

Mobile Phone Revolution in Ghana's Cocoa Industry¹

Kwaku Ofofu-Asare, PhD

University of Westminster

360B Brownhill Road

London, SE6 1AY, United Kingdom

E-mail: kwakuoa@hotmail.com, Phone: +44 (0)7984063954 (8/04/11)

Abstract

This paper focused on the use of mobile phone by cocoa farmers in the four leading cocoa producing regions in Ghana-Western, Ashanti, Brong Ahafo and Eastern. The study examined the use of mobile phones by cocoa farmers and benefits associated with their usage. The sample of study was 400 cocoa farmers randomly chosen from the study area. The qualitative method was used in collecting data because of the low educational background of respondents. It was found that a high proportion of cocoa farmers (61%) owned mobile phones which had contributed to an improvement in communication in cocoa growing communities and transformed cocoa farmers' mode of production. The mobile phone was used by cocoa farmers to meet economic and social needs like arranging for inputs, sale of produce, sharing information and keeping in touch with friends and relations. As a result, cocoa farmers have been able to reduce their transport cost.

Key word: Mobile phone, economic and social needs, sharing information, transport cost.

1. INTRODUCTION

The first mobile phone call was made by Dr. Martin Cooper of Motorola to his rival Dr. Joel Engle of AT&T Bell Lab on 3 April 1973 in New York. However since 1979 when mobile or cellular phone was commercially launched in Japan it has become an integral part of human life globally. According to the International Telecommunications Union (ITU), a United Nation (UN) agency, there were about 4.1 billion mobile phone subscribers in the world in 2009, an increase of one billion since 2002, with developing nations considered as one of the fastest-growing markets (Beaumont, 2009). However, by the end of February 2010, the global subscribers of mobile phones had increased to 4.6 billion, 67% of the global population, with developing countries having 57% of their total population subscribing to mobile phones, according to a UN report (<http://www.mobilemarketingwatch.com>). In Africa due to lack of basic infrastructure like good roads, electricity and landlines -less than 3 landlines per 100 people, there was a dramatic increase of 49% in mobile phones subscriptions between 2002 and 2007 compared to 17% increase per year in Europe.

In Sub-Sahara Africa the number of mobile phones is now ten times more than the available landlines (ITU, 2008; Ramachandran, 2008; World Bank, 2009; Aker, 2009). In many African nations, mobile phones are used for socio-economic activities like banking, sending text messages on latest prices to clients, arranging delivery of products to distant towns and villages, relating to friends and family members, and arranging funerals among others. In sum, irrespective of the infrastructural limitations, mobile phones have made it possible for Africans to transact business, relate to friends and relations regularly, share information at relatively low cost and stay in touch with the rest of the world. According to Aker "mobile phones allow consumers, traders and farmers to search for market information when, where and how they want" (Aker, 2009, p.12). Economic evidence also suggests that mobile phones can act as an influential instrument for economic development in the poorest countries in the world (ibid). In Ghana, the first mobile phone service was provided by Mobitel now Millicom(Tigo) in 1992 and by the end of the year 19,000 Ghanaians owned mobile phones. However, the number increased to 17.2 million representing 74.2% of the entire Ghanaian population by the end of December 2010, (<http://www.nca.org.gh>). This figure includes smallholder cocoa farmers in the cocoa growing communities of Ghana who now own mobile phones.

Cocoa is the mainstay of the economy of Ghana contributing an average of 32% and 3.7% of the country's export earnings and gross domestic product (GDP) respectively, between 2000 and 2009. In terms of value, cocoa beans and products earned Ghana US\$6.3 billion during the stated period (Ghana Statistical Services, 2009). It is the main source of livelihood for between 720,000 and 1million estimated smallholder cocoa farmers in Ghana with 500,000 cocoa farm units and a cultivated area of 1.6 million hectares. According to Ghana Cocoa Board (COCOBOD) an estimated number of 6 million people depend on cocoa farmers for their livelihood because each cocoa farmer's household is estimated to have 6 people (Barrientos *et al* 2007; Ghana Cocoa Board, 2009).

¹ Part of my thesis study submitted for a PhD degree at the University of Westminster, London.

After liberalising its economy in 1983 and the cocoa sector in 1993, Ghana's cocoa production increased from 312,123 metric tonnes in 1992/93 to 632,000 in 2009/10 metric tonnes, with a record output of 740,458 metric tonnes produced in 2005/06. The increase in output is attributable to the annual increase of the cocoa producer price which resulted in the cocoa farmer's share of the free on board (fob) price increasing from 53% to about 73% during the same period. Other intervening factors which enhanced production were government programmes like the mass spraying against insect pests and diseases free of charge under the Cocoa Diseases and Pests Control (CODAPEC), implemented in 2001 and the Hi-tech new technology of production which encouraged the use of fertilizers and planting of hybrid cocoa varieties implemented in 2003. The internal marketing of cocoa was also liberalised as part of the cocoa sector reforms and Produce Buying Company (PBC) a subsidiary of COCOBOD, lost its monopsony which gave the cocoa farmers options to market their produce. The LBCs also provided incentives like loans and inputs to the farmers. At the time of the study (2009), 26 private licensed buying companies (LBCs) were operating in Ghana with COCOBOD playing a regulatory role.

The deregulation policy implemented as part of the 1983 economic reforms led to multinational mobile phone companies establishing subsidiaries in Ghana which contributed to the increase in the number of subscribers and resulted in improvement in communications in the country in general. The major advantage of using a mobile phone is that it allows the user the freedom to communicate with people from almost all locations unfettered by any wire or cable. Though we now live in a golden age of mobile phones, there is a paucity of research work on the impact of mobile phones on the economic activities of people or human kind in the literature (Aker, 2009). Some studies in recent times have however been made on their impact on farmers. In her study of grain farmers in Niger, Aker (2009) found that the use of mobile phones led to the reduction of grain price dispersion by a minimum of 10%, and a 12% reduction in intra-annual variation of grain prices between 2001 and 2006. Jensen (2007) also found a significant reduction in price dispersion and a reduction in waste in his study of fish markets in India while Muto and Yamano (2009) who studied the impact of mobile phones on farmers' participation in the market in Uganda, found a correlation in the increase of the banana farmers' market participation and mobile phone coverage. However there is no known study in the literature on the impact of mobile phones on cocoa farmers. The study therefore aimed to find out the impact of mobile phones on the socio-economic activities of smallholder cocoa farmers in particular and communication in the cocoa growing communities in Western, Ashanti, Brong Ahafo and Eastern, the four leading cocoa producing regions in Ghana.

2. METHODOLOGY

2.1 Study area: The study was conducted in Western, Ashanti, Brong Ahafo and Eastern regions out of the six cocoa regions in the country. The 4 regions were chosen because they are the leading regional cocoa producers as stated earlier. Though Ghana Cocoa Board (COCOBOD) has divided the cocoa regions into Eastern, Ashanti, Brong, Western North, Western South, Central and Volta for administrative convenience in the study, Western was regarded as one cocoa region due to lack of time and resources. Four (4) districts each were selected from Eastern, Ashanti and Brong Ahafo and 9 from Western by simple random sampling. Eastern has 10 cocoa districts, Ashanti 15, Brong Ahafo 9 and Western 25. Nine districts were chosen from Western because apart from having the greatest number of cocoa districts in the country it also produces an average of more than 56%² of Ghana's output. Eastern region was also selected because it is the cradle of Ghana's cocoa industry.

2.2 Sampling frame: A total of 400 cocoa farmers were interviewed using questionnaire (i.e. structured interview), 100 respondents in each region. The respondents were categorised into two: "rural town smallholder cocoa farmers" and "rural village/hamlet smallholder cocoa farmers". Cocoa farmers who were geographically closer to the regional or district municipal capitals or towns with better access roads (i.e. tarred or feeder) linking them to these capitals or towns constituted the "rural town smallholder cocoa farmers" while those geographically further away and with poor feeder roads or lacking accessible roads were the "rural village/hamlet smallholder cocoa farmers". This was to find out whether the farmer's access to communication facilities in general and mobile phone in particular depended on his/her geographical location. Out of the 25 respondents allocated to each district 12 were allotted to "rural villages/hamlets" and 13 to "rural towns". Focus group discussions (FGDs) were conducted to complement the structured interviews and about 300 respondents took part. A total of 27 FGDs were held during the study, 13 in "rural towns" and 14 in "rural villages/hamlets".

² This average figure was calculated by the author based on 2006/07 and 2007/08 figures, the two cocoa seasons preceding the study. However, according to COCOBOD's record Western Region produces about 60% of the national output.

They were held at convenient places like a house or under big trees with little or no interruptions. The qualitative research method was mainly used for data collection because most of the cocoa farmers were less educated or had no formal education (Ogunlye and Oladeji, 2007; Osei-Akom, 1999). The interviews and discussions were conducted in their own dialect and gave them the opportunity to fully express themselves. The other advantage was that the face-to-face interview enabled “social cues” like body language, voice and intonation to be observed (Opdenaker, 2006, Badu-Addo, 2010), which were additional information gained in addition to whatever verbal responses the respondents gave.

2.3 Sampling technique: Purposive sampling was used in selecting the cocoa regions, while the districts and the communities were selected by using simple random sampling.

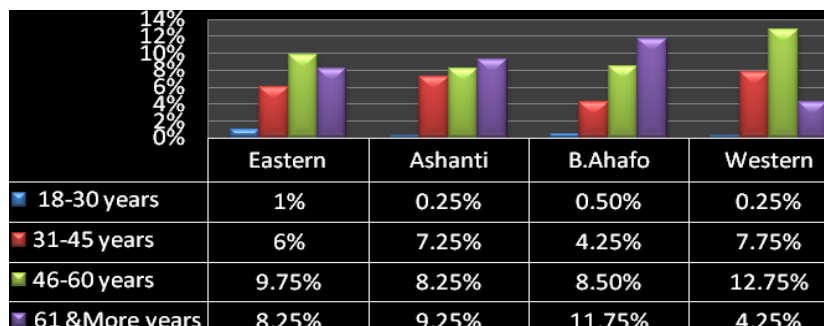
2.4 Data collected: Data on the demographic, socio-economic activities and personal characteristics of the cocoa farmers were collected.

2.5 Analysis: In analysing the data the study incorporated some aspects of quantitative technique by coding and highlighting the views of respondents in frequencies and percentages using the Statistical Package for Social Sciences (SPSS) software (17). This is because it is the closer way to currently perform a real data analysis using a quantitative technique (Bryman, 2009). In addition, by marrying the qualitative and quantitative approaches together enhanced the analysis.

3. RESULTS AND DISCUSSION

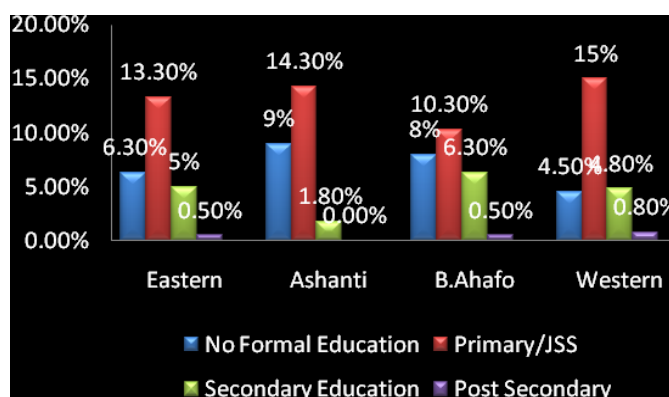
The findings show that 82.5% of the respondents were male and 17.5% female, which is a reflection of the fact that cocoa farm ownership in Ghana is dominated by male farmers. Many of the respondents were men because traditionally men often secured land for cocoa farming and used their wives and children as additional labour. The women cocoa farm owners either had their farms through inheritance (Nyateng, 1995; Barrientos *et al.*, 2008), or given to them by their husbands as a form of reward for having assisted them on their farms but some bought their own land to cultivate the farms. With regards to their ages, 39.25% of the respondents were between 46 to 60 years while 33.5% were above 60 years. The rest fell within the age brackets of 31-45 years (25.25%) and 18-30 (2%). By cocoa region, Brong Ahafo had the highest proportion of older farmers (11.75% over 60 years), followed by Western which had 12.75% between 46-60 years, while more young farmers (1% between 18-30 years) were found in Eastern region (figure1).

Figure1: Regional Age Distribution of Respondents



This means that the youth are shying away from cocoa farming which is considered a major problem to the sustainability of the cocoa industry in Ghana. This problem could be compounded with oil found in Western region and Ghana becoming an oil producing country because labour will drift to these oil companies which turn to pay higher wages. When that happens it could affect Ghana’s cocoa output especially Western region which produces about 60% of Ghana’s output as noted earlier.

Figure 2 Regional: Education Level of Respondents



Out of the 400 respondents, 66% had been engaged in cocoa farming for more than 16 years, 9% between 11-15 years, 16% between 6-10 years while 9% had been farming for 5 years or less. When the educational levels of the respondents were examined, it was found that a majority of the farmers had primary and junior secondary education (52.8%). Out of this, the highest number was in Western region (15%) and the lowest (10.3%) in Brong Ahafo. The proportion of respondents with secondary education was 17.8% and those with post secondary education was 1.8%. Brong Ahafo had the highest number of farmers (6.3%) with secondary education. However, there were respondents with no formal education (27.8%) of which Ashanti region had the largest number (9%) and Western region the lowest (4.5%) (figure 2). The implication of this is that majority of cocoa farmers would not be predisposed to easily accept innovations or new development introduced by Cocoa Research Institute of Ghana (CRIG) a subsidiary of COCOBOD to enhance productivity because of their poor educational background.

For instance, 30.5% had a combination of the hybrid and the local “amazonia” and “amelonado”³ older cocoa varieties while 7.3% of the farmers still planted only the local amazonia and amelonado. The hybrid yields more and thus gives the cocoa farmer a greater output and higher income than the amelonado. It also has a shorter maturity period, about 3 years and able to resist diseases more than the local amelonado which has between 5 to 7 years maturity period. However, 62.3% had planted hybrid cocoa variety. Additionally, though technology for producing goods is now known every where because it is put on the internet, most of the farmers would not be able to access them because of poor education. The farm sizes of respondents ranged from less than 5 acres to more than 16 acres. The majority (33.3%) had total farm sizes of more than 16 acres, followed by those who had between 6 to 10 acres while 26.8% had farm sizes of 5 acres or less. Table 1 below summarises the farm sizes of respondents.

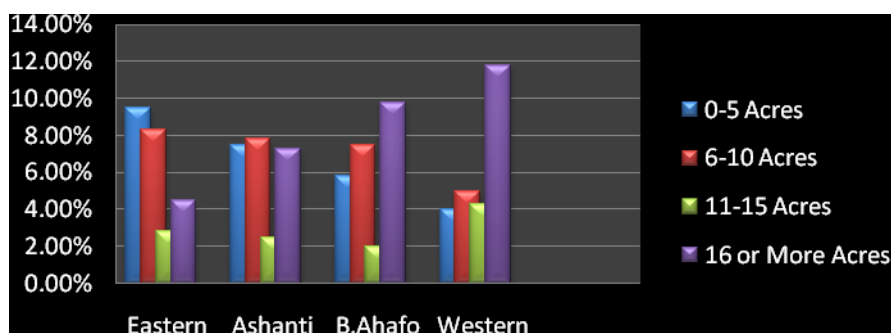
Table 1 Farms Sizes of Respondents

	0-5acres	6-10acres	11-15acres	16&more acres	Total
Eastern	38	33	11	18	100
Ashanti	30	31	10	29	100
B.Ahafo	23	30	8	39	100
Western	16	20	17	47	100
Total	107(26.8%)	114(28.5%)	46 (11.5%)	133 (33.3%)	400 (100%)

Source: Author

At the regional level, Western region had the largest proportion of respondents (11.8%) with the largest farms (16 or more acres). Eight of the respondents in the region had farms with sizes between 21 and 80 acres with one respondent owning a total of 305 acres and could be classified as large cocoa farmers. Brong Ahafo region followed with 9.8%. Three participants in the region had farms totalling between 24 to 67 acres while one had a total of 130 acres. Eastern region had more of the typical smallholder farmers with five or less acres (9.5%) and 8.3% with 6-10 acres (figure 3). However, it is worth stating that most respondents did not have a large stretch of farm at one place but had different farms at different locations and estimated the sizes of their farms by adding up the different areas under cultivation. The majority of the respondents cultivated family lands⁴ (64.5%). This was followed by a proportion of 12.3% each who either bought or got the land by other means like the “abunu” system⁵, while 11% rented the land.

Figure 3 Regional Level: Size of farms of Respondents



³ Amelonado and Amazonia varieties are still prominent, forming about 30% and 40% respectively of cocoa tree stock in Ghana (COCOBOD Strategy II Document, 2009, p.4).

⁴ In Ghana Chiefs are custodians of land but clans own lands and families constitute clans therefore members of families have the right to cultivate clan lands free of charge.

⁵ A system where by a farmer shares the farm equally with the land owner when the crops mature.

It was found that 43% of the respondents applied fertilizer on their farms while 57% did not. Western region had the largest proportion of respondents (19.5%) who used fertilizer while Eastern had lowest number (7%) (Table2).

Table 2. Use of Fertilizer by Respondents at Regional Level

Regional	Yes	No	Total
Eastern	7%	18%	25%
Ashanti	9%	16%	25%
Brong Ahafo	7.5%	17.5%	25%
Western	19.5%	5.5%	25%
Total	43%	57%	100%

Table 3 Where Respondents Obtained Fertilizer

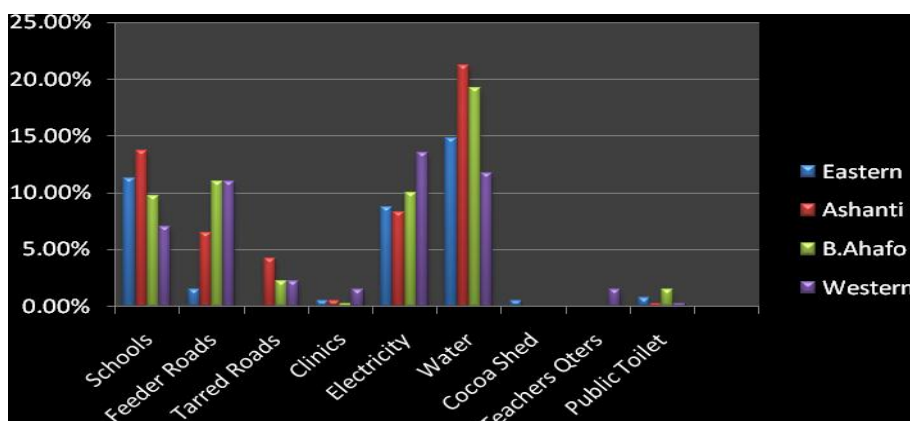
Input Store	LBCs	Open Market	Cocoa Abrabopa	Govt. Supply	Total
38.1%	13.7%	42.3%	4.8%	1.2%	100%

Source: Author

Table 3 summarises the sources where respondents obtained fertilizers. A greater number (42.3%) bought fertilizers on the open market, 38.1% from the input store, and 13.7% from the LBCs. Some of the respondents (4.8%) obtained them from Cocoa Abrabopa (a form of farmers’ co-operative organization), while a small number was supplied free of charge by government (1.2%). Respondents used other inputs like insecticides and pesticides recommended by CRIG. A greater number (66%) of the cocoa farmers used Confidor, followed by 56.25% who used Akate Master with 7% using Actara to spray their farms against Capsi (Akate) which 95.5% mentioned as the commonest insect pest afflicting their farms. The choice of a recommended insecticide or pesticide used by the cocoa farmer depended on which one he/she found efficacious in his/her circumstance. Respondents sprayed their farms to complement the mass spraying done by government free of charge to fight insect pests and other diseases to enhance production. A reasonable number (21.5%) of cocoa farmers also sprayed against bathycoella (Atee) while 24.75% sprayed against black pod disease.

However, it was found that the input stores and markets where respondents could obtain the inputs were all in the district capitals or towns but majority of them did not live there but lived in communities where infrastructure and basic amenities especially roads were lacking or were in bad shape. Of the 400 respondents, only 8.75% lived in communities which had tarred roads while 30% lived in communities with feeder roads (i.e. 38.75% of them lived in rural towns) while the greater majority (61.25%) lived in communities with poor road infrastructure (rural villages/hamlets). Some cocoa farmers lived on their farms.

Figure 4 Regional: Provision of Roads and Basic Amenities



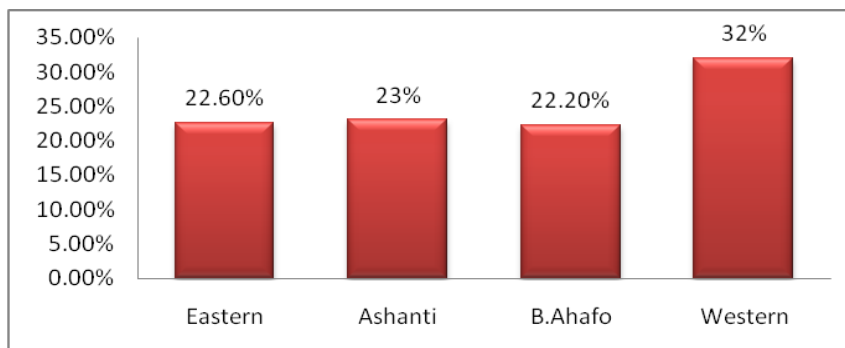
It could be argued that roads have significant impacts on rural cocoa communities, because they make these communities accessible particularly during the rainy season and improve produce evacuation. With regards to the general provision of basic amenities in the study area, Ashanti had a greater number of the respondents who had access to tarred roads (4.24%), water (21.25%) and schools (13.75%). An equal number of participants (11%) in Western and Brong Ahafo regions had access to feeder roads.

In general, 67% of the respondents had access to water, 33.75% electricity, and 12.75% clinics/hospitals, while 41.75% had schools in their communities for their children. Figure 4 sheds light on the roads and other basic amenities in the 4 cocoa regions. Cocoa farmers therefore desired to have access to these basic amenities especially good roads to link their communities to the nearest trunk road to enable them gain access to markets to sell their produce and buy inputs for their farming activities (Barrientos *et al.*, 2008), since the lack of easy access to markets made them vulnerable to exploitation by the few traders who went to their villages/hamlets. The 30.75% who lived in rural towns and had some of these amenities were also concerned about their rehabilitation since most of them were in deplorable conditions.

3.1 The Use of Mobile Phones by Cocoa Farmers

As a result of the poor nature of the roads, cocoa farmers incurred higher transport cost and to address this problem, respondents said they relied on their mobile phones and other communication facilities in their communities to meet their socio-economic needs. The mobile phone has thus transformed the rural cocoa farmer in Ghana into more of a “city businessman”. The survey found that the use of mobile phones enabled the farmer to reduce his/her transport cost, improve his/her communication with the outside world and save man hours of travelling which were now spent on the farm. In effect, the opportunity cost incurred by the time spent travelling on the road was now used productively (Aker, 2009). A high proportion of cocoa farmers (61%) owned mobile phones but 39% did not. The 61%, who owned one, said they used it for “business activities” especially to arrange for inputs from the open market or input store and to contact the purchasing clerks (PCs) when they wanted to sell their cocoa beans. Even the 39% who did not personally own one said, at least a member of their households had one (e.g. spouse or child). It was also found that owning a mobile phone did not depend on the cocoa farmer’s geographical location as even some in the remotest hamlets who lived on their farms had one. Out of the 61% of the respondents who owned mobile phones 53% were male while 8% were female which also reflects the male dominance of cocoa farming in Ghana. On regional basis, Western region had the highest number of farmers (32%) who owned mobile phones, followed by Ashanti with 23% with Brong Ahafo having the least number (22.2%) (figure 5).

Figure 5 Regional: Respondents who Owned Mobile Phones



During the FGDs participants said the use of mobile phones had changed the dynamics of their cocoa farming business especially in contacting people, selling their cocoa, arranging for inputs, loans, funerals and staying in touch with their children in schools, towns and cities. Most of them commented on the reduction in their transport cost which complemented what was said by respondents during the structured interviews.

One focus group participant said:

I used to go to the town at least four times in a season looking for inputs which cost me 200,000 cedis (50,000 cedis or \$5.4⁶, per trip) but now all I do is to buy about 10,000 cedis (\$1.1) worth of phone units for my mobile, and then make a call to find out when I could get the inputs. Sometimes the sellers also called when they got the inputs. Big savings on transport cost.

Another also said:

Now we share information among ourselves at relatively low cost. We are behaving like the city businessman or the educated elite, you know. Additionally, participants said they used the mobile phones to inform neighbours and PCs in their communities when their cocoa beans got stolen to be on the look out for the thieves, and to also call for assistance whenever they encountered problems like snake bites and fire outbreaks on their farms.

⁶ Using \$1=9,300 cedis the exchange rate at the time of the study (2009).

A participant said:

If we had mobile phones in 1983, we would have been able to prevent most of the fire outbreaks which destroyed our cocoa farms⁷ because at that time when you detected a fire outbreak you had to run from the farm to the village to mobilise people to assist you but now you just make a phone call to people at home or on their farms and they would come rushing to your aid.

One participant who had a bandage on his right foot said:

But for my mobile phone which I used to call for assistance when I had this snake bite on my farm last week, I would be dead and would not be standing here talking to you. We cocoa farmers therefore find the mobile phone very useful.

Cocoa farmers therefore use mobile phones to mobilise assistance during fire outbreaks in the absence of fire service equipment and for medical assistance in the absence of the ambulance.

Figure 6: A Cocoa Farmer Answering a Call on his Mobile Phone on his farm



Source: Author 18/03/09

The Road to the Cocoa Farmer's Hamlet (18/03/09)

Figure 6 shows a cocoa farmer answering a phone call on his mobile phone on his farm. He was one of the respondents in a rural village/hamlet who lived on his farm but said because of his mobile phone he was in constant touch with his colleague farmers and the rest of the world. Figure 7 below also shows cocoa farmers in rural town (picture 1), hamlet (picture 2) and village (picture 3) using their mobile phones to transact business and to meet other social needs.

Figure 7: Farmers Using Mobile Phones in Rural Town, Hamlet and Village



22/03/09 (1)

23/03/09 (2)

20/03/09 (3)

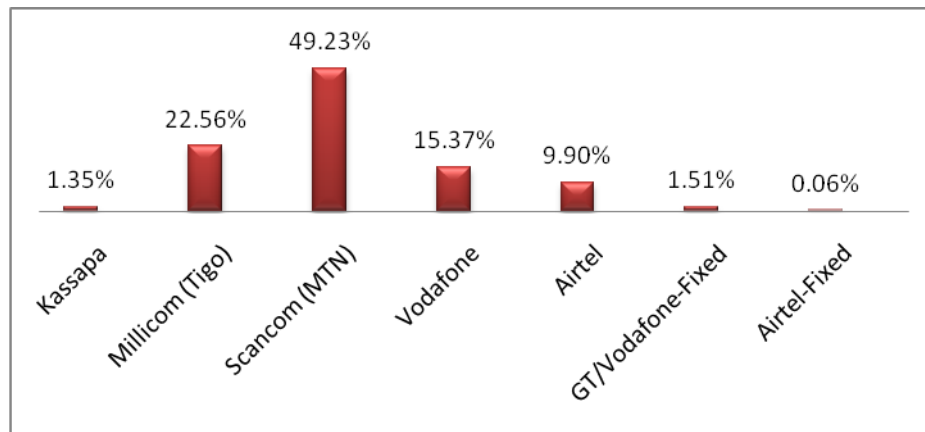
Source: Author

The survey also found private communication “centres” or “Space to Space” as they were commonly referred to, in most of the farming communities, both in the rural towns and rural villages. The facilities they used at the centre were a table, an umbrella and a telephone handset or mobile phone. The mobile phone was also used for commercial purposes. Cocoa farmers therefore, had access to commercial telephones and used them when the need arose, 51% lived in such communities while 49% lived in the rural hamlet which did not have this facility. However, the main challenge to the use of mobile phones in cocoa communities which the study found was poor reception at certain areas. At some of the villages respondents said the reception was only clear at some specific locations and not in their homes so those locations were where they made and received calls. To overcome this problem, some of the mobile phone companies were erecting their mast in the rural areas. However, the health and safety of the cocoa farmers or rural dwellers had not been given the top most priority by some of these companies in the sighting of their telephone masts.

⁷ Ghana experienced an unprecedented drought and fire outbreaks which destroyed many cocoa farms in 1983.

For instance, some the masts were found in the centre of villages and towns, hence the concern is that residents could be afflicted with cancer as a result of the radiations emanating from the masts. All the cocoa farming communities also lacked internet facilities but most of the respondents relied on the radio as their main source of information, for instance, 90% said they relied on radio to monitor the producer price while 10% relied on television for that. The deregulation policy implemented by Ghana led to five multinational mobile operators: Zain now Airtel, Vodafone, Scancom (MTN), Millicom (Tigo) and Kasapa establishing subsidiaries in the country. This enhanced cocoa farmers' access to the use of mobile phones.

Figure 8: Market Shares of the Mobile Phone Companies



Source: Ghana National Communication Authority, 2010

Figure 8 above shows the market shares of the mobile companies. MTN has the largest market share 49.23%, followed by Tigo with 22.58% while Kassapa has the least with 1.35%. Cocoa farmers never had access to telephone facilities before the reforms when only Ghana Telecom (GT) had monopoly in the country. Ghana Telecom was bought by Vodafone when it acquired 70% shares in July 2008 with Ghana government maintaining 30%.

4. CONCLUSION

The use of mobile phone has contributed to the enhancement of communication in cocoa growing communities in Ghana which until recently were incommunicado due to the lack of communication facilities or devices there. The mobile phones were used by the rural cocoa farmers in Ghana to meet their economic and social needs in terms of arranging for inputs, sale of produce and staying in constant touch with friends and relations both home and abroad. As a result, the mobile phone has now become an integral part of the rural cocoa farmer's life and enabled him/her to reduced his/her transportation cost and enhanced his/her profit. Cocoa farmers in Ghana now easily share information among themselves at relatively low cost and constantly stay in touch with the rest of the world. COCOBOD and other stakeholder could therefore take advantage of the fact that majority of cocoa farmers in Ghana now use mobile phones to disseminate information to them especially innovations by CRIG, inform them of the time of the mass spraying so they could prepare their farms for the sprayers and caution farmers whenever there is an outbreak of any cocoa disease to forestall epidemics. For instance, cocoa extension officers can use mobile phones to relay messages to farmers and to have feedback from them.

In effect, the mobile technology can be used to build farm management capacity through access to information and services. All these can be done through text and voice messages. Though the majority of the cocoa farmers are illiterates, the messages could be sent to the few literate ones who would then share with their colleagues. The literate ones could be trained for these purposes. In addition, school children or educated family members of illiterate farmers could read and translate these messages to their parents. One could thus argue that mobile phones could be used by the government and COCOBOD to enhance the cocoa supply chain in Ghana. With the great innovation in mobile phones, for instance, the new 4G mobile device with internet access which could be much faster than home or office broadband connections which also makes it easier to watch video contents on phones, literate cocoa farmers who lack internet connections in their communities may be able to surf the internet on their mobile phones. The mobile phones companies should therefore be provided the needed assistance by all stakeholders to improve upon the poor reception in some cocoa growing communities in Ghana to enable cocoa farmers take full advantage of the device.

Though mobile phones have enhanced communication and economic activities in developing countries, it is however pertinent for their governments to ensure the health and safety of their people with regards to the location of telephone masts since they can be hotspots for cancer and could compound the already acute poor health problems in these countries. Mobile phones are however, not answers to the lack of basic social amenities in cocoa growing areas therefore all stakeholders-governments, multinational cocoa companies, international organisations and donor nations should give priority to the provision of these facilities in cocoa growing communities to attract the youth to the occupation and address the problem of sustainability considering the fact that the majority of cocoa farmers are aging. Additionally, provision of basic amenities would attract investment especially foreign direct investment (FDI) and will open up cocoa growing areas.

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