# Investigations to Deploy e-Services for Cocoa Fair-trade Farmers in Africa

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*Abstract*— **This paper focuses on the possibility of deploying e-service for fair trade cocoa producers in Africa in order to reach international market audiences of buyers and consumers. We have used a qualitative research methodology to gather information from 110 fair-trade farmers from Nigeria and Ghana. We found that although Africa has an important growing rate of new mobile phone subscribers, e-service could still be difficult to be deployed for fair-trade farmers in Nigeria and Ghana without proxies who would help them to be connected.**

*Keywords-Information Technology; Poverty Alleviation; Connection; Mobile Phones; E-service*

## I. INTRODUCTION

In 1998, only very few people in Sub-Saharan Africa had access to computers and telephones [1]. However, mobile phone users in Africa have experienced a fundamental growth. This growth is concentrated in the urban cities. There has also been a phenomenal growth in the number of computer users. From 2007-2011, it is assumed that a quarter of people in the developing countries were online [2]. There is still some increase in mobile phones usage in Africa [3]. In Africa, mobile phone users use a lot their phone for financial reasons in addition to simply making phone calls [7]. What is still lacking in Africa is broadband access capable of handling much higher volumes of traffic than what is generated by voice services. This type of network infrastructure is traditionally underdeveloped in Africa. The lack of suitable infrastructure has become a significant problem. In Africa, it is not uncommon to see a huge amount of people live mostly in the rural areas and these people living outside the urban towns and cites have not made telephone calls and do not have access to telephony [6]. Recent development concerns undersea fiber optics cable connecting Africa to the world communication networks [4]. Still, one may wonder if cocoa producers mostly dominated by small-scale farmers benefit from this increased access. More precisely, we have studied if fair-trade farmers from Nigeria and Ghana can easily have access to e-services. Do they also experience the digital divide, which underlines disparities in the aggregate ownership of personal computers, access to broadband, telephone usage across demographic settlements intra and inter countries [5].

The following Figure 1 depicts the level of connection and access penetration in Africa compared to the rest of the world, according to [9].
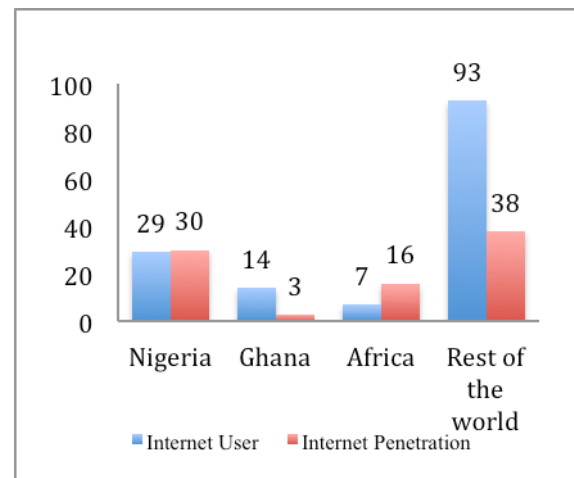


Figure 1. Acces Penetration and Users in Africa [9]

From our perspective, connection in Sub-Saharan Africa is a paradigm shift in urban areas in that, it is not only a medium for dissemination and transmission of information, it is also a social arena for people to exchange ideas (Social Media), a market place, and above all a catalyst in integrating Sub-Sahara Africa to the global exchange system.

This paper investigates the possibility of deploying e-services to the rural fair trade farmers in Nigeria and Ghana. In Section 2, we present our research methodology, which explains how data was collected and analyzed as well as methods used. Section 3 discusses the challenges to e-service in rural cocoa farming Communities in Africa. In Section 4, we conclude and mention our future work.

## II. RESEARCH METHODOLOGY

We first present the study area in Nigerian and then the study area in Ghana.

### A. Nigeria Study Area

The study was carried out in Oshogbo, South Western part of Nigeria. This geographic zone was selected due to the high density of cocoa producers in this region. The proximity of this region to Lagos, which is the commercial hub of Nigeria, was another reason for the choice.

The Nigeria cocoa board was dissolved in 1986 and replaced with cocoa association of Nigeria and that was the beginning of complete deregulation in Nigeria. Respondents from seven villages around the Oshogbo were picked. A total of 37 cocoa producers were sampled randomly from seven

villages. They were interviewed using structured questionnaires and they were mainly rural farmers, mainly small scale or family oriented small farmers.

Our concerned was to know if these farmers had access to the Web. We asked if they had mobile phones connected to the Web, if they were connected to any social media or if they had a Web site or Web page for their farm.

We wanted to know if these farmers could easily have access to e-services designed for them.

In urban areas in Nigeria, access to the Web, though it is still very slow, has permeated the society compared to the rural areas where 80% of cocoa farmers live. Nigeria cocoa export has experienced a tremendous growth over the years, ranging from a mere £215.2m in 2006 to a whopping $900.2m in 2012 [8].

Figure 2 below shows that most cocoa producers in Nigeria are still very much backward in having access to mobile phones and none of them had Internet access or a Web site or page.
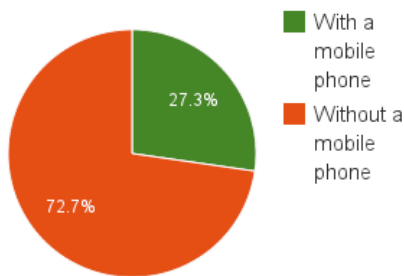


Figure 2. Farmers with and without a mobile phone subscription
Source: from our own fieldwork

*B. Ghana Study Area*

Unlike in Nigeria, Ghana main export is cocoa and Ghana's cocoa business is still very much partially deregulated. Ghana cocoa board, in short (COCOBOD), is still very much on the limelight in cocoa business in Ghana.

This study was conducted in the southern part of Ghana, to be precise in Kumasi rural areas of Obogu1 and Obogu2, Perminase - Bomfa and Odubi. A total of 75 respondents were selected based on densities of people in this locality, as cocoa farmers, and as certified cocoa farmers to two labels.

One important reason for the choice of this study is the fact that Kumasi is the highest region where cocoa is produced in Ghana with about 56% of cocoa produced.

A total of 75 respondents were interviewed using structured questionnaires and the application of focus group. The respondents were mainly from the rural areas randomly selected from five villages mainly fair-trade farmers and UTZ [13] certified farmers. Fair-trade is by definition a labeling organization established to help farmers from the

South adequate access to fair market, by meeting production standards to strengthen their economic positions, product sustainability, and to alleviate them from poverty. UTZ Kapeh means "Good Coffee" in Mayan language in Mexico. UTZ certified famers are farmers certified by UTZ organization as standard for cocoa, coffee and tea production with responsible and sustainable production practices that would ultimately lead to poverty alleviation, quality and responsible production process.
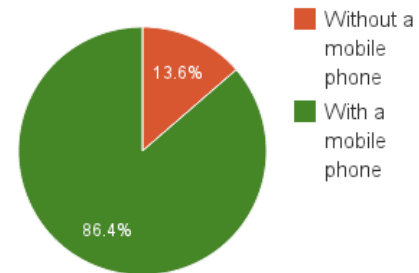


Figure 3. Farmers with and without a mobile phone subscription
Source: from our own fieldwork

Figure 3 above shows that a higher number of farmers in Ghana have mobile phone subscriptions compared to Nigeria but none of them have Internet access or a Web site for their farm. 99.9% of them had no clue about what is a Web site by the way.

### III. CHALLENGES TO DEPLOY e-SERVICE IN RURAL COCOA FARMING COMMUNITIES IN AFRICA

Africa has only 7.0% presence online and 15.6% penetration on average [9]. Thus, it is not shocking to find in the previous sections that online access has not taken deep root in Africa, with the exception of South Africa. However, there are more challenges faced by most African countries that still put them away from realizing robust information technology sector.

According to International Telecommunication Union (ITU), "the estimates that the world broadband prices is $77 while the African average is $206 per 100 kilobit per month and also the limited fixed lines in sub-Sahara Africa are problematic as well, increased coverage and lower cost depend largely on the spread of wireless technologies" [10].

The cost of connection in Nigeria is much higher compared to cost of connection in Europe. In Nigeria for instance, mobile phones cost around $35 per month for 250 MB download, which is by all manner of definition expensive for the African middle class left alone the poor rural cocoa farmers.

In Ghana, there are six licensed mobile and Internet service providers. Amongst is MTN, as the dominant in telecommunication and in Nigeria as well. Apart from the

expensive price paid per minute coupled with mere 250MB upload, the farmers are too poor to shoulder the high cost of connection in Ghana. The poor infrastructure is also another bane. There are areas where people have very weak signal. That has reduced the impact of mobile telephony for those with mobiles in the rural areas, let alone connection where fixed lines are in very drastic short supply.

The lack of fibers optics connection in Africa is another challenge. Most of the connections are on KU-Band and transmission is weak and often interrupted when it rains. Though under sea water fibers optics is currently under construction in Africa that would connect Africa, Europe and Asia, not until the project is completed Africa would still remain the most under connected in the world, with a mere 7% online users.

The poverty level in Sub-Saharan Africa is another problem exacerbating the challenges of connection and the attendant back clash it has on the farmer's participation on social media. A continent, where 70% of its people still live on less than a dollar a day, is still very much not ready to pay the high price for connection [12]. This would continue to put the poor cocoa farmers on the defensive and make them susceptible to exploitation. The implementation of fair-trade traceability through e-services would help both the producer and the consumer facilitate quality, safe and traceable products [11].

## IV. CONCLUSION AND FUTURE WORK

In the course of this research, we found out that not enough farmers have Internet connections and, even phones. Thus, although Africa has an important growing rate of new mobile phones subscribers, e-services could still be difficult to be deployed for fair-trade farmers in Nigeria and Ghana without proxies who would help them to be connected. This initial study has showed that in order to deploy e-services in those countries, human proxies, meaning people who would be paid an Internet connection to be shared with the farmers, who need access for the e-service, would be mandatory.

Our future work would look at the possibility of a proxy pilot project in Nigeria and Ghana, towards connecting fair-trade farmers to the Internet.

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