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AGRICULTURAL EXTENSION IN NIGERIA'S TRANSFORMATION AGENDA: KEY RECOMMENDATIONS BASED ON A FIELD STUDY

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ABSTRACT

Nigeria's smallholder farmers constitute about 70 percent of the nation's population and giving them access to agricultural extension services is critical to successful agricultural transformation agenda. This study addressed a fundamental issue on whether Nigeria's extension practitioners have the capacity to address smallholder farmers' needs. Multi-stage sampling procedure was used to sample 47 extension workers in the six geo-political zones of Nigeria. We used structured questionnaire to elicit information on respondents' job satisfaction, training needs, and effectiveness of extension workers. Significant challenges facing extension which must be tackled to avoid impeding the transformation agenda include: a) training and equipping extension workers with information and communication technologies that will expand their ability to reach large numbers of smallholder farmers deep in the rural hinterlands; b) enlarging their knowledge and skills of development and communication to facilitate integrated rural development programming; and c) improving performance by adopting creative ways for motivating workers. All these challenges can be tackled easily by adopting a "Communication for Development" (C4D) approach the World Bank and the Food and Agriculture Organization contend is essential to "achieving the Millennium Development Goals". By adopting C4D Nigeria could be the first in Sub-Saharan Africa in demonstrating the impact of communication on development.

Keywords: Agricultural transformation agenda, extension workers, extension training needs, Communication for Development (C4D), farmers, agricultural sector.

INTRODUCTION

Nigeria is not only Africa's most populated nation it can also become Africa's richest nation and leader in development. With a population of 168.8 million (2012) Nigeria has the internal market for the manufacture of numerous consumer goods. Also, given its rich resources in petroleum and fertile lands, the country can become self-reliant in food and other needs. Indeed, it is the goal of the government to return the country to the glorious 1960s when Nigeria was a net exporter of many products. In early 1960s, Nigeria led the world in producing 42% of groundnut exports; supplied 27% of the world's oil palm; and 18% of cocoa production. However, the country lost this urge with the gushing of oil in the 1970s. Today, Nigeria imports over 1.3 trillion

naira in wheat, rice and sugar every year—N635 billion annually importing wheat alone—products, which Nigerians can grow at home. Thus, the Nigeria Transformation Agenda is a federal policy aimed at returning the country to greatness through an agriculture-led development approach aimed at achieving a hunger-free Nigeria; creating millions of employment opportunities; and making the nation once again, a leader in global food markets.

While the transformation agenda is lauded by many Nigerians as the way to go; other key leaders suggest ways the program can be made painless and successful. Adekunle (2013) asserted that the Government of Nigeria must "implement good policies on agricultural extension" if the transformation agenda is to be a success. He noted that a "well-focused agricultural transformation program is usually sustainable, provided it is targeted at the smallholder farmers"; handled by

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“efficient [extension] personnel”; and “supported by strong extension services”. The emphasis on extension arises from the fact that Nigeria’s smallholder farmers, constitute anywhere between 50 and 70% of the nation’s population and giving them access to agricultural extension services is critical to successful national food production and development. Thus, a fundamental issue is whether Nigeria’s extension practitioners have the capacity to address smallholder farmers’ needs? Adekunle (2013) added that, “any nation that has a quality extension system, that listens to the needs of its farmers; motivates its extension workers and measures its impact, will record high agricultural productivity among small-scale farmers”. In promoting his agricultural transformation agenda, the Honorable Minister of Agriculture and Rural Development, Dr. Akinwuni Adesina, asked: Why should a country with “84 million hectares of arable land be spending \$11 billion importing basic foods such as wheat, rice, fish and sugar? How can we have so much good agricultural land in the north and yet have so much poverty?”. He was mindful that the problem may well lie with extension and stressed that for the “first time ever, extension will be given a high priority in the Federal Ministry of Agriculture and Rural Development”. While Dr. Adesina’s commitment to improving extension in Nigeria is real there is no doubt that critical problems facing extension in Nigeria need to be identified and addressed.

Obiora and Emodi (2013) highlight the problems as including: the absence of a well-defined extension policy; poor staffing; poor funding; and weak research/extension/farmer linkage. Other researchers identified official corruption, inconsistent agricultural policies and poor motivation of extension workers as bottleneck to extension progress in Nigeria (Olanrewaju et al., 2014; Chukwuemeka and Nzewi, 2011). For solutions, they suggest extension restructuring, capacity building and increased funding. In particular, Obiora and Emodi (2013) suggested the government adopts the “pluralistic and demand-driven extension” approach, which has been tried in many African countries since 1999, but with virtually no success. Not addressed by the authors are specific issues, such as, how can extension workers more effectively reach the large numbers of smallholder farmers scattered all over the countryside; what kind of training is needed to make extension workers more effective in their role as development facilitators; and how can extension in Nigeria be structured to make it operate in a cost effective

manner? Our study addressed these concerns as critical issues that must be examined if the transformation agenda is to be successful.

Research Questions

- What is the capacity of Nigeria extension practitioners to achieve the current transformation agenda of the government through the use of ICTs?
- What critical problems facing extension in Nigeria need to be addressed for attaining the government’s on-going transformation agenda?
- What kind of training is needed to make extension workers more effective in their role as development facilitators?
- How can extension in Nigeria be structured to make it operate in a cost effective manner?

Purpose of the Study: This study is part of an on-going effort by a small group of African agricultural extension scholars and administrators in nine African countries plus two U. S. members of African heritage to find lasting solutions to the problem of extension ineffectiveness in Africa. The group called Extension Africa, received funding from the CTA [The Technical Centre for Agricultural and Rural Cooperation for Africa, the Caribbean and the Pacific Region, funded by the European Union (ACP-EU) to hold its inaugural conference in Wageningen, The Netherlands in August this year. The members conducted a survey of 395 extension workers in the nine countries—covering district, sub-district and grassroots extension workers. This paper reports the findings of the Nigerian survey, which comprised 47 workers, which is too small for generalization; however, it does reveal critical issues facing extension in Nigeria. The purpose of the study was to examine issues facing extension and how to address them. The specific objectives were to:

- Identify the demographic characteristics of extension workers and their implications for extension policy and training,
- Examine the level of job satisfaction as a motivating factor in extension,
- Assess the potential of using ICTs (Information and Communication Technologies) to enhance extension reach and reducing the cost of providing extension at the same time,
- Ascertain extension workers’ training needs,
- Examine extension workers’ assessment of their effectiveness.

Theoretical framework: This study presents a comprehensive framework and relevant theories for explaining how the variables in this study may interplay to affect the capacity of the extension workers to successfully deliver the agricultural transformation agenda of the government. The theories considered relevant include:

Knowledge Gap Theory: The knowledge gap theory was first proposed by Tichenor, Donohue and Olien in 1970 (Severin and Tankard, 2001). The theory expresses the belief that the increase of information in society is not evenly acquired by every member of society as people with higher socioeconomic status tend to have better ability to acquire information than others with lower socio-economic status. This theory assumes that attempt to improve people's life with information through invention of technologies might result in an unwanted outcome such as a further increase in the gap between a group of better-educated people who know more about most things, and those with low education who know less. While the knowledge gap theory has its shortcomings among which is the assumption that knowledge automatically translates to behaviour change without much consideration for the role played by individuals attitude, however, it provides the basis for a probe into extension workers knowledge of goals of extension in this study. This is anticipated to reveal whether access to and use of modern Information and Communication Technologies for extension services delivery in Nigeria has any link with the extension workers background characteristics and their awareness of public affairs issues.

Theory of Planned Behaviour/Reasoned Action: Ajzen and Fishbein formulated in 1980 the theory of reasoned action (TRA) (Vallerend et al., 1992). The theory suggests that behavioural outcome of individuals is a function of his/her intention to perform the behavior and that this intention is, in turn, determined by his/her attitude toward the behavior and subjective evaluation of the risks and benefits of that outcome. The assumption of the TRA that behavioral achievement depends on both motivation (intention) and ability (behavioral control) informed the inclusion of variables such as job satisfaction of extension workers, competencies in using ICT and effectiveness of several aspects of extension in this study.

Conceptual framework: The framework shown in Figure 1 represents the schematic representation of how

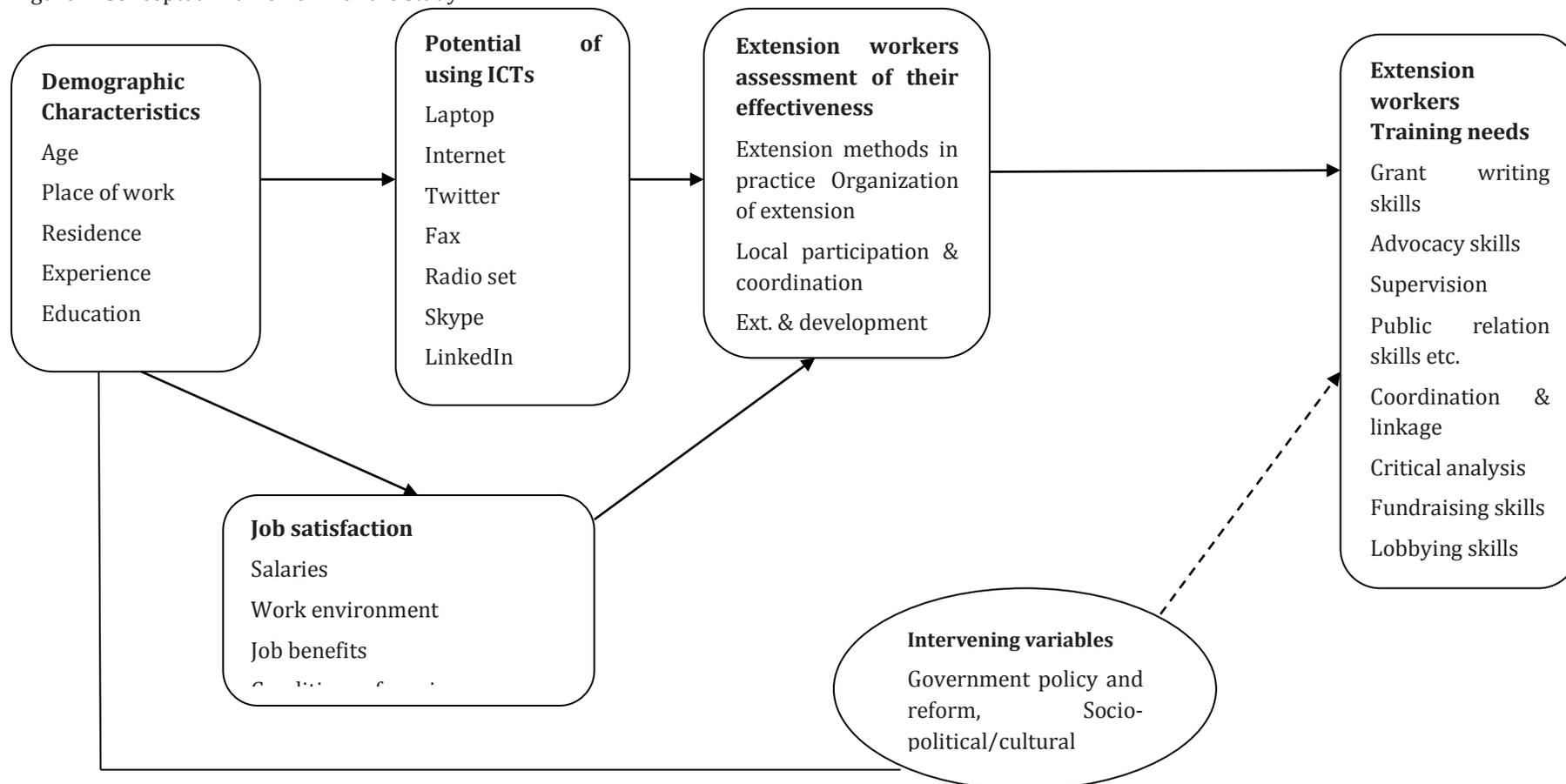
independent variables, intervening variables and the dependent variables are interrelated. The independent variables of the study comprised of extension workers demographic characteristics, job satisfaction, potentials of using ICTs and their assessment of extension workers effectiveness. These variables are likely to have direct impact on the capacity of the extension workers to successfully deliver the agricultural transformation agenda of the government, which also gives direction to areas where capacity building might be needed for the extension workers. The respondents' demographic characteristics are presumed to affect their potentials of using ICTs. For instance, extension workers with higher level of educational exposure may be more skilled in the use of modern ICTs such as twitter and LinkedIn than others with lower educational exposure.

Respondents' ability to use ICT tools may also determine how effective the extension work in the study area is. Furthermore, extension workers satisfaction with their job conditions and reward system may also influence how serious they take their responsibilities to the clientele and government, hence the extent of effectiveness of the extension methods in practice. Also, government policy on agriculture, socio-political/cultural psyche of extension workers including the value system within respondents organization (intervening variables) are presumed to indirectly influence the skill gap among the extension workers.

MATERIALS AND METHODS

The study area is Nigeria and all extension workers within the Agricultural Development Programme system constituted the population for the study. Multi stage sampling procedure was used to select 47 agricultural extension workers across the six geopolitical zones in Nigeria. Nigeria is divided into six geopolitical zones with each zone comprising of six states. Two states (representing 50%) were randomly selected from each geopolitical zone. The Agricultural Development Programme which is the seat for extension service delivery in each state is divided into administrative zones which range from 2 to 4 depending on the number of Local Government Areas in the state. Simple random sampling technique was used to select 50% of the zones in each selected states where respondents were selected. Purposive Sampling technique was used to select extension workers who are thought to have the information required for inclusion in the survey.

Figure 1. Conceptual framework for the study.



Using structured questionnaire, data was collected on extension workers' demographic characteristics, job satisfaction, potential of using ICTs to enhance extension reach and their communication training needs. Potential of using ICTs to enhance extension reach was measured using ownership/access to ICTs; competence and use of the ICTs for extension work on Likert-type

scales. Respondents indicated their level of job satisfaction by responding to statements on a five Likert-type scales, which ranged between very highly dissatisfied and very highly satisfied. Extension workers communication training needs was determined by asking respondents to indicate the skills deemed important to their work on a Likert scale of "1" being "very lowly important" to

"5" being "very highly important," on the one hand, and how competent or skillful they are in that area from "lowly proficient" to "somewhat proficient. With the aid of Statistical Package for Social Sciences (SPSS) software, data was analyzed and summarized using descriptive statistics such as frequency, percentages, mean and ranking.

RESULTS AND DISCUSSION

Demographic characteristics of extension workers

Education: As the most populous, and perhaps, the wealthiest country in Africa, Nigeria must establish standards of education for its extension professionals for other countries to follow. There is no doubt that the greatest weakness of extension practitioners in Africa is the paucity of their training. Rondinelli (1993) noted that extension workers across the developing world are being asked to implement integrated rural development programs. However, as these IRDs are becoming increasingly complex, he noted that extension workers lacked the skills to cope with this increasing complexity of rural development programming. In this study extension workers were asked to indicate the highest level of education they attained versus the highest level of education they aspired. It was discovered that many extension workers are highly dissatisfied with their levels of education, which is very likely to affect job satisfaction and, hence performance (Agunga *et al.*, 1997).

On the other hand, one may also infer that the quest for higher degree such as Ph.D. is an indication of the plausible high turn-over rate of extension workers in the nearest future as soon as this goal is realized giving that Ph.D. qualification is not a requirement for work as extension workers in Nigeria.

In-service training attended in the last two years:

Table 1 further shows that a sizeable proportion (44.7%) of the respondents had no or barely one in-service training exposure in the last two years of their work experience while only 14.9% of them had at least four in-service training exposures within the same period. This distribution suggests that most of the extension workers in Nigeria were not updated with the necessary capacity to function effectively on their job in the last two years. In the vein of Hiire's (2011) argument on the positive correlation between job satisfaction and staff training and development, one may also infer here that the poor training and development opportunities for extension staff is contributory to their poor job satisfaction revealed in table 2.

The poor exposure of extension workers to opportunities for in-service training observed in this study might be associated with budgetary constraints and poor financing of most ADPs in Nigeria especially, since the withdrawal of the World Bank funding (Ammani *et al.*, 2010) and the poor remuneration of staff (Obiora, 2014) which makes self-sponsorship for

training and capacity building very challenging.

Sex: The study revealed that majority of the extension workers were male. Nigeria's demographic profile (2013) estimates the population at 170 million, up 30 million from 140 million in 2006 (July 2012 est.) of whom 50.7% are male and 49.3% female. In 2009, the male population was 71.3 million and the female population, 69.1 million, that is, nearly 2.2 million more males than females. Of the 170 million Nigerians, slightly more than half (53%) lives in rural areas in 2013. Thus, more than 40 million of Nigeria's female population lives in rural areas and significant proportion of them are engaged in agriculture. Since cultural norms, especially in Muslim communities, prevent male extension workers from talking to female farmers, it would seem that the ratio of 7 male extension workers to 3 female extension workers in rural areas is highly unbalanced. More female extension workers are needed.

Marital Status: An overwhelming proportion (95.7%) was married while the remaining 4.3% of the respondents were singles. Marriage is largely perceived as a factor that promotes the act of being responsible in people (Lopez, 2013). This is because married individuals usually have dependants are more independent in many spheres of life including livelihood sustenance. Hence, they tend to take their job more seriously than the singles who may still be dependants. On the other hand, married individuals are prone to easy distraction due to multiple responsibilities i.e as parents, husband or wife e.t.c. and when this occurs, their efficiency is greatly affected. In this vein, the married status of most of the extension workers in this study is seen as a double edge sword which can cut on either side.

Place of work and residence: The number of extension officials interviewed was spread across the board—grassroots, sub-districts and district levels. About 59.6% work at the village level, 21.3% at the sub-district level and 14.9% at the district level. The majority of grassroots extension workers, however, do not reside in the areas where they work. Only 23.4% of extension workers surveyed lived in rural areas; 76.6% lived in urban or sub-urban areas. Given transportation difficulties it would seem that these urban dwellers are less likely to frequent the rural areas, thus, limiting the degree of extension contact with farmers.

Work experience: Work experience is the number of years an extension worker has been on the job. The

study found that the average was 15.6 years implying that the majority have been employees of the Ministry of Agriculture for a long time. Many also indicated that they have been out of formal training for a mean of 10.3 years. Thus, when “years of experience” and “how long you completed your highest level of education” are combined the average extension worker has been out of school for about 30.9 years, which implies that the expected on-the-job training for extension workers were not be carried out on a regular basis in Nigeria.

Age: The respondents’ age distribution reveals that almost half (42.6%) fell within the age category of 41-50 years with the mean age value of 44.7 years. Only 6.4% were less or equal 30 years old. This suggests that majority of the extension workers in Nigeria were middle aged people who are still in their active years of service. This is expected to have a positive effect on their job efficiency and productivity as Truxillo (2011) reported that job performance and productivity is higher in younger workers when compared with the older ones.

Table 1. Distribution of selected demographic characteristics of the respondents.

Variables	Freq.	%	Mean
Highest level of Education			
Diploma	22	46.8	
Bachelor	15	31.9	
Masters	10	21.3	
Highest level of Education achieved I will be satisfied			
Diploma	5	10.6	
Bachelor	3	6.4	
Masters	13	27.7	
PhD	23	48.9	
No response	3	6.6	
No. of in-service training attended in the last 2 years			
1	11	23.4	
2	13	27.7	
3	6	12.8	2.8
4 or more	7	14.9	
None	10	21.3	
Sex			
Male	34	72.3	
Female	13	27.7	
Marital Status			
Married	45	95.7	
single, not married	2	4.3	
single parenting	0	0.0	
Divorced/separated	0	0.0	
Widowed	0	0.0	
co-habitation	0	0.0	
Years of work experience			
< 10	12	25.5	
11-20	26	55.4	15.6
>20	9	19.2	
Age as at last birthday			
< 30	3	6.4	
31-40	12	25.5	44.7
41-50	20	42.6	
>50	13	27.7	

Table 2. Distribution of responses to statements on Job Satisfaction.

Statements	Mean	SD	Rank
My salary and incentives related to the job	2.5	1.5	16
Cooperation from other government ministries	2.7	1.2	14
Resources I have to work with, such as transportation	2.7	1.3	14
Cooperation from other departments of agricultural ministry	2.9	1.3	13
The process of decentralization in my country	3.0	1.2	12
Opportunities for short-term training	3.2	1.7	10
My knowledge of development facilitation	3.2	1.6	10
Opportunities for higher education	3.3	1.5	9
My level of education	3.4	1.6	6
My training in communication	3.4	1.5	6
Cooperation from nongovernmental organizations	3.4	1.4	6
My familiarization with general systems theory	3.6	1.3	5
My work as an extension agent	3.8	1.3	4
My achievement as an extension officer	3.9	1.2	3
Achievements of extension	4.2	1.3	2
My knowledge of agriculture to teach farmers	4.4	1.4	1

Means were calculated from a scale of 1 = Very Highly Dissatisfied (VHD); 2 = Highly Dissatisfied (HD); 3 = Dissatisfied (D); 4 = Satisfied (S); 5 = Highly Satisfied (HS); 6 = Very Highly Satisfied (VHS)

Job satisfaction: Table 2 reveals that extension workers were generally dissatisfied with their conditions of service. They expressed a high level of satisfaction with their knowledge of agriculture to teach farmers (4.4+1.4); the achievements of extension (4.2+1.3) and more specifically, with their achievements as extension workers (3.9+1.2). However, they also expressed very strong degree of dissatisfaction with their salaries (2.5+1.5), the level of resources they have to work with (2.7+1.3) and the cooperation they get from other ministries, including departments in their own Ministry of Agriculture and Rural Development (2.7+1.2). This result is consistent with the argument of Salawu, Hassan and Adefeso (2013) that inequalities in salary distribution among workers in Nigeria still remains a feature of the countries wage distribution pattern. The foregoing is indicative of the fact that salaries and general work conditions and indeed benefits are paramount determinants of job satisfaction among extension workers in Nigeria. It is pertinent to also note that poor in-service training opportunities in the ADPs observed in Table 1 is another plausible underlying factor responsible for poor job satisfaction among extension workers. It therefore follows that issues relating to job conditions and remunerations including opportunities for staff development would be expedient in order to reposition the extension system in Nigeria for the long overdue agricultural transformation.

Extension workers' access to and competencies in using ICTs and related services: A major problem facing extension workers throughout Africa, including Nigeria, is that whereas the number of extension workers is decreasing as a result of deaths due to HIV/AIDS or departures to greener pastures, such as Non-Governmental Agencies; the numbers of farmers continues to multiply due to population growth. The result is a very high farmers-to-agent ratio (Oyaro, 2010). The use of ICTs and related services is one way to expand extension's reach and, at the same time, reduce the cost of providing extension as the cost of these technologies is on the decline. Table 3 shows that more than half of the respondents own or have access to 11 out of 29 of the listed ICT tools and related ICT services. These include E-mail software, laptop, radio and TV set, cell phone, digital/still camera, video cassette recorder/player, video camera, Word-processors and Presentation software. This result further implies that the majority of the extension workers in Nigeria do not own or have access to 18 of the essential ICT tools and relevant services for smooth performance of extension and related job. The foregoing therefore suggests that possession and access to essential ICT tools and relevant services for extension work is still poor in Nigeria. This finding corroborates earlier findings by Yekinni (2011) who observed poor access to basic ICT tools among researchers in the agricultural establishments and

institutions in Nigeria. The table further shows that more than half of extension workers in Nigeria indicated competency in using only 15 out of the 29 listed ICT

tools and services. This result suggests a huge gap between the communication skills possessed and required for smooth extension work in Nigeria.

Table 3. Exposure of extension workers to ICTs.

Type of ICT	Own/have access		Competency	
	Freq.	%	Freq.	%
1. E-mail software (outlook, yahoo, hotmail, gmail)	25	53.2	32	68.1
2. Desktop/Office computer	21	44.7	31	66.0
3. Laptop	28	59.6	33	70.2
4. Internet/ WWW in office	14	29.8	17	36.2
5. Internet in cyber café.	18	38.3	26	55.3
6. Cell phone	46	97.9	42	89.4
7. MP3/4 Players	23	48.9	27	57.4
8. Landed phone	7	14.9	16	34.0
9. Web site of Ministry of Agriculture	15	31.9	17	36.2
10. Facebook	22	46.8	24	51.1
11. LinkedIn	6	12.8	7	14.9
12. Twitter	12	25.5	13	27.7
13. Radio set	43	91.5	39	83.0
14. Community Radio Programming	16	34	19	40.4
15. Fax	4	8.5	8	17.0
16. Television set	42	89.4	41	87.2
17. Digital / Still camera	30	63.8	32	68.1
18. Video cassette recorder/player	35	74.5	35	74.5
19. Video camera	28	59.6	32	68.1
20. LCD projector	23	48.9	25	53.2
21. Video/Digital camera	29	61.7	28	59.6
22. e-Commerce	5	10.6	7	14.9
23. e-agriculture news	9	19.1	11	23.4
24. Word-processors (e.g. Word, WordPerfect)	27	57.4	25	53.2
25. Spreadsheets (e.g. Excel, Lotus) software	23	48.9	22	46.8
26. Statistical Analysis Software (SPSS, SAS, Minitab)	20	42.6	20	42.6
27. Presentation software (e.g. PowerPoint)	25	53.2	23	48.9
28. e-discussion/listserv/ newsgroup	5	10.6	4	8.5
29. Have a Skype account	5	10.6	4	8.5

Extension workers’ training needs: Data depicted in Table 4 is showing extension workers’ training needs. Respondents were asked to indicate skills deemed important to their work and to the right, indicate how competent or skillful they are in that area. On a Likert scale of “1” being “very lowly important” to “5” being “very highly important,” the scores ranged from 2.7 to 4.3 that is, from somewhat important to very important. However, to the right, the scores ranged only from lowly proficient to “somewhat proficient,” suggesting a training gap yet to be filled. Furthermore, respondents’ index of proficiency in relevant

extension communication skills was low in lobbying (2.6±1.4), grant writing (2.7±1.3) and advocacy skills (2.7±1.4). Highest level of proficiency among the respondents was observed in supervision (3.9±1.3), listening (3.9±0.9) and public relations (3.7±1.1) skills. From the findings of this study, it would appear that, if the grade of the extension workers surveyed in this study is representative of the entire extension workers in Nigeria, a robust overhaul of the entire capacity and competence of the extension staff may be a sine qua non for the desired transformation to be achieved.

Table 4. Extension workers' training needs.

Mean	SD	Item	Mean	SD
4.3	0.8	Public speaking skills (Speak with a purpose)	3.6	1.1
4.2	0.9	Listening skills	3.9	0.9
4.1	1.1	Leadership skills	3.6	1.0
4.0	1.1	Communication planning	3.3	1.2
3.9	1.1	Research methods	3.5	1.1
3.8	1.3	Writing skills (Write with clarity and precision)	3.5	1.2
3.7	1.0	Ability to use statistics to make a point	3.3	1.0
3.6	0.9	Integrated rural development	3.6	0.9
3.5	1.0	Promoting gender equity	3.6	1.0
3.5	1.2	Critical analysis	2.8	1.2
3.5	1.3	Coordination and linkage skills	3.5	1.3
3.5	1.1	Communication for development	3.4	1.4
3.4	1.4	Computer literacy skills	3.4	1.3
3.4	1.3	Assessing extension impact	3.3	1.1
3.4	1.0	Community driven-development	3.6	0.9
3.3	1.1	Grant writing skills	2.7	1.3
3.1	1.3	Involving the people in extension work	3.4	1.0
3.0	1.3	PowerPoint preparation	3.0	1.3
2.7	1.4	Advocacy skills	2.7	1.4
2.7	1.3	Fundraising skills	3.1	1.3

Left: Means were calculated from a scale of 1 = Very Lowly Important (VLI) ; 2 = Lowly Important(LI); 3 = Somewhat Important (SI); 4 = Highly Important(HI), 5= Very Highly Important VHI)

Right: Means were calculated from a scale of 1 = Very Lowly Proficient (VLP); 2 = Lowly Proficient (LP); 3 = Somewhat Proficient (SP); 4 = Highly Proficient (HP); 5= Very Highly Proficient(VHP)

Knowledge of goals of extension and extension goal attainment: On Table 5, respondents indicated that the goals are many and varied—ranging from helping farmers to adopting innovations through increasing agricultural production to making extension financially self-sustaining. The goals agreed to by 85.1% or more respondents included helping farmers adopt agricultural innovations, increasing agricultural production, mobilizing the youth for agricultural development, facilitating linkages between research centers; helping farmers gain access to credit and other inputs; collaborating with NGOs and advising government on

extension policy. Promoting gender equity and facilitating farmers' participation in decision-making were considered other important extension goals. Surprisingly, extension workers admitted that, whatever the goals, they were not being met. Improving rural livelihoods; promoting gender equity or women's participation in development; and facilitating coordination across other ministries and with the Ministry of Agriculture were the goals least met with mean scores of (<2.0), It means that in spite of more than 50 years of extension in Nigeria, hardly any of the extension a goal is close to being met.

Table 5. Knowledge of goals of extension.

SN	Extension goals	Number of respondents	Mean of score: Are goals met?
1	Helping smallholder farmers adopt agricultural innovations	43	2.0
2	Increasing agricultural production	43	2.0
3	Mobilizing the youth for agricultural and rural development	43	2.0
4	Facilitating linkage between research centers and farmers	43	2.0
5	Reducing the HIV&AIDS pandemic	42	2.0
6	Helping farmers gain access to credit/farm inputs/markets	42	2.1
7	Collaborating with NGOs	41	2.0

8	Advising government on extension policy	40	2.0
9	Improving rural livelihoods	38	1.9
10	Promoting climate change education	37	2.1
11	Facilitating holistic development	36	2.1
12	Promoting gender equity or women's participation in development	36	1.9
13	Promoting smallholder farmers' participation in development decision-making	36	2.1
14	Facilitating integrated rural development/ poverty reduction strategy programs	35	2.8
15	Narrowing the farmers to agent ratio	31	2.2
16	Facilitating coordination across other sectors of government	31	1.8
17	Facilitating coordination across departments in the Ministry of Agriculture	30	1.9
18	Making extension financially self-sustainable/cost recovery	28	2.2

Means were calculated from a scale of 1 = Not very well achieved (NVWA); 2 = Not Well Achieved (NWA); 3 = Not Achieved (NA); 4 = Achieved (A); 5 = Well Achieved (WA) and 6 = Very Well Achieved (VWA) or DK = Don't know.

Effectiveness of several aspects of extension: In this section extension workers were asked to assess the effectiveness of several aspects of extension, such as extension methods in practice; the organization of extension; extension and local participation and coordination; and extension and development.

Table 6(a) on extension methods reveals that the general comments were that these methods are changed too frequently; that farmers cannot afford privatized extension; and that extension workers are not being involved when it comes to deciding the kind of extension system for the country. Other key points mentioned were: a) field extension workers should base their activities on proven research; and b) extension workers should be able to use research skills to assess development impact.

Table 6(b) on Human Dimensions and Extension indicates that extension workers overwhelmingly agreed that communication is necessary for coordination, participation and building linkages. It is revealing to note that extension workers see communication as central to participation, integration

and building linkages yet they also admit that they lack training in this area. Indeed, they point out that virtually all government ministries need communication. They also added that in their role as development facilitators they need communication training.

Table 6 (c) shows extension workers' views on development and their role in bringing it about. As shown in the table, the number one interest expressed by extension workers was for training in development (Mean=5.1) on a 6.0 scale. They also noted that understanding development theory and policy is essential for extension workers. Also noteworthy in the findings is that whereas extension workers are charged with implementing integrated rural development programs they were never trained on how to do so. In general, they agreed that they are not being involved in development planning and project evaluation; and have not been trained in poverty reduction strategy programming, a World Bank program that exists in virtually all developing countries.

Table 6(a). Perception of Extension Agents towards Extension Methods.

Extension Methods and organization	Mean	S.D
Extension methods are changed too frequently	3.7	1.1
Small farmers can afford to pay for privatized extension services	2.8	1.7
Extension workers have no say on what extension system is introduced in their country	4.1	1.6
Extension workers should be able to use research skills to assess development impacts	4.6	0.9
Field extension workers should base their activities on proven research	5.1	0.9
I was trained in how to implement pluralistic extension	3.7	1.3
I was trained in how to implement demand driven extension	4.0	1.1
I am told when the extension method is being changed	3.9	1.3

1 = Very Strongly Disagree (VSD); 2 = Strongly Disagree (SD); 3 = Disagree (D); 4 = Agree (A); 5 = Strongly Agree (SA) and 6 = Very Strongly Agree (VSA).

Table 6 (b). Extension Workers' Views on the Human Dimension.

On Participation and Coordination	Mean	S.D.
Communication is necessary for coordination	5.2	0.8
Communication is necessary for participation	5.2	0.7
Communication is necessary for building linkages	5.1	0.8
Extension workers get adequate training in communication	3.9	1.6
Development facilitators need communication training	4.9	0.9
Virtually all development ministries have need for communication	5.2	0.8

1 = Very Strongly Disagree (VSD); 2 = Strongly Disagree (SD); 3 = Disagree (D); 4 = Agree (A); 5 = Strongly Agree (SA) and 6 = Very Strongly Agree (VSA).

Table 6 (c). Extension Workers' Views on Development.

On Development Training	Mean	S.D.
Extension workers need training in development	5.1	0.8
Understanding development theory is essential for extension workers	4.8	1.1
Understanding development policy is essential for extension workers	4.8	1.0
Understanding development practice is essential for extension workers	4.8	1.1
The development process is complex	4.0	1.2
Extension workers lack the training to cope with the complexity of the development process	4.4	1.4
Community-driven development is a success in my area	3.9	1.0
I was trained in integrated rural development implementation	3.3	1.5
Extension workers are involved in development planning	3.1	1.5
Extension workers are involved in project evaluation	3.1	1.2
I was trained in poverty reduction strategy programming.	3.1	1.6

Means were calculated from a scale of 1 = Very Strongly Disagree (VSD); 2 = Strongly Disagree (SD); 3 = Somewhat Disagree (SWD); 4 = Somewhat Agree (SWA); 5 = Strongly Agree (SA); 6 = Very Strongly Agree (VSA)

CONCLUSION AND RECOMMENDATIONS

The study concluded that extension workers in Nigeria have poor capacity in the use of development and communication tools which are central to their work and the attainment of the national agricultural transformation agenda. An effective transformative agricultural agenda will thus require making equally transformative changes in the extension system which should begin with training of extension workers on innovative extension approach described by the World Bank and the Food and Agriculture Organization of the United Nations (2007) as "Communication for Development" (C4D). Also, these changes will include reviewing and reforming the extension curricula at college, university and field levels; and restructuring extension at the state and federal levels to more effectively serve all clients at minimum cost. For example, we found that virtually all ministries have similar communication needs. Therefore, setting up regional multimedia and print production centers is a cost-effective way of meeting these needs and ensuring that these media centers operate in a cost-recovery

manner. The study also showed that effective extension practice must be backed by sound science. Therefore, social science approaches to extension must be reviewed and adopted including assessing extension impact.

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