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Implications of Third Party Voluntary Cocoa Certification on Labour and Livelihood Systems in Ghana

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***Abstract* – The study sets out to understand certification as an innovation and its potential in reorganizing cocoa production systems in Ghana. Third party certification as a key innovation in the cocoa production system of Ghana operates many standards that require a lot of efforts to comply. To reduce high labour cost, farmers were using *nnoboa* extensively to support each other. Certification has brought new rules and guidelines which are affecting how organisations involved in certification progressed. The level of competency required by standards bodies to operationalise certification is beyond the capacity of individual farmers and the farmer groups as well and therefore would require external support in the medium to long term. The improvement in the children's school attendance and access to basic school materials are subtle ways of cocoa certification to reduce the worst forms of child labour.**

***Keywords* – Voluntary Third Party Certification, Multi-Level Perspective, Child Labour, Adult Labour, Livelihood.**

I. INTRODUCTION

A. Background

The cocoa sector has become a multi-billion dollar industry that requires intensive labour at the farm level to meet the production demands of the expanding market. In Ghana, cocoa is currently contributes about 30% of total foreign exchange earnings (Quarmine, 2013). The sector also plays important role in providing rural livelihoods and opportunity for wealth creation. In responding to the non-ethical practices such as child labour and poor remuneration for producers in cocoa supply chain, both West African governments and industry companies have resorted to various certification options. These options include child labour monitoring system (Owusu-Amankwah et al, 2014), third party private voluntary certification systems and labelling schemes that are internationally recognised as providing benchmarks for rigorous scrutiny.

The adoption of these options by multinational cocoa business has been interpreted differently by different stakeholders. Many people see the options as tools to assist in reducing unsavoury reputation and improve sustainability of supply networks without weakening its long-term viability. To other industry players, subjecting producers to benchmarks and standards of third party auditing organizations such as Fairtrade, UTZ Certified and Rainforest Alliance is seen as a means of increasing the transparency of companies who subscribe to them. Certification is said to present a more profitable option for smallholders in terms of higher productivity than existing production systems. (Quarmine, (2013), Gockowski et al. (2013), Afari-Sefa et al. (2010)).

However, the certification process may exclude some farmers from accessing the accompanying benefits, especially farmers with cocoa lands smaller than 1ha and those who do not belong to farmer groups (KMPG, 2012). Again certification is said to be an expensive process (Kalus, 2004) and that certified producers apply a higher level of effort to enhance their cocoa bean quality than independent farmers (Quarmine, 2013).

Several studies and stakeholders have summed the ideas and pursued to achieve cocoa sustainability in economic, social and environmental aspects of cocoa production and processes. Whilst economic sustainability looks at increased productivity, increased price and therefore enhance incomes to farmers, environmental sustainability looks at utilizing the best farming practices in order to reduce the impact of such practices on the environment. Social criteria which form critical part of all certification initiatives, evolve largely around International Labour Organization (ILO) conventions such as ILO Convention 182 on worst forms of child labour (WFCL[1]), ILO Convention 29[2] on forced labour.

B. Problem and Research Questions

The productivity resulting from cocoa certification and traceability initiatives have been widely analysed (Faturoti, B. O. et al. 2012; World Bank, 2011;

[1] The Worst Forms of Child Labour (WFCL) is defined as:
• all forms of slavery or practices similar to slavery, such as the sale and trafficking of children,
debt bondage and serfdom, as well as forced or compulsory labour, including forced or compulsory
recruitment of children for use in armed conflict;
• the use, procuring or offering of a child for prostitution, for the production of pornography or
for pornographic performances;
• the use, procurement or offering of a child for illicit activities, in particular for the production
and trafficking of drugs as defined in relevant international treaties; and
• work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children, such harmful work to be determined by national authorities.

Hainmueller et al. 2011 KPMG, 2012, Nieburg, 2012, Kilian et. al. 2006). However the social aspect especially the impact of certification on reducing child labour and improving adult labour situations has seen little analysis. According to a KPMG/ICCO[3] study (2012) in spite of the impact of certification in eliminating child labour is an area of extreme importance for the long term success of certification, substantial field evidence is still not available.

Considering the fact that there is exoberant increase in the demand (120 percent between 2009-2011) for cocoa products from private third party voluntary certification organizations (Cocoa Barometer, 2012), this paper aims at ascertaining how cocoa certification is being implemented in Ghana and its implication on changing children social situation and mobilising farmers to confront the many challenges facing them. It analyses the implications of certification on productivity and livelihoods, the multiple actors involved, their relationships as well as how they impact on the socio-economic situations of children and farmers.

Using innovation theoretical framework as a point of departure, the paper explores the social implications of third party cocoa certification at the micro, meso and macro levels. The micro level consists of the farmers and farmer groups that incubate and undertake this innovation whilst the meso and macro levels consist of the activities, power relations, rules and procedures taken by the stakeholders to certify ethically produced cocoa.

The specific research questions are;

1. How do farmers perceive cocoa certification process?
2. What are the changing effects of third party cocoa certification on labour particularly child labour?
3. What are the implications of third party certification on livelihood goals of farmers?
4. How has certification affected organizational and institutional dynamics in the Cocoa industry?

The article is structured into five main sections. The introductory and research questions are presented in section one. In order to answer effectively the above-mentioned research questions, there is the need to explain the concepts of certification, innovation, child labour and livelihood. Therefore section two presents the conceptual framework. This will then be followed with section three, the methodological approach employed to answer specific research questions. Section four focuses on the empirical findings while section five presents discussions, conclusions and recommendations.

II. Conceptual Framework

A. Defining Hazardous Child Labour

[2] all work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily" (Art. 2(1)).

[3] This study was commissioned by International Cocoa Organisaton, the umbrella global cocoa organisation to assess the advantages and disadvantages of third party cocoa certification. It used both qualitative and quantitative methodology for the study

The Ghana Hazardous Activity Framework (HAF) has provided a clear framework for children participation in cocoa farming which takes into consideration the socio-cultural situation in cocoa growing communities (Owusu-Amankwah, 2014a). This was developed in compliance with ILO Convention 182 which Ghana has rectified and Ghana's Children Act 560 of 1998. Thus depending on their age, children can participate in activities such as watering seedlings, assisting in planting seedlings and scooping beans from broken pods as well as providing minimal help on the cocoa farm for about 2 hours after school. Conversely, hazardous work such as working with agro-chemical, carting heavy loans, cutting mistletoe and weeding with long machete are prohibited by Ghana's HAF.

In a study conducted by Owusu-Amankwah et al (2014a), cocoa farming families apportion tasks to children based on their body and psychosomatic maturity and not only on the age of the child age. Again the desire of a child to be seen as a 'good child' by parents and guardians also influence the support he/she gives to parents even at the expense of their education. This makes child labour socially and culturally entrenched. This is critical for children's involvement in cocoa work and these children should not only be targeted for separation from work but should be offered appropriate avenue to nurture their skills through cultural and legally acceptable framework that provides avenues for their involvement in cocoa business devoid of worst forms of child labour.

B. Certification Concepts Concerns Raised On Industry Public Certification System

The public certifcation process (PCP) adopted by chocolate manufacturers industry in 2005 has faced some criticisms. These criticisms are centred around the data collection, reporting, remediation and independent verification. The industry collaborated with governments particularly Ghana and Cote d'Ivoire to implement this process. The findings provided data on the nature and extent of child labour (MMYE, 2008) in cocoa sector of Ghana. The International Labor Rights Forum (ILRF) and Neil (2011) for instance have criticised that no standards were set for assessment. A study done by Tulane University in 2010 reported that, the PCP targeted the whole country as a unit instead of case by case and location by location and that no adequate provision were made for the remediation of the children invloved in the hazardous process. In response to these critisisms, many chocolate companies have adopted voluntary third party certification system. Several conceptual definitions of certification have been put forward among which are product standards, process standards and voluntary third party certification.

Product versus process standards

The Standards set for certification are '*documented agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines or definitions, to ensure that materials, products, processes and services are fit for their purpose*' (ISO, 2014, accessed 15 January). This definition shows clearly that standards are not only used for standardization, but

also as "guidelines" and for capacity building. Product standards are specifications and criteria for the characteristics of products, whilst process standards are criteria for the way the products are made. Social and environmental standards in agriculture are essentially process standards. The cocoa certification system is a process standard which is to ensure that cocoa production is free of child exploitation and it is environmental friendly.

Voluntary third party certification

Third party auditing is a management tool comprising a systematic, documented, periodic and objective evaluation undertaken by an independent third party on how well an organisation is performing with the aim of achieving more sustainable practices. The supposition of third party certification is that consumption of certified products can move supply chains toward sustainability, both in the specific goods or services consumed and by providing incentives to producers and sellers to change their practices (Cocoa Barometer, 2012).

Among the third party certification bodies operating in West Africa are Fair trade, Rainfall Alliance, Organic and UTZ certified. These are all private and voluntary. Business actors and farmer groups therefore could take voluntary decision to join and accept to allow their systems and farms to be subjected to inspection by internal and external inspectors. Consumers, development organizations and governments trust third party certification systems because apart from being facilitated by independent third party auditing, they have transparent standards and involve credible NGO partners. Studies have shown that certification schemes help cocoa farmers to improve their yield and have strengthened farmer based organizations and capacity building (Weissenfluh, 2010), KPMG, 12, Quartine, 2013)

Although these systems have their differences, the elimination of worst form of child labour and labour exploitation is central to their objectives (Neil, 2011). An independent auditing process is conducted and the assurance is provided by a party without direct interest in the economic relationship between the supplier and buyer. This paper focuses on the Voluntary Third Party Certification as an innovation to bring changes into cocoa production systems.

B. Third Party Voluntary Certification as Innovation

Change and innovation must be regarded as multi-actor processes evolving over a period of time. As farming is a carefully co-coordinated activity, a change in one domain has repercussions for other domains (Leeuwis, 2004). Therefore, one is always dealing with multiple changes in a complex system (ibid). Thus innovation is seen as a package of new social and technical arrangements and practices that implies new forms of coordination within a network of interrelated actors. Innovations are deliberate interventions designed to initiate and establish future developments concerning technology, economics, and social practices' (Howaldt & Schwarz, 2010). According to Leeuwis, (1999), innovation needs to be understood as a ''novel working whole'' In order words, it may be 'a new way of doing things' or even "doing new things", "new ideas", etc. He believed that innovation as defined above helps us to understand that it is not only composed of novel technical devices or procedures, but also of new or adapted human practices, including the conditions for such practice to happen.

Recent approaches tend to conceptualize innovation in systemic terms, as a process that involves, at each moment, many actors, their relationships, and the social and economic contexts.. Certification systems' and particularly third party certification systems are relatively new tools that have evolved globally to encourage and reward higher levels of social and environmental responsibility and accountability among chain actors. The third party certification systems put in place in the cocoa industry could be classified as forms of social innovation. These systems aim at meeting consumers demand for assurance of socially responsible cocoa product (Abbott, 2002). He further stated that the social attributes of African farmers have been the major concern of the new initiatives addressing socially responsible trade in cocoa. The aims of the certification schemes illustrate their pursuit of this social goal of elimination of worst form of child labour. They also seek to offer better prices to the farmers to ensure they are able to produce cocoa sustainably and have better livelihoods and social status. the demand for certified cocoa beans has increased about 130% between 2009 and 2011 (Cocoa Barometer, 2012).

There are multiple social units that participate in innovation strategies such as cocoa certification. Communities develop a range of social-organisational arrangements (Van Schoubroeck, 1999) such as forming farmer groups to access certification. As the process unfolds, decisions are continually being made by individuals, groups and organisations (governmental and non- governmental). In practice, it may be difficult to identify how decisions and actions feed into each other in a linear or logical sequence (Witte 1972). This study therefore adopts Multiple-level Perspective Approach (MLPA) that identifies three analytical levels to understand system innovations as interactive processes of change. This is at the micro and the meso levels. However both are embedded in a broader landscape of factors at the macro-level (e.g. Geels, 2002, 2005b; Verbong and Geels, 2007).

The micro-level units are formed by niches and act as incubation rooms. These niches are important, because they provide locations for learning processes and space to build the social networks which support innovations. For instance it would be important to assess the relationships that are being built between farmers, intermediaries (licensed buying companies), non-governmental organisations (NGOs) and other stakeholders. resultant learning process as it builds safety nets for producers to improve their social and economic situations. According to Greel (2005), the meso-level is formed by socio-technical regimes and relate very well with the standard bodies in cocoa certification arena. Their activities reproduce the elements and linkages in socio-technical systems. Each of these social groups has relative autonomy and at the same time could be interdependent

and interacting with each other. Interdependence and linkage between sub-systems occur because activities of social groups are coordinated and aligned to each other. Theoretically, the MLP framework will capture the interrelationships between the following domains: labour (adults and children), new institutional arrangements, organisations and livelihoods.

III. Methodology

The MLP involves interactive processes at the different levels of micro (niche), meso and macro levels. However systems innovation is much more complex than this as the interactive processes cut across the 'neatly' defined levels of micro, meso and macro.

The study therefore combined a mixed-method approach with both exploratory qualitative case study (Franke, 2005, Yin, 2001;) and quantitative methods for gathering and collating the responses to three main questions of the study: 1. how do farmers perceive the cocoa certification process? 2. what are the changing effects of third party cocoa certification on labour particularly child labour? and 3. how has certification affected organizational and institutional dynamics in the Cocoa industry?

Two case studies were pursued at the micro level to deepen understanding and give insight into certification process. Consequently, two cocoa growing communities; Takyikrom and Kofigyan in the Western Region, the highest cocoa producing region in Ghana were chosen to be part of the survey basically because it contains about 98 – 100 percent cocoa farmers. Data was collected from both certified (60 farmers) and non-certified farmers (30) from these communities organised into six groups. Cocoa farmers who are community leaders and some community members were also interviewed in the two communities. The leaders' interviews (Key informant interviews) were very important to give the socio economic background of the communities.

The qualitative methods included participant observations, in-depth interviews and focus group discussions (FGD). The FGDs sought to answer questions such as stakeholders perception of cocoa certification system and the extent to which certification was affecting social networks and social-organizational arrangement of cocoa production landscape. They were also used to find out the extent to which certification was preventing children's involvement in hazardous activities and mobilising adult labour.

Quantitative survey method was used to confirm results from the case studies especially on children social situations such as school attendance and participation in child work and hazardous work. Children of certified farmers from both TK and KK were interviewed one on one to assess the impact of certification on their education. They were also followed to their schools to check the register to confirm their attendance. School registers were examined to ascertain how regular were the children in respect of school for the first and second terms of the 2011/2012 academic year when cocoa activities were their peak.

Observations made by researchers were used to buttress some points, ascertain situations and to confirm an issue or otherwise. Where in doubt, questions were asked.

At the meso level analysis, representatives of organisations involved with certification were also interviewed one on one with semi structured questionnaires. Some of the intermediary organizations interacted with include AE-LBI, Rainforest Alliance (RA), AfriCert and Agro Eco. The macro level information was limited to the drivers of the certification process such as consumers, NGOs, media and government (from the North) largely through literature reviews and field observation.

IV. Empirical Findings/Results

A. Certification Standards And Compliance

All the farmers interviewed for the two communities were cocoa farmers who also cultivated other crops such as cassava, plantain and maize for domestic consumption and on a lesser level, for sale. It was observed in the community that few women own cocoa farms. Most of the farms are owned by the men with their wives supporting them in farming tasks. About 40% of farmers in Kofigyankrom (KK) and 35% from Takyikrom (TK) were involved in cocoa certification. Their main goals for joining certification are : to increase income, access financial support in terms of inputs and support from other farmers.

KK and TK were part of a project known as the Mars Partnership for African Cocoa Communities of Tomorrow (iMPACT) project which aimed at demonstrating that an integrated approach that includes agriculture, environment, education and health can lead to distinct changes in income and welfare of rural communities. The iMPACT project was launched by Mars Inc., one of the world's largest chocolate producers. The iMPACT project had six partners that included Rainforest Alliance (RA). RA did not work directly on the project but through Agro Eco-Louis Bolk Institute (AE-LBI) as consultants to promote the Sustainable Agriculture Network (SAN) standards. When the AE-LBI realised farmers were complying to the SAN standards decided to set up an Internal Management System (IMS) and introduced the group to certification. After certification of the group in 2010, the group was obliged to sell their certified beans through an Licensed Buying Companies (LBC) that has a traceable system and can also get clients willing to buy RA certified beans. Armajaro Limited qualified and was chosen. Agro Eco provided the technical support, AfriCert did the external Audit and Armajaro bought the certified beans. The COCOBOD officials provide extension support. There was also a lead farmer from the communities trained to offer daily assistance to farmers.

Premiums were paid on the amount of certified cocoa sold and not the quantity of beans certified produced. This shows the demand driven nature of certification process Fifty percent of the premium generated from cocoa bought certified goes to farmers as cash premium. Farmers received GhC7 and GHC 8 per bag of cocoa beans (64kg)

for 2010/11, 2011/12 respectively. The remaining 50% was used for operational cost by AE-LBI. From 2008 to 2010, the group had the full support from donor funding therefore operational cost was not borne by farmers. At the end of 2010 when the group got certified, then part of the premiums was saved for some operational cost that arose. Gradually, donor funding has reduced to about 10% of the total operational cost. This means the remaining 90% must be catered for from farmers premium. The operational cost came from capacity building, staff remuneration, compliance cost, certification cost (audits) and group development. The long term goal was that the farmers would be in charge of their Internal Management System. The farmers have therefore gone into formal groups within their communities and have district/apex executives. Currently, the executives form part of the decision making body for the group.

For example they helped in the formulation of budgets for the project. Through the organization of sub groups. The farmers have benefitted from input schemes from CalliGhana an input dealer and Opportunity International a micro finance organisation. AE-LBI is the administrator of the Internal management System (IMS) trying to build farmer organisations to take control of the IMS.

.....At the moment AE-LBI acts as the group Administrator and ensures that the processes required for certification are followed. To ensure the sustainability of the project the farmers are being organised into cooperatives to act as group Administrator. We therefore in the process of building the capacity of the farmers to manage the IMS. It does not appear that the farmers would have the capacity to manage the IMS and pass external audits all by themselves in both short and medium terms. External support will be necessary in the next 3-5 years. The reason given was that the level of education of the farmers is low (the highest among them was Basic Education). (Interactions with the AE-LBI Manager).

The description shows that there are multiple organisations involved in the on-going certification process as well as its coordination. It also means that the farmers have to deal with multiple stakeholders and processes. According to the administrator, certification has not introduced any other adult labour mobilisation system but encourages the traditional 'nnoboa', and sharecropping systems. Since cocoa farming is a small holder farming comprising thousands of farmers, auditing is done using IMS of the host organization. The team tries to document all internal processes that the host organization has undertaken to prepare the farmers for certification and interpret the standards in local terms. A sample of farms is physically audited to confirm or otherwise the processes, and activities contained in the IMS.

The ongoing third party voluntary traceable certification uses RA standards that were set by Sustainable Agriculture Network (SAN). Compliance is evaluated by audits conducted by SAN authorised certification bodies and auditors. This is done by measuring the degree of the farm's conformity to standards once a year. The standards consist of ten principles based on specific criteria that promote good environmental, labour and agronomic practices as shown in Table 1. The scope of the certification audits is the farm. Non compliance will lead to a sanction of non-conformity and therefore the farm will not be certified.

Table 1: SAN 10 Standards/Principles

Principle	Explanations
Management system	Social and environmental management must be in place so that auditors can confirm that farms are operated in compliance with the SAN standard and the laws of the respective countries.
Ecosystem conservation	Conservation of existing ecosystems and aid in the ecological restoration of critical areas..
Wild life protection	Monitor wildlife species on farms especially endangered species and their habitats on the land.
Water conservation	Conserve water by keeping track of water sources and consumption.
Working conditions	Farmers must ensure good working conditions for all employees, as defined by such international bodies as the United Nations and the International Labour Organization.
Occupational health and safety	Certified farms must have occupational health and safety programs to reduce the risk of accidents..
Integrated crop management	The SAN encourages the elimination of chemical products that pose dangers to people and the environment.
Community relations	The SAN standard requires farmers to be good neighbors and inform surrounding communities and local interest groups about their activities and plans.
Soil conservation	goal of SAN's sustainable agriculture approach is the long-term improvement of soils,
Integrated waste management	Certified farms are clean and orderly with programs for managing waste through recycling, reducing consumption and reuse.

Source: SAN Website, downloaded, 20 July 2013

Farmers in the study area and their groups were subjected to audit based on the content of SAN sustainable agriculture standards (SAS) as depicted in table 1. This consists of various activities among which are SAN Group Certification standards (GCS), SAN farm certification policy (FCS), SAN group certification policy (GCP) and SAN prohibited pesticide lists (PPL). The GCS for instance comprises training and capacity building; risk assessment and internal management system (IMS) and has a total of 16 criteria. All these have a scoring system upon which the farms are certified or otherwise. The study groups have been externally audited at least two times. Besides, the farmer groups administrator for the IMS /certificate holder, in this case Agro-Eco was also externally audited. These numerous standards according to an officer make *'certification process very involving and challenging'*.

B. Perception About Certification By Certified And Non-Certified Farmers

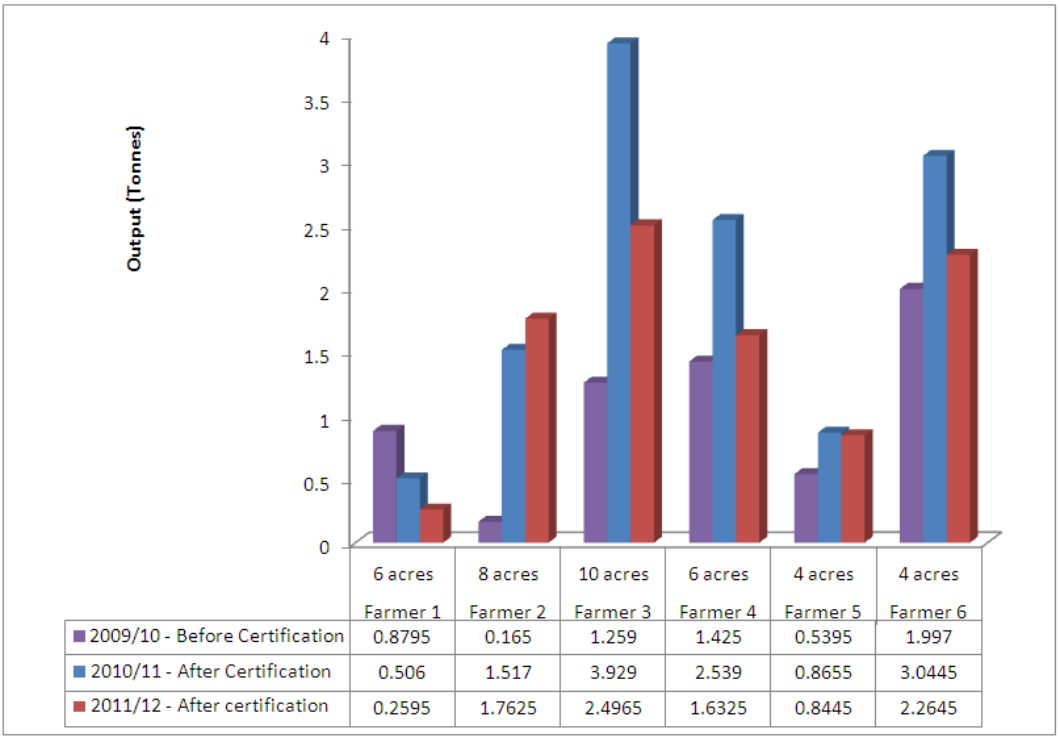
The certified farmers group in both Takyikrom and Kofi Gyan are either registered with Rainforest Alliance, Amajaro and GIZ. They claimed that they were involved in farmer field schools where they were taught how to use some certification standards. Among the lesson taught were good farm management, use of recommended chemicals for spraying and identification of cocoa diseases and pest of cocoa before formally introduced to certification. The farmers asserted that the standards were numerous, some difficult to use and require more efforts. For instance, they mentioned that the terms and conditions by farm caretakers and labourers which specify that farm caretakers and labourers should be provided with social security insurance cover, health insurance and meals are too difficult to meet. According to the farmers interviewed, they operate different systems known as *'nhweso'*(caretakers) and *'domayenkye'*(sharecropping). These arrangements have both social security and health insurance built in and that the caretakers and labourers ought to plan for their own social security insurance cover and health insurance. Most of the farmers have acquired cocoa farms through *'domayenkye' or sharecropping system so the system was quite helpful to the labourers and caretakers*. Certification requires them to weed regularly which results in more labour cost. Farmers claimed planting cocoa seedlings 10 meters apart allows weeds to grow fast and with the ban on weedicide coupled with reduction of the use of children, labour costs on the farm were too high.

On the positive side, the certified farmers identified stopping the use of agrochemicals as one of the easiest standard to implement and believed their health would be enhanced in the long term. They also admitted that as a result of the certification lessons, they are better managing their farms and thus saving some money. They could prepare a farm budget and were able to improve their productivity because of the new way of pruning. The premium paid on the yield as a major source of motivation to farmers to continue operating with certification. Also, because the cooperative is certified, information to improve production is easy to come by as periodic training is organized for them.

The 30 non certified farmers interviewed claimed have had heard of certification as a system that paid some premium when farmers follow certain laid down standards in the production of cocoa. They admitted the difference in yield between their farms and that of the certified farmers. They remarked that the certified farms looked more flourishing than the uncertified ones. As they put it in Twi, *"aye fefeefe na aya ahoden"*. This is translated to mean their farms have become beautiful and healthy. One of uncertified farmers said that he has been learning from a close relative who is a certified famer. When asked why they have not joined the cooperative, they mentioned they doubted the outcome of that new intervention and did not want to waste their money on registration neither do they want to waste their time as certification process requires a lot of time. In fact all of them asserted they have planned to join.

C. Implications of Cocoa Certification on Productivity, Farmers' Incomes

Most of the certified farmers interviewed agreed that certification has led to increase in their income. They claim that their income has been increasing as result of increasing yield after applying certification standards. Figure 2 describes the yield of certified farmers before and after certification.



	6 acres Farmer 1	8 acres Farmer 2	10 acres Farmer 3	6 acres Farmer 4	4 acres Farmer 5	4 acres Farmer 6
2009/10 - Before Certification	0.8795	0.165	1.259	1.425	0.5395	1.997
2010/11 - After Certification	0.506	1.517	3.929	2.539	0.8655	3.0445
2011/12 - After certification	0.2595	1.7625	2.4965	1.6325	0.8445	2.2645

As the graph depicts, apart from farmer 1, all the other farmers had an increase in yield from the 2009/10 production year to the 2010/11 production year. Farmer 1 attributed the lower yield to his inability to practice what he has been taught. Farmer 2 benefited more from the innovation of certification as he recorded an increase in yield from 0.17 tonnes to 1.52 tonnes representing about 89.12 percent increase from 2009/10 to 2010/11. Farmers 3 and 4 were able to increase their yield from 1.26 tonnes to 3.23 tonnes and 1.43 tonnes to 2.53 tonnes respectively. Farmers 5 and 6 who cultivated 4 acres each increased their yields by about 37 percent and 34 percent respectively. Farmer 5's increase was from 0.54 tonnes to 0.87 tonnes and farmer 6's increase was from about 2 tonnes to 3.04 tonnes. Thus there was a clear indication that farmers' who were part of certification system improved their yields.

There was however a general decline in the 2011/2012 production year. The major reason given by the farmers was the abysmal rainfall. From the above analysis, it has been observed that though certification was a major yielding, other factors such as availability of extension services and farmers commitment to adhere to certification practices, good weather conditions, timely availability of inputs are very important. Results from this study confirm the study conducted by KPMG in 2012. KPMG (2012) noted that the certification requirements help farmers to access key productivity enhancers such as optimum use of fertilizer, pesticides, training and good agricultural practices.

The farmers interviewed also mentioned that there has been a reduction in the amount of agro-chemicals applied with the introduction of other farm management practices such as line-and-peg method of planting and regular pruning of cocoa trees to allow enough sun rays into the plantation have reduced pest infestation. For instance, one farmer stated that he was previously applying 5 bags of fertilizers per acre of land but has reduced to 3 bags.

Fig.2 illustrates the gross farm income. It is seen from the figure that the average smallholder farmer would gain more to improve his livelihood with the certification than without certification.

$$Gross\ farm\ income_t = (volume + \Delta volume_t) \times (farmgate\ price + premium_t)$$

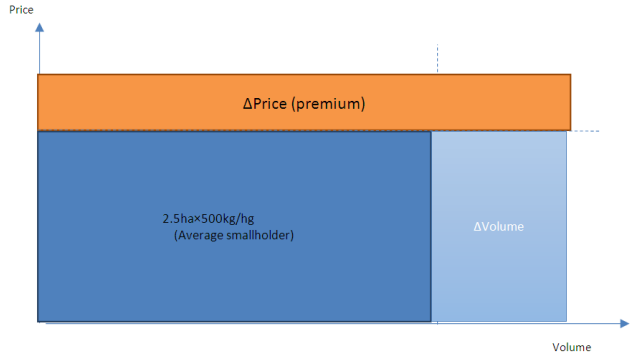


Fig.2.
Source: International Cocoa Organization (2012)

The farmers also mentioned that they earn extra income in the form of premium on every bag certified cocoa sold. For Instance they earned cedi equivalent of $3, $3, $4, $4 in 2009, 2010, 2011 and 2012 respectively.

Concluding this section, the study revealed that cocoa farmers have both positive and negative perception about the implications of certification. They perceived cocoa certification as innovation into the industry. Farmers adopted this innovation mainly because of the premium, access to inputs and perceived increase in yield. While some of the non certified farmers are buying time to see more evidence of gains before adopting the certification processes, others are learning from their certified colleagues on informal bases. The issues of extra labour and meeting stringent standards came up strongly. These issues will be revisited in the discussions.

D. Implications of cocoa certification on child labour

The farmers admitted that the certification program has given them insight into WFCL as a result of various education and training the farmers have received. This has enhanced children's attendance to school. There were no more involved in hazardous work. The farmers mentioned that before certification, their wards under 18, used to be present when agro-chemicals were being sprayed on the cocoa. Skipping school was very common. The farmers mentioned that they have reduced the involvement of their wards in hazardous activities and have assigned them with duties based on their age, ability or strength to do a particular work.

Unlike the non-certified farmers, all the certified farmers with the exception of one disabled farmer who needed support from his children, were concentrating more on giving their wards' better education rather than involving them on the farm. The children of some certified farmers were interviewed one on one to ascertain the truth or otherwise in the farmers' responses. The children ranged between the ages of 8 and 17. The age range and the number of children interviewed are illustrated in Figure 3. Most (40 .8 per cent) of the children of the certified farmers interviewed were in the range of 11 to 13.

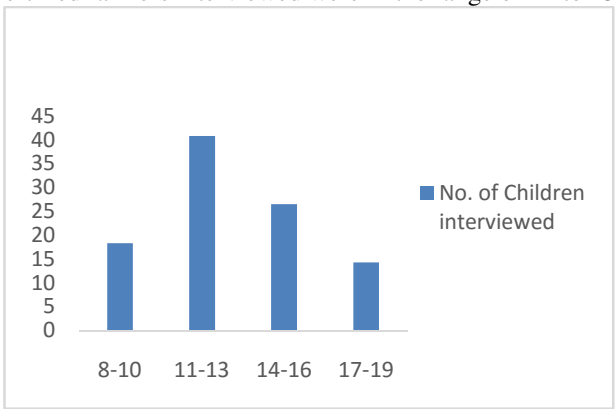


Fig.3. Distribution of Children Interviewed (%)

The researcher sought to find out whether or not their parents indeed support them in their education apart from paying their fees. This was to be sure that the certified parents were really interested in the education of their wards as claimed. The responses are illustrated in Fig. 4.

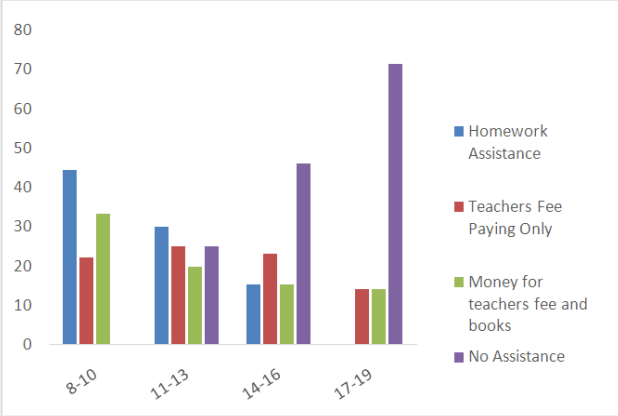


Fig.4. Distribution of Family Support to Children's Education (%)

Through the certification programme, its teachings and instructions, the farmers have realized the importance of educating their wards. Though the Government capitation grant takes care of the school fees of the children, it can be seen from Figure 4 above that, for all the age categories, there are some assistance given to the wards in the area home assignments, paying of teachers fees and purchasing of books and stationary. With regard to assisting the wards to do their homework, it observed that whilst about 45 per cent in the age range of 8-10 and 30 per cent of the children in the age range of 11-13 receive assistance, children in the age range of 17-19 on the other hand received no support from any source. This category of children do their home assignments given from school on their own. The reason was that this category of children were in higher classes such us the junior high schools compared to the children aged 13 and below who were either in the upper or lower primary. The younger ones obviously need more assistance in their homework. Also there is a perception, in rural set up that children in the age range of 17 - 19 years are adults and therefore need minimal support.

……*With the inception of the certification program the children are always in class and this has led to an improvement in individual performance as compared to previous*…….. (Interview with a teacher)

When the attendance register was cross-checked to confirm the teacher's assertion, it was realized that out of 70 days in the first term, the attendance of the children of certified farmers ranged between 61 and 70. In the second term, the children's attendance ranged from 54 to 64 out of 64 days. The teachers admitted that school attendance has improved with the introduction of certification program. The children attributed their absence from school for the few days to sickness or something else, other than farming activities. They also testified that their work load has reduced. In a dialogue with one of the farmers' children in TK, the child said that *"my father has stopped involving me in certain tasks because my parents have learnt that government has banned children from performing those tasks"*.

E. Cocoa certification increases mutual help among farmers and mobilizes adult labour to fill labour gap

Both farmers from Takyikrom and Kofigyankrom commended the improvement of the working of cooperatives since the inception of certification. In Kofigyankrom, the farmers were able to open an account in the name of the cooperative with GHC 8600. The membership in the cooperative also increased from 26 in the 2010/11 production year to 38 in the 2011/12 production year. The farmers also admitted that the cooperatives encouraged the *Nnoboa* system. This traditional method is where fellow farmers help each other to work on the farm to reduce labour cost on a rotational reciprocal basis. Sub-groups have been formed for the purposes of helping each other. The Nnoboa (sometimes called pooled labour) sub-groups have helped some farmers to expand their farms while others have taken that opportunity to manage their farms in terms of weeding, breaking pods, carting wet beans for drying and cutting mistletoes.

The nnoboa system according to the farmers helped in the quality of cocoa beans. For instance, since the groups help in breaking of the pods and carry the fermented cocoa to the drying mat at the village, the mandated six days fermented period is strictly adhered to. This has increased quality of the beans. The strict enforcement of GhC5 fine on absenteeism from nnoboa activities has helped the nnoboa system to be very active and farmers reaping its benefits such as reduction of labour cost. At TK, even though the nnoboa system is in operation it was not as vibrant as in KK. Sparse location of farms and non-enforcement of sanctions were some of the causes mentioned by farmers. The farmers in the two communities mentioned improved access to extension services and information to improve production as periodic trainings were organized by partners. Most of the farmers admitted that certification have improved the management of the cooperatives and has also strengthened nnoboa system leading to a strong cocoa labour force. With a strong labour force in place, the tendency of using child labour will diminish.

F. Cocoa Certification Leads To Reduction In Commoditization Of Child Labour

Most of the children were rather interested in helping their parents in the farming activities instead of commoditizing their labour for financial gains. Children in the age group 15 to 16 years were keen to work on the farm as long as it does not conflict with their educational activities**.**

……. *I am ready to aid my parents in every activity no matter what, so far as it does not interrupt my educational activities because without it my school materials cannot be purchased.* ……An interview with a child at TK. So he offers his services on Saturdays and Sundays on the farm as his quota to his parents in gaining financial empowerment.

Currently, the motive of most of the children of certified farmers is to willingly offer their help to parents rather than sell their labour for money. Once parents were willing and able to support their education the children were also willing to support them in cocoa farming activities that are not hazardous.

V. DISCUSSIONS

As explained in the methodology, the Multi-Level Perspective (MLP) approach distinguishes three analytical and heuristic levels to understand system innovations as interactive processes of change at different levels; the micro, meso and macro recognising their overlap. At the micro level the results would be discussed in terms of the (1) implications of certification in reducing hazardous labour and improving children social situations; its potential of mobilising adult labour to support cocoa farming, (2) the effects of certification on productivity and livelihoods. At the meso and to some extent the micro levels, the discussion will focus on (3) changing effects on organisational capacity and potential to institutionalise standards (4) Drivers of certification and Multi-stakeholder Approach as part of the innovation systems.

A. Innovation in Respect of Certification's Dealing with the Worst Forms of Child Labour

A major component of certification is the eradication of child labour from cocoa farms based on ILO convention 182; ILO Convention138 and Children's Act, 560 . The farmers in the study areas were operating within RA/SAN principle and regulations and therefore obliged to adhere to the ILO convention 182 which deals with the worst forms of child labour (WFCL) and local hazardous child labour frameworks (HAF). The reduction of children's involvement in WFCL and coupled with improved cooperation of farmers cocoa production is a reflection of micro level adoption of this innovation. Thus certification of cocoa could help eradicate child labour and ensure that cocoa production is ethically responsible and socially sustainable (Salaam-Blyther et. al., 2005; Blowfield, 2004; Clark and Gow 2011). The study found that even though child labour elimination was not one of the main motivating factors, most of the certified farmers were complying with the standards. Compliance with certification standards by cooperative members has helped the children to concentrate on their education. The parents also are now responsible and providing the academic needs of the children. The improvement in the children's school attendance and access to basic school materials are subtle ways of cocoa certification to reduce the worst forms of child labour. Two observations were however made: 1) communities have ongoing peer monitoring mechanism for child abuses to protect group certificate. This is healthy and must be encouraged. 2). The farmer group can shield colleagues who go contrary to the rules need to be sanctions. A typical example was the case of the disabled farmer mentioned earlier. The fear of incurring the displeasure of the neighbours coupled with the possibility of losing the farmer to another group as well as scaring potential members cased the group to waive the sanction. This development indicated that certification as an innovation is testing some of the cultural behaviour and attitudes and it is still within the 'protected spaces' (Geels 2005). This raises four issues for sustainability at the micro level. 1) Farmers have to be empowered to a level where they can peer monitor and apply sanctions as a group. 2) Auditing of farms alone and the use of IMS are not enough to verify that farmers are complying with the standards but should be expanded to include children and key informants. 3) Unannounced auditing is essential 4) identified child abuse cases should be linked with social service providers for remedy and monitoring. These will transit the niche (micro) level and stabilise sociotechnical level where rule-sets are built up, granted stability (Geels, 2005) to change attitudes towards the adoption of sustainable methods of production. Third party certification process if linked with existing system of child labour monitoring would be a good measure in dealing with child labour in cocoa communities.

B. Innovation in Respect of Certification Mobilizing Adult Labour

According to Owusu-Amankwah et al, (2014) *nnoboa* is a less utilized form of social capital available to farmers. Mobilizing adult labour comes with challenges. The challenges identified included of trust, lack of management of *nnoboa* groups, lack of resources to maintain the groups, lack of technical support from appropriate institutions. To ensure the effectiveness of this method of ' exchanged labour' these challenges need to be addressed. Most of these challenges were being tackled by the study groups through certification structures. The *nnoboa* system (pooled labour) was being used by the certified members more than non-certified farmers. The increased labour demands as a result of certification practices have made farmers seek for support among themselves to reduce cost of labour. It is used in many cocoa farming activities including carting of wet beans for drying which was previously performed predominantly by children. This explains the reduction of the workload of children in cocoa farming. The less cost of labour due to the utilization of nnoboa (a form of social capital) has implications on other capitals available to farmers especially human and financial capitals. Utilization of nnoboa resource means less cost of labour which is one of the main constraints on their income.

C. Innovation in Respect of Certification's Dealing With Livelihood and Occupational Health and Safety

Some of the new interventions in the cocoa sector such as Community Child Labour Monitoring System (CCLMS) were able to tackle only the social challenges such as child labour without being able to tackle the economic and environmental challenges facing the farmers. However with certification, these challenges are being tackled according to farmers. The benefits as enumerated by farmers and also observed by the researchers were of two folds, quantifiable and non-quantifiable. The quantifiable ones included high yield, increased income, access to peer support (nnoboa), access to credit and training as well as low application of agrochemicals due to farmers adoption of better farm management practices. The non- quantified benefits included awareness on effects of agrochemical on their health and improvement in school attendance. The farmers believed with this knowledge, their standard will improve in the long run. One farmer asserted that *'I used to store agrochemicals under my bed for safe keeping but I don't do that anymore*'…..

Most of the certified farmers indicated that certification has led to increase in their income through increased yield. Certification has opened a window of opportunity for farmers to overcome the many challenges facing the farmers in terms of inadequate extension services, training and access to inputs. However, less is being done to diversify the source of livelihood apart from planting economic trees that will also serve environmental purpose. It is also worth noting that apart from adopting good agricultural practices, other factors such as readily available extension services, farmers commitment, good weather conditions and timely availability of inputs were also contributing factors to increasing yield and subsequent income of cocoa farmers. Other studies seem to support the position of the farmers on livelihood improvement argument (KPMG, 2012).

Group certification can be achieved in two ways. The first is where the farmer organization is the owner of the certificate and therefore organizes certification activities independently. The second is where external body or the exporter holds the certificate and organizes the farmer for certification purposes albeit cost implications. The study focuses on the second option with the LBC, NGOs and certification bodies pre-financing certification. The pre financing involves training the farmers in good agricultural practices, managing IMS and organising auditing both internal and external. It also gave input on credit bases to the farmers as well as providing other extension services. These expended funds are deducted at source from the premium given to farmers.

It further established that the more the transacting cost of certification, the less premium the farmer gets. The IMS administrator asserted that fifty percent of the premium is paid to the farmers. These notwithstanding, farmers see the premium as one of the main incentives to entice them to certification process since it gives them extra income especially when it is paid during the offseason. The less cost of labour due to the utilization of nnoboa (a form of social capital) have implications on other capitals available to farmers especially human and financial capitals.

D. Innovation in Respect of Institutions and Organisational Dynamics

Structures and process are essential elements of analysing innovation outcomes through MLP (Geels, 2004). At organisational level, certification required that there were structures in place to deal with Internal Management Systems (IMS) and cooperative group level administration which farmers do not have the capacity to put in place due to low educational level. The role of NGO has been significant in this situation. Considering the level of competency required by SAN principles and standards, the fear was that the farmers may not have the capacity to manage themselves. This has an implication on cost of maintaining the organisations involved in certification which will affect the benefits to farmers since it is the net profit that would be shared among farmers**.** With certification standards for farming, organisations such as NGO, traders, LBCs, certification bodies, and farmer organisations influence the perceptions, decisions and actions of the farmers.

In principle, farmers are supposed to internalise rules and regulations in three stages at the micro level. The first stage comprises rules and regulations for farming and in the case of RA/SAN, there are 10 principles of farming (as shown Table 1). The second stage comprises SAN rules for organising farmer groups which include training and capacity building, risk assessment and set up as well as management of mandatory IMS. The third stage deals with rules and regulations set by the cooperative/farmer associations that regulate the behaviour of the farmers and are meant to ensure social and economic support for each other. Internalising and integrating these rules into everyday life increased farmers social obligations. As a result of numerous responsibilities that involved in the third stage, some of the activities are given less attention. This stage which is meant to strengthen social and economic networks for mutual support has been one has suffered most especially in the areas of group meetings. All the farmers indicated that more efforts are needed to make certification work.

The degree of internalisation of these standards and their sustainability depend on coherence of the organisations and the extent of satisfaction of expected needs. Guerra (2003, 50) strengthens this idea by stating that the differences between organisations depend on the degree to which rules are incorporated into their daily action, values, culture, beliefs, symbols, assumptions thus constituting an essential part of common identity. In addition, the institutional dimension of organisations must have internal consistency over time. As North (2004: 359-360) asserts "the beliefs that individual groups and societies hold which determine choices are the consequence of learning through time". In the same way, certification as a new system, may take time to consolidate and internalise the new practices through social learning and continuous improvement to build farmers organisational capacities.

E. Drivers of certification and multi-stakeholder approach

According to Geels (2009), socio technical regime of innovations could be influenced by either the 'technological landscape' or 'niches' at micro level. At the macro level the, consumers, NGOs, media and government (from the North) exerted pressure on chocolate industries to adopt third party certification to tackle socio economic needs of farmers while addressing environmental concerns (Tulane, 2010; WVI, 2011). In respond to the pressure, multinational cocoa industries are now sourcing for certified or ethical cocoa (130% increase in demand from 2010-2011, Cocoa Barometer, 2012). This has made certification a demand driven system. It is being driven by business actors such as chocolate industries and LBCs and supported by government organisations, non-governmental organizations, standard bodies and farmers who are the pivot around which certification processes and practices evolve. These stakeholders have distinctive roles which aimed at meeting a particular challenge of farmers. Among them were: support to cooperative organisational building, extension needs, entrepreneurial skills, input credit scheme and capacity building on sustainable agricultural practices. The synergy created by the

collaboration is healthy, co-creating of knowledge and experiences.

As supported by many authors, such approaches help to overcome complex social and economic problems (Leeuwis and Pyburn, 2002; Van de Kerkhof and Wieczorek, 2005). The Multi-stakeholder nature of the current system, pulling resources (financial, social, skills) requires dynamism and commitment to yield better outcomes for farmers. This is consolidating and incubating the 'niche practices at micro level where few farmers were involved. As indicated by Hermans (2011) and Van de Poel (2000), niche innovations are carried out and developed by 'small groups of pioneers 'and 'dedicated outsiders' that are marginal to the existing networks of the socio technical regime.

VI. Conclusion

The study sets out to understand certification as an innovation and its potential in reorganizing cocoa production systems in Ghana. It adopts the Multi-level perspective analysis to illustrate certification as an innovation system. It sought to understand the implications of cocoa certification in reducing WFCL, mobilising adult labour and the effects on productivity and livelihoods at micro level. Institutional and organisational dynamics of certification have also been investigated at the meso and macro levels, The study concludes with the following:

A. Farmers perceived double - side effects of cocoa certifications:

Third party certification as a key innovation in the cocoa production system of Ghana has both advantages and disadvantages but the former far outstrips the latter . Among the benefits derived from third party certification are: capacity building, training in good agricultural practices, provision of guidelines for agrochemicals applications and early detection of cocoa diseases and pests. It has improved business consciousness of the certified farmers and their productivity levels have increased. The main disadvantage mentioned by farmers was that the standards were too many and require a lot of efforts to comply.

B. Cocoa certification reduced child labour and strengthened mobilization of adult labour:

The study found that if third party certification process is linked with existing system of CCLM it has the prospect of dealing with child labour in cocoa communities. Even though child labour elimination was not one of the main motivating factors of certification, as most of the certified farmers comply with the standards, involvement of children in hazardous cocoa farming activities is reduced thereby offering the children the opportunity. Children's ability to fully attend school and , get access to basic school materials are some of the potentials of cocoa certification to reduce child labour to the minimum. Certification also has helped in mobilizing adult labour through the nnoboa system to replace the services of school children. The *nnoboa* system was being used extensively by the certified members more than non-certified farmers as a strategy to reduce high cost of labour..

C. Certification increased cocoa productivity and enhanced livelihood Systems:

Through the adoption of GAP under certification, the farmers are reaping some benefits including yield increase, health consciousness and social mutual support. Other benefits such as pest and crop management as well as reduction in the use of agrochemicals. In spite of these benefits, it was observed that increased yield, and premium are the main motivating factors for farmers involvement in certification. Therefore main motivation for farmers to participate in certification initiatives is economic rather than social or environmental even though they are all relevant.

D. Effects of third party cocoa certification process in reorganizing organisational and institutional relationships:

Cocoa certification is changing or reorganizing organisational and institutional relationships both vertically and horizontally. Chocolate industries in the process of mobilising stakeholders to turn to the production of certified cocoa which was in response to external pressure, a multi-stakeholder collaboration has emerged as a social innovation. Certification has brought new rules and guidelines (institutions) which are affecting how organisations involved in certification will progress. The level of competency required by standards bodies is beyond the capacity of individual farmers and the farmer groups as well and therefore would require external support in the medium to long term. Certification as a new system may take some time to consolidate the internalisation of new practices; foster social learning and build farmers capacities to enable them handle institutional and management issues involved in the certification process.

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