crop by farmer was determined. Land acquisitions for agricultural projects over 4,400 hectares were used as of January 2013. Land size per crop and percentage frequency of responses were calculated. This task was beset by the absence of a national database of land acquisitions from which the total number of land transactions for agricultural purposes could be assembled.

Consequently, the study relied on the combination of several reports and lists compiled by different farmer groups and Extension Officers, the Hunger Project, the Consultative Group on International Agricultural Research. (CIDA) and MoFA (East Akim Municipality) responsible for economic activities requiring land acquisition. Data collected were analysed using Microsoft Excel Office 2010 version. Data were collected from January 2013 to December 2016.

#### Results

As shown in Fig. 1, 25.9% of the respondents belonged to the 51-60 age group who cultivated 1140 ha of land. This was followed by 22.70% of the age group 41-50 age who cultivated 999 ha. The 31-40 age group accounted for 19.20% and had cultivated 845 ha. Nine percent of farmers aged between 71-80 cultivated 396 ha of land for crop production. This implies that majority of farmers in East Akim falls within old age which poses a threat to agriculture development in the Municipality. The youth should be encouraged to embark on crop production.

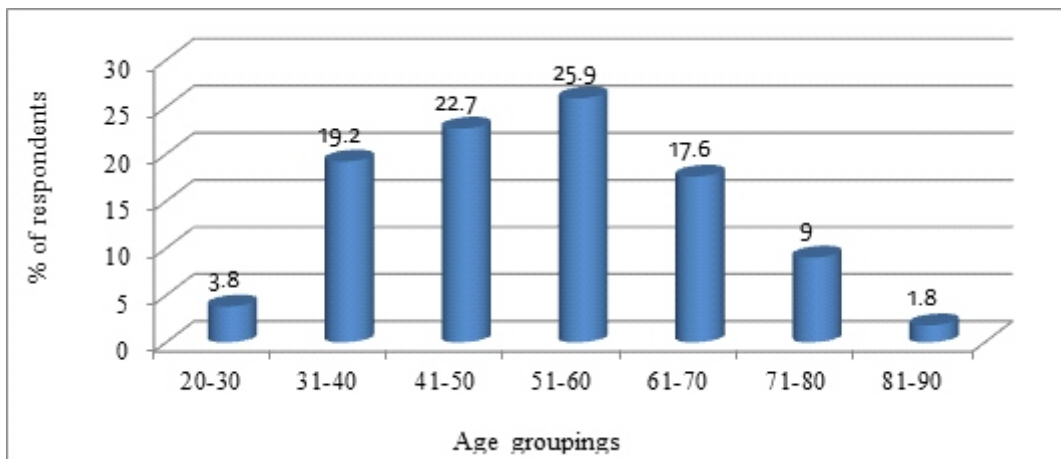


Fig. 1: Age grouping of respondents

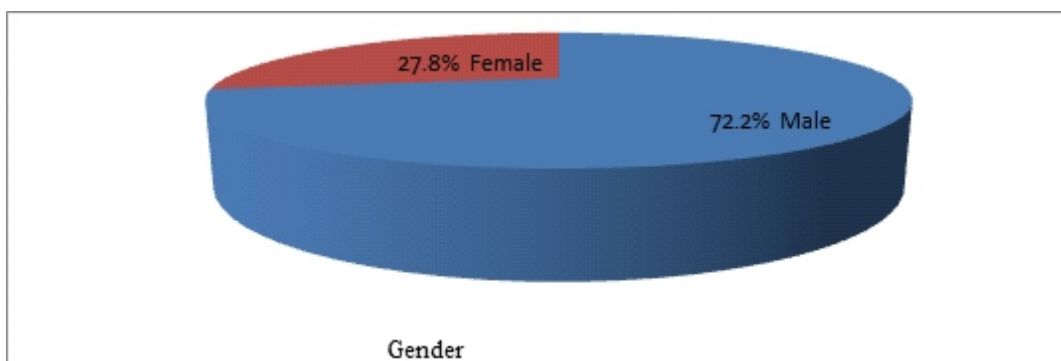


Fig 2: Land use specific to gender

The analysis of land use specific to gender showed that the dominant farmers were males (72.20%) (Fig 2). This may be due to the traditional nature of the Ghanaian work environment which encourages more males as compared to females to take up farming as a career.

On the educational level of farmers, as observed in the research, farmers with no educational qualification was 66.10%. This was followed by farmers by Middle School

Leaving Certificate (18.60%), Non Formal (7.10%), Junior High School (4.3%), Senior High School (1.9%), Tertiary (1.4%) and General Certificate of Education Ordinary Level (0.09%). This sometimes makes implementation of scientific innovation in agriculture difficult. Figure 4 shows land used for cereal production (maize and rice) in the East Akim Municipality. Almost all of the land acquired for cereals cultivation (99.50%) was used for maize production. Reasons attributed low production in rice were

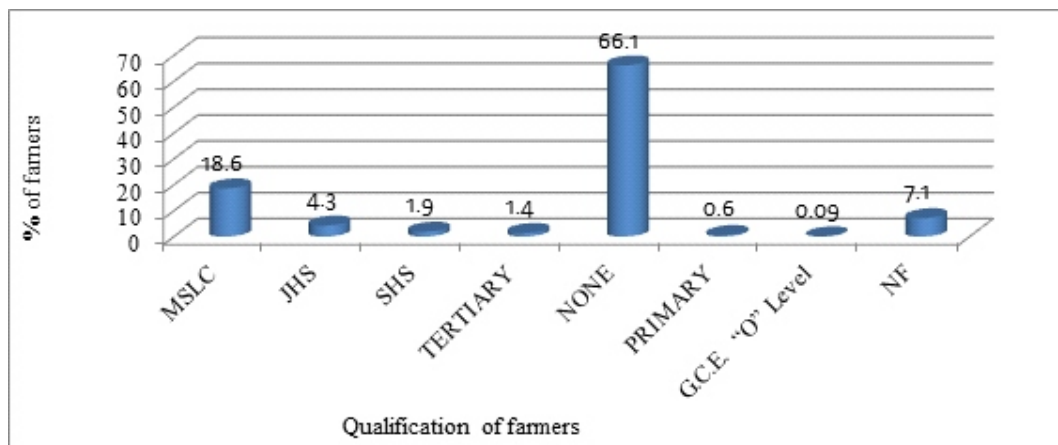


Fig. 3: Land use specific to Qualifications

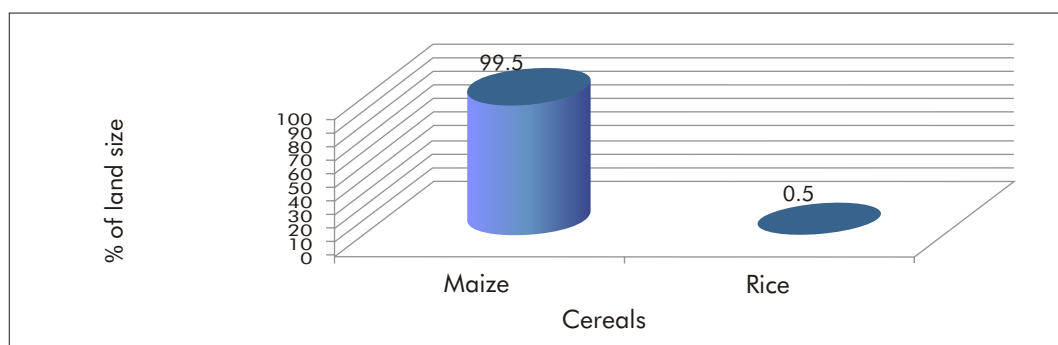


Fig. 4: land size used for cereals production

diseases and inadequate swampy areas in the Municipality. Plant protection division of the Ministry of Food and Agriculture and CSIR - Plant Genetic Resources Research Institute are to help control rice disease in the East Akim Municipality.

A total land of 775 hectare was used for Roots and Tubers cultivation in the sixteen operational areas at the East Akim Municipality. Land use for Roots and Tubers cultivation indicated a range from 26% in yams to 46% in Cassava (Fig. 5). The low cultivation of cocoyam was as a result of frequent use of

weedicide. Research should be conducted on the promotion of yams and other root and tuber crops such as *Colocasia esculenta* (Taro), sweet potato, Frafra potato, and others by farmers in the Municipality.

Two major tree crops; cocoa and oil palm cultivation constituted about 47.40% of the total land area used for crop production in the East Akim Municipality. Land used for tree crops showed a range from 8.3% in oil palm cultivation to 91.70% in cocoa cultivation. Reasons given for the low cultivation of oil palm were unfavorable cultural practices and

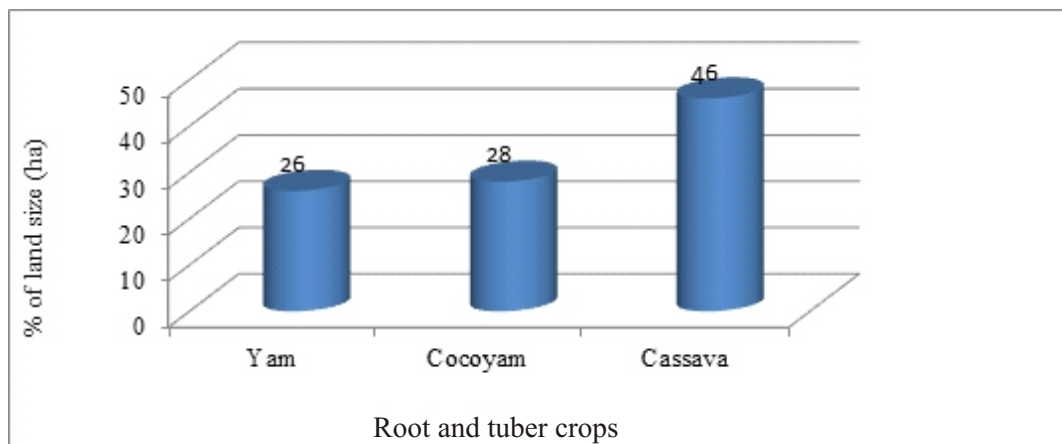


Fig. 5: Land use specific to Roots and Tubers

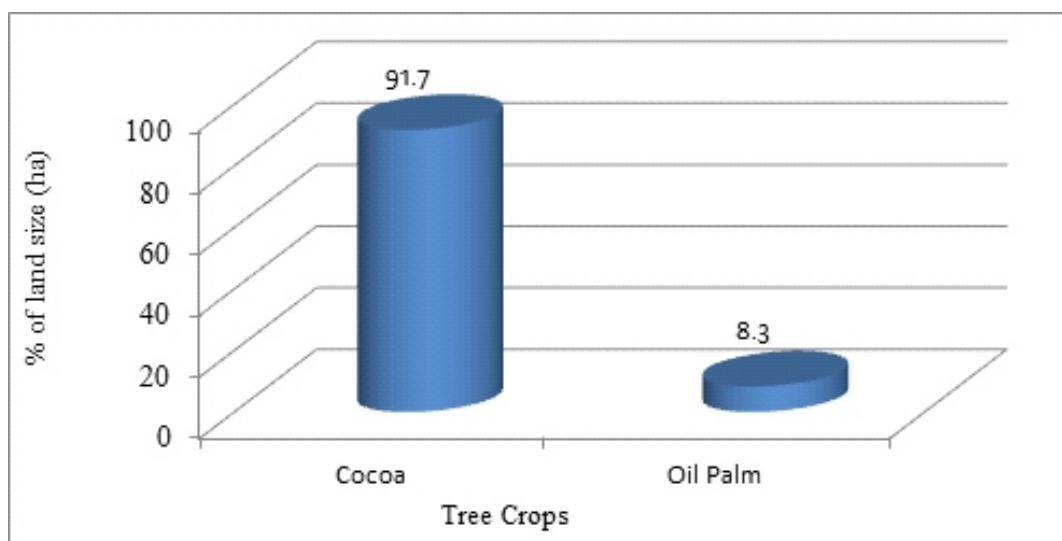


Fig. 6: Land use specific to tree crops

high cost of labour.

The land use specific to vegetables production in the East Akim municipality was highest for lettuce with 476 hectares. This was followed by pepper with fifty hectares. Cucumber accounted for the least (2 hectares) of vegetable cultivation in the Municipality

(Figure 7).

Figure 8 shows land use specific to commodity discipline. Tree crops recorded the highest land size of 2085 hectares. The land under Root and Tubers were 725 hectares. Vegetables were 320 hectares and plantain was 596 hectares. This was followed by commodity discipline which ranged from Cereals with

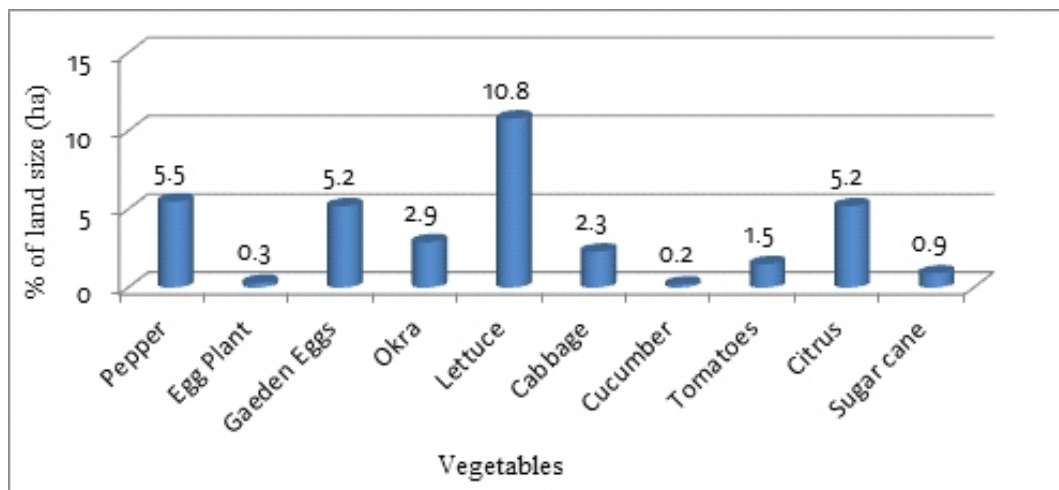


Fig. 7: Land use specific to Vegetables

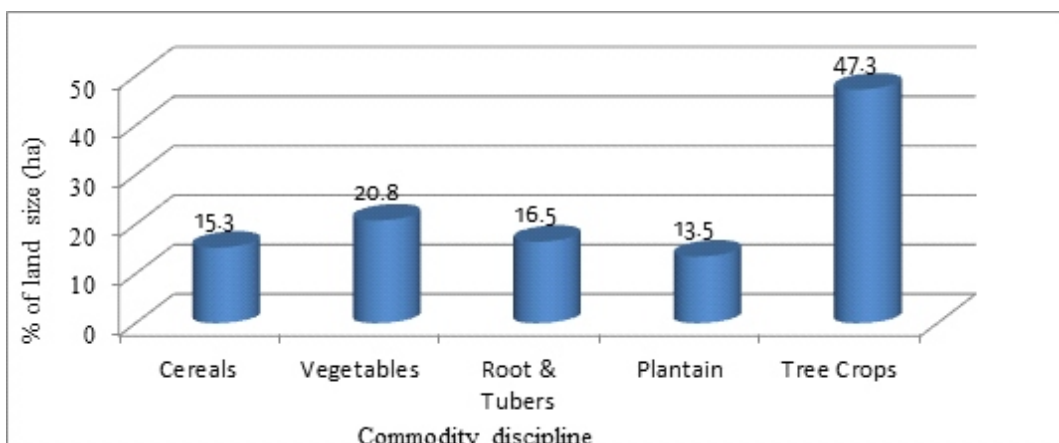


Fig.8: Land use specific to four commodity discipline

15.3% hectares to tree crops 2085 hectares.

Table 1 shows type of land use specific to crops. Area under cocoa cultivation accounted for the highest (43.50%) hectares of land used by farmers in the East Akim Minucipal.

Farmers received quality cocoa seedling from Bunso Seed Production Unit. This is motivat-

ing farmers to increase hectares of land for cocoa cultivation. Cocoa Research Institute of Ghana situated in New-Tafo Akim is also assisting cocoa farmers to ensure good agricultural practices to increase production in Ghana. Area under rice cultivation recorded the least (0.05%) hectares of land used for crops in the Municipality. Pest and diseases and lack of rice production equipment resulted into low cultivation of rice

Table 1: Land use specific to crops

S/N	Type of Land Use Total Land Area	Hectares	%
1	Area under Maize cultivation	671	15.20
2	Area under Plantain cultivation	596	13.50
3	Area under Pepper cultivation	50	1.10
4	Area under Egg Plant cultivation	3	0.06
5	Area under Garden Eggs cultivation	48	1.00
6	Area under Okro cultivation	27	0.60
7	Area under Rice cultivation	3	0.05
8	Area under Sugar cane cultivation	8	0.10
9	Area under Lettuce cultivation	99	2.30
10	Area under Cabbage cultivation	21	0.50
11	Area under Cucumber cultivation	2	0.45
12	Area under Tomatoes cultivation	14	0.30
13	Area under Coconut cultivation	48	1.00
14	Area under Yam cultivation	186	4.20
15	Area under Oil palm cultivation	172	3.90
16	Area under Cocoyam cultivation	201	4.50
17	Area under Cocoa cultivation	1913	43.50
18	Area under Cassava cultivation	338	7.90
		4400	100

Source: Field survey July 2016.

within the municipality.

**Discussion**

Majority of farmers in East Akim falls within old age. This study confirmed the work of

Winter *et al.*, (2009) who explained work that the average age of the American farmer is 55.3 compared with 39 for the U.S. worker. Farming is also one of the most hazardous industries in the nation. Their work continued to describe the behavior of older male and female farmers who claimed to be completely retired yet continued to perform farm work. Farmers completely old should not be excluded from farming since this would serve as an exercise. The study also revealed forty-five percent of the youth in agriculture. They should be encouraged to make use of agricultural lands for farming in Ghana. There is need to support both young and old farmers with technical and financial assistance.

The investigation shown that majority of farmers in the East Akim Municipal had no academic qualification. This situation calls for the attention of planners to offer training based on their knowledge level in agricultural land use. Motamed *et al.* (2011) demonstrated in their work that reinforcement may be made through study tours, field trips and training programmes which result in knowledge acquisition, learning the skills and ultimately increasing their productivity. Favero *et al.* (1994) argue that by using program management methods that minimize professional risks and take advantage of opportunities, policy educators at both state and local levels can and should work on farmers educational issues.

Land use for cassava of all root and tuber crops increased. This confirms the findings of Codjoe (2007) and FAO (1977) that cultivation and utilization of cassava significantly influenced the production of food crops in Ghana. It is now grown widely as a food crop or for industrial purposes. The industrial utilization of cassava roots is expanding every year. More scientists, agriculturists and sociologists have become aware of its importance in developing countries, where it



is most commonly produced. In many countries emphasis is being placed on land use for the improvement of production and utilization of cassava crops. Improvement in land use and food security in the sub Saharan Africa is paramount to farmers in the East Akim Municipality of the Eastern region of Ghana.

Area under cocoa cultivation accounted for the highest hectares of land in the East Akim Municipal. This study was contrary to the work of Asante-Pok, and Angelucci (2013). Their work on analysis of incentives and disincentives for cocoa producers supports some of the conclusions reached by recent field surveys undertaken in Ghana that raised the issue of an increasing number of cocoa producers shifting from cocoa production to more profitable crops. However, if the cocoa farmers are supported technically and financially, they will increase land size for cocoa cultivation.

### Conclusions

The study revealed that 4,400 hectares out of a total land area of approximately 725km<sup>2</sup> (PHC 2010) were used by farmers in the East Akim Municipal for crop production. This is acceptable as farmers intend increasing sizes of their agricultural lands for crop production. The study also showed that cocoa cultivation accounted for the highest hectares of land used by farmers in the Municipal and is financially rewarding.

### Recommendation

It is suggested that the Ministry of Food and Agricultural should capture into the national economy the contribution of agricultural land use and provide the necessary help and incentives to the farmers who expand these lands. The Non-formal education sector in collaboration with Agriculture extension division of the Ministry of Food and

Agriculture should embark on human resources development in the agriculture sector. Further studies should be carried out on agricultural land use in other districts in Ghana so that farmers get maximum benefits for cultivating the lands.

### Acknowledgements

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