

Information and Communication Technologies (ICT) and youth farmers empowerment in conflict de-escalation and transformation periods in Osun State Nigeria

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Abstract

Three months information communication technology's components utilization was organized for youth farmers during conflict de-escalation stage as an appropriate empowerment or conflict rehabilitation strategy. The quest for the extent to which utilization of ICT's components by youth farmers has rehabilitate or empowerment youth farmers in conflict-prone areas necessitates conduct of this research. The period of examination was dichotomized into Conflict De-Escalation Period (CDEP) and Conflict Transformation Period (CTP). A simple random sampling technique was used to select 250 farmers from the Village Extension Agent's (VEA) register. Data were collected using an interview schedule and analyzed using frequency count, percentages, and t-tests. Findings revealed that over 50.0% of the youth farmers did not have access to ICT components during conflict de-escalation periods, as against over 60.0% of the youth farmers who made use of ICT components during conflict transformation periods. Consequently, farmers recorded lower production of cocoa (40 tons), maize (10 tons) and cassava (22 tons) during CDEP as opposed to higher production of cocoa (525 tons), maize (62 tons), and cassava (1,210 tons) recorded during CTP. The majority (95.0%) of youth lived below the poverty line in CDEP, contrasting with 68.0% who lived above the poverty line in CTP. Less than 13.0% of the youth farmers made use of new ICT, while more than 50.0.% made use of interpersonal and traditional ICT. Crop production is statistically different in CDEP and CTP at $p < 0.05$. Hence, use of ICT and peaceful environment are essential to increase in crop production and poverty alleviation among youth farmers.

Keywords: Youth farmers, conflict, crops production, poverty, information.

INTRODUCTION

Youth is a group of young people in a society who have a lot of energetic new ideas, as well as constructive perception to facing life challenges. Worldwide, it is estimated that there were 1.2 billion youths in the year 2000 and 53% of them lived in the rural areas. In Nigeria, youth predominated in a population estimated to have been 140 million in 2006, 45% falling in the age bracket with a mean age of 17.6 years (United Nations System in Nigeria, 2001). In the rural areas, youths contributed significantly to agricultural production. Most of them engaged in planting tree (such as cocoa) or arable crops, marketing and selling of agricultural commodities, connection of farmers to relevant agricultural information sources (Bolarinwa, 2007).

Potentially, youth constitute a promising workforce for rural and agricultural development because they have characteristics which when nurtured and utilized are invaluable assets to sustainable agriculture. Such characteristics include: innovation, minimal risk aversion, faster reaction time, less fear of failure, less conservative, greater physical strength, greater propensity for knowledge acquisition with a faster rate of learning, better social engagement and more apt at relationship building (Adedoyin, 2005). In order to fully promote the potential of youth, there is the need to empower them. That is, they should be given the opportunity or ability to improve their situations economically, educationally, politically, socially, and physically. This can be achieved by exposing them to relevant

information. With knowledge comes power. Hence, empowerment of rural youth farmers should be focused on ways to enhance their farm and non-farm productivity, thereby meeting their economic and social needs through efficient and sustainable management of their resources and control of their environment. The attainment of these goals depends not only on farmers' access to production resources, but also on their access to technical and up-to-date information regarding where to source and how to make use of such resources, and how to locate or create markets for the outputs of their economic enterprises. The adage, "knowledge is power" is by no means significant in the use of Information and Communication Technology (ICT) in Nigeria (Knitumoya, 1992).

Contrary to the previous situation, the benefits of ICTs are fully enjoyed when utilized harmoniously, in areas where conflict is constructively managed. In the conflict-ridden area of Osun state, conflicts between individuals and within communities were not constructively managed. Consequently, youths with high vigor from the majority population were exposed to the carrying of guns, destruction of property, and killing. Albert (2001) found that the majority of the youths invited to conflict resolution sessions organized by the United States Agency for International Development Office of Transition Initiatives Nigeria (USAID/OTI) were from militant groups in both Ife and Modakeke. Some of them even had bullet wounds on their bodies or bullets/pellets still lodged in some part of their bodies.

Youth were responsible for the bulk of the violent conflict because they were not afraid of being killed. Hence, conflict led to displacement of most (76.4%) of the youth farmers from agricultural areas, 62.0% had low crop production, and 72.0% disengaged from off-farm income generation in all, 73.4% lived below the poverty line (Bolarinwa, 2007).

ICT is an important means of achieving agricultural transformation because it provides local farming communities with scientific knowledge, thereby making farming interesting to the youth. It makes it possible for youth to have access to agricultural data, records, and information; as well as making transmission of information among individuals possible and less cumbersome even when thousands of miles apart. It provides information on the best farming methods which enable farmers to take appropriate measures to increase farm yield and fight against pest and crop or animal disease (e.g. bird flu) it also offers increased access to market information for farmers and traders. In developing countries ICT encompasses a comprehensive outlook of components that includes traditional ICTs (radio, cinema, television, video, and analog telephone) and new ICTs components such as computers, internet, and satellite connection Global Mobile Communication System (G.S.M).

In Nigeria today, both central and state governments have made ICT one of their development targets, thereby revolutionizing both governmental and non-governmental activities. Substantial use of (G.S.M) handsets by many Nigerians brought new business opportunities into the rural areas. Many individuals have now become dealers of handsets, recharge cards, or technicians who repair damaged handsets. Other rural dwellers have become computer operators or have even opened business centers. Hence, the use of ICT has created sources of employment that enable youth to obtain jobs and to earn salaries or wages. It enables youth to create their own wealth and thus, helps to eliminate unemployment, a leading cause of poverty and hunger among youths in Nigeria (Aluko, 2004). Based on this premise a course on utilization of ICT's components for agricultural development was organized for youth farmers in violent conflict areas with the aim of empowering the youth farmers and improve agricultural development in the area

In view of ICT potential to empower youth in areas that this research sets forth to examine these questions: how are youth farmers responding to ICT and have they been empowered by ICT? To resolve these questions, the research provided information on differences that ICT adoption has had on youth, information seeking patterns, agricultural production and their economic status now that they have employed a more constructive style of handling conflict.

METHODOLOGY

Osun state was divided into the four zones Oshogbo, Ife, Ijesha and Ejigbo based on agro-ecological criterion (OSADEP, 2006). Arokoyo (2005) classification of ICT components into traditional ICT (radio, television, prints, audio, video, and analog telephone), new ICT (computers, internet connections and Mobile phone) and inter-personal communication (village extension agents, friends and relatives) was adapted in the classification of ICT's components in this study. The zone with anecdotal accounts of conflict effects and those that witnessed incessant conflicts for more than a decade was purposively selected as the conflict-ridden area. The data collection period was dichotomized into conflict de-escalated periods and conflict transformation periods. De-escalating period is the period when the two communities stop fighting while conflict transformation period is the period when the two parties start looking for means of improving their livelihood and their environment. In other words it is the period of repairing what has been damaged during conflict. Sample framework was the farmers' register kept by the Osun State Agricultural Development Program's village extension agents. From the number of farmers in the village extension agent's register, 10-20% of the youth farmers were randomly selected for the ICT's components utilization training prior to the conduct of this research. In all two hundred and fifty youth farmers that participated in ICT utilization training were interviewed. Data were analyzed, and inferential statistics such as t-tests were used to establish difference in farmers' production levels, which is a function of empowerment.

RESULT AND DISCUSSION

Accessibility of Youth Farmers to ICT Components (Traditional, Interpersonal and New ICT)

Table 1 indicated that less than 50.0% of the youth farmers had access to information components during conflict de-escalation periods, compared to over 60.0% of the youth farmers who made use of ICT components during conflict transformation periods. Specifically, greater proportion (77.2%, 75.2% and 65.2%) had access to receive information from extension agents, radio and mobile phone respectively during conflict transformation period. It could be inferred from these findings that harmonious or peaceful situations are essential condition to farmers' access to relevant agricultural information components. In line with this finding, Ugwaegbu (1999) confirmed that in conflict situations, farmers are found diverting their time and energy to possession of weapons rather than pursuing information that will promote their crop production enterprises.

It could also be inferred from the finding that farmers are yet to make use of new ICT. Most farmers continue to rely on traditional ICT components and

interpersonal information sources. Yau (2005) attributed constraints on the use or access of new ICT components in Africa to low computer literacy, inadequate technical skills, and the high costs of personal computers systems, internet connection

service and payments for staying online, as well as the cost of recharge cards. Therefore, any program that promotes use of ICT components in Nigeria and Africa must focused on the provision of solutions to these constraints.

Table 1: Youth farmers access to ICT component in conflict de-escalated and transformation stages

ICT Categories	ICT Components	Conflict de-escalation stage			Conflict Transformation Stage		
		Often	Occasionally	Never	Often	Occasionally	Never
New	* Internet Connection	20(8.0)	30(12)	200(80.0)	80(32.0)	20(8.0)	150(60.0)
	G.S.M	60(24.0)	21(8.4)	169(67.6)	163(65.2)	25(10.0)	62(24.8)
Traditional	Radio	50(2.0)	22(8.8)	178(71.2)	80(32.0)	11(4.4)	159(63.6)
	Television	125(50.0)	10(4.0)	115(46.0)	188(75.2)	10(4.0)	62(20.8)
Inter-personal	Extension Agents	15(6.0)	40(16.0)	195(78.0)	193(77.2)	30(12.0)	27(10.8)
	Relatives	80(32.0)	20(8.0)	150(60.0)	122(48.8)	40(16.0)	98(35.2)

Figure in parentheses are in percentage

* Multiple responses.

Types of Information Sought by Farmers and Sources of Information

It was found that youth farmers often sought information on conflict related issues and agricultural development. Results in Table 2 indicated that 48.4% of youth farmers made use of new ICT to consult arm dealers and 46.0% used it to solicit help during conflict de-escalation periods. However, in conflict transformation periods, over 64.4% and 72.4% of farmers searched for improved seed information using old ICT components and interpersonal systems respectively as against 4.4%, sought for improved seed information using new ICT. It could be deduced from these findings that new ICT components are not

yet common among farmers in Nigeria. The findings support Arokoyo (2005), who found that farmers in Nigeria still primarily depend on traditional and interpersonal information sources. The United Nations' Educational, Scientific, and Cultural Organization (UNESCO, 2003) found that traditional ICT and interpersonal sources of information are the mainstay for information outreach in many parts of developing countries because of the poorly developed state of infrastructural development in the areas. Hence, projects that will make new ICT infrastructural components available and affordable to youth farmers should be embarked upon by government and non-governmental agencies.

Table 2: Type of Information Farmers sought for and Sources of Information in Conflict De-escalation and Transformation Stages

Type of Information	De-escalation Stage			Transformation Stage		
	New	Old	Interpersonal	New	Old	Interpersonal
* Land Preparation	10(4.0)	22(8.8)	65(26.0)	11(4.4)	145(58.0)	173(71.2)
Plant distance	-	11(4.4)	51(20.4)	12(4.8)	161(64.4)	182(72.4)
Improve seeds	-	17(6.8)	42(16.8)	18(7.2)	172(68.8)	181(72.4)
Good quality livestock	-	-	35(14.0)	21(8.4)	135(54.0)	142(66.8)
Storage facilities	-	25(10.0)	36(14.4)	29(1.6)	119(47.6)	152(60.8)
Processing of agricultural commodities	-	11(44.0)	45(18.0)	42(76.8)	110(44.0)	175(70.0)
Chemical application	-	32(12.8)	55(22.0)	39(15.6)	126(50.4)	172(68.8)
Purchase of inputs	-	18(7.2)	46(18.9)	65(26.0)	155(62.9)	191(76.4)
Making contact with warriors	101(40.4)	30(12.0)	-	-	-	-
Contact with arm dealers	121(48.4)	-	-	-	-	-
Soliciting help from neighboring communities	115(46.0)	-	-	-	-	-
Marketing of Agric products	10(4.0)	15(6.0)	20(8.0)	40(16.0)	182(72.8)	160(72.0)

Figures in parentheses are in percentage

* Multiple responses

Effect of Using ICT on Farmers' Production Levels in Conflict De-escalated and Transformation Periods

Results in Table 3 revealed decrease in farmers' production levels of cocoa (40 tons), maize (10 tons), and cassava (22 tons) in conflict de-escalation period as opposed to higher production

levels of cocoa (525 tons), maize (621 tons), and cassava (1210 tons) that were recorded during conflict transformation stage. Access of youth farmers to ICT components and the interest they have in seeking information using ICT components could be attributed to an increase in crop production during the conflict

transformation period. An increase in farmers' crop production confirmed that adoption of ICT has had a tremendous impact on farmers' income generation activities which confirmed that youth farmers have been empowered.

Table 3: Crop Production Level in Conflict De-escalation and Transformation Stage in Tones

Crops	Conflict de-escalation stage	Conflict transformation stage
Cocoa	40	525
Maize	10	621
Cassava	22	1210

Farmers' income in de-escalated and transformation periods

As indicated in Table 4, in Nigeria farmers' average yearly income from the sale of crops revealed a lower sum of N12, 510.00 during conflict de-escalated period compared to the higher N89, 150.00

average incomes recorded for farmers during the conflict transformation stage. Increase in income of farmers could be traced to increase in production levels and farmers having access to relevant agricultural information using new ICT, traditional ICT, and interpersonal forms of communication.

Table 4: Farmers' average income level in conflict de-escalation and transformation

Period	Income level
De-escalation	₦12,510.00
Transformation	₦89,150.00

Farmers' poverty level in conflict de-escalated and transformation stages

It was found that 95% of the youth farmers lived below poverty line in conflict de-escalated stage compared to 68% of youth farmers in non-poor categories during a conflict transformation stage as referenced in Table 5. It could be inferred from the result that the uplifting of farmers from absolute poverty level during a conflict transformation stage could be attributed to a farmer's access and utilization

of relevant agricultural information. Use of ICT not only empowered youth farmers but creates wealth. This finding confirmed the observation of Daudelin (2003) that the strongest predictor of conflict impact among farmers is poverty. It is so because poverty and over-dependence on subsistence agriculture is closely related. Hence, the promotion and accessibility of affordable new ICT components in the rural areas will go a long way toward reducing poverty among farmers.

Table 5: Distribution of youth by head count poverty level

Poverty Categories	Conflict de-escalated (%)	Conflict Transformation (%)
Core	65	10
Moderate	30	22
Non-poor	5	68

Hypothesis Tested

Test for difference in farmers' crop yield between de-escalated and transformational periods. Results from Table 6 revealed differences in farmers' crop yield levels between conflict de-escalated and conflict transformation periods. As indicated in the table 6, there is a significant difference between the farmers' yield in conflict de-escalated and conflict transformation periods for cocoa $t=2.49$, $p=1.96$,

cassava $t=4.12$, $p=1.96$. The difference is statically significant for cocoa $p<0.05$, and cassava $p<0.05$. This finding corroborated the mean yield index of farmers where they recorded higher crop yields in transformation periods and lower crop yields in conflict de-escalated periods. Hence, access to relevant agricultural information paves the way for higher crop yields and poverty alleviation of farmers in the area.

Table 6: T-test Analysis of Farmers Crops Yield in Conflict De-escalation and Transformation Stage

Crops	Period	Means	Means diff.	T-cal	P	Decision
Cocoa	Conflict de-escalation	525	485	2.49	1.96	S
	Conflict transformation	40				
Maize	Conflict de-escalation	10	611	3.10	1.96	S
	Conflict transformation	621				
Cassava	Conflict de-escalation	22	1188	4.12	1.96	S
	Conflict transformation	1210				

CONCLUSION

An attempt has been made in this paper to examine ICT utilization and its impact on the empowerment of youth farmers in conflict-ridden areas, with a view toward identifying possible policy strategies for improvement. The study found that life in conflict de-escalated period is characterized by low per capita income, inadequate access to information facilities, poor crop production, and high poverty levels. As indicated in the study, the impact of ICT utilization improves farmers' lives in conflict transformation periods. Therefore, suggested measures for improving the quality of life in any conflict-ridden area center on making new ICT available and accessible to youth farmers, generation of rural youth employment, making improved crops accessible and available to farmers, and integration of constructive conflict management training into village extension agent curriculum.

What is called for, however, is the adoption of a package of these measures rather than the use of only one of them. For instance, a policy instrument which is directed towards increasing agricultural production may not achieve the desired result if it is not accompanied by farmers' access to improved agricultural information via appropriate channels and the ability of farmers to manage conflict constructively. Without constructive conflict resolution, zero production will be recorded even when all other factors favor production. Mbarika (2005) stated that in developing countries, the digital divide policies and program typically utilize ICT to advance modernization, promote social and economic development, and improve the status of men. Therefore, if these suggestions are effectively administered and executed, it will go a long way towards improving the poor quality of life for conflict victims, promote social and economic development, and raise the status of farmers in Nigeria.

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