



ABSTRACT

This study examined the assessment of internet as tool for communication extension with special interest in International Institute of Tropical Agriculture (IITA) and farmers in Ibadan, Oyo State. It adopted Descriptive Survey and Structured Interview methods.

Questionnaire and interview guide were employed as instruments for eliciting data from the respondents. The study was anchored on the Development Media Theory and Participatory Model of development. Simple random sampling and purposive techniques were used to draw 92 sample size from the universe population. Descriptive statistics was adopted for data analysis with the statistical tools of

ASSESSMENT OF INTERNET AS TOOL FOR COMMUNICATION EXTENSION BETWEEN INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE (IITA) AND FARMERS IN IBADAN, OYO STATE.

OJO, TITIOYE OYEWINKA Ph.D

Department of Mass Communication, KolaDaisi University, Ibadan, Oyo State,

Introduction

Agricultural development is vital for national transformation and increased of food security and to achieve this, farmers, researchers, scientist, and extension workers need to be well informed. In view of Jensen (2003), the right information will guarantee knowledgeable, active, engaged and informed farmers who can participate wisely in the country's economic production and consequently development. Radio, Television, Community newspapers and extension workers have been identified as various sources of agricultural information to farmers. However, this paper looks at the introduction of the internet services to harness communication and information needs for agricultural development purposes. The medium is relatively new channel of disseminating mass mediated information.

Wilson (2005), states that farmers should be aware and knowledgeable of ICTs significant role and utilize it effectively in obtaining their information needs. This is important considering the successful employment of ICTs in Agricultural production across the world. Ugande (2005), posits that in the 21st century, information dissemination and retrieval depend largely on the ability of one access and utilize the internet effectively through the use of various technological means. Various researchers/scientists state that there have been efforts to harness communication and information media for planned development purposes. This is in recognition of the function which information and communication media can take part in fostering and mobilizing people towards national development. The world has become a global village as predicted by McLuhan (2001), with its rapid transformation and increased knowledge transfer.

A major constraint to agricultural development in Nigeria is lack of appropriate channels to deliver extension messages. Access to information is one of the most critical resources in agricultural sector, as well as economic development in Nigeria. Farmers need information on opportunities and threats in which the internet can be of significant in accessing agricultural information. The internet is one tool that can enhance flow of information between and among agricultural research institutes, Extension Agents (EAs)



tables, frequencies and percentages. This study found out that the selected farmers and Agricultural Research Institute has functional internet facilities and also familiar with it for agricultural extension purposes. It revealed that there is high internet utilization in the agricultural extension. It indicated that the internet has improved Nigerian farmers productivity. This study identified challenges confronted by the selected Agricultural Research Institute and farmers such as lack of adequate funding, dearth of technical experts, problems of accessibility, lack of consistence training and infrastructural problems. It concluded that internet remains a viable tool for agricultural extension development globally. This study recommended that government should provide adequate fund for the internet installation and maintenance of Agricultural Research Institutes in Nigeria. Technically, government should employ internet experts who would be organising training at intervals for the nation's Agricultural Extension Research Institutes and mechanized farmers. Finally, relevant facilities should be made available for the enhancement of internet use at various Agricultural Research Institutes.

Keywords: Assessment, Communication Extension, Agricultural Research Institutes, Farmers, Internet.

and the farmers. African, Caribbean and Pacific (CTA,2003) and Food and Agricultural Organisation (FAO,2000) defined internet as one technology involved in collecting, processing, storing, retrieving, disseminating and implementing data and information using microelectronics, optics, telecommunications and computers.

Nwabueze(2005), notes that internet can bring new information services to rural areas where farmers (end users) will have much greater access to new agricultural innovations and information, than ever before. Access to such new information source is a crucial requirement for the sustainable development of farming systems. The internet can be of immense help by enabling extension workers to gather, store, retrieve and disseminate a broad range of information needed by farmers. Alozie (2009) argued that in many countries the cost of maintaining full complement of extension agents are increasing progressively while the price of computers in the global market has decreased rapidly. This, therefore, makes the use of internet for information dissemination more economical. The aim of research and extension in Nigeria is to help farmers increase their agricultural productivity and so facilitate income generation, development, adoption and evaluation of appropriate agricultural technologies. Hewitt de Alcantara(2001) opine that internet is important for networking among and between the key agricultural stakeholders in the Research-Extension-Farmers-Inputs-Linkage System (REFILS).

The Researcher-Extension-Farmers-Inputs-Linkage System (REFILS) is basically a strategy to bring together all the key stakeholders in agricultural development- researchers, extension agents, farmers, policymakers and the private sector for the effective management of research and extension delivery for sustainable development in Nigeria. Extension Communication is information exchange between and among various, agricultural stakeholders. For instance, farmer extension agents and research institutes, is an area in which internet can have significant impact, research scientists can relate directly with the farmers through the internet. Agricultural extension by its nature has an important role in promoting the adoption of new innovations. The trend from supply-driven extension to demand-driven extension requires a new approach, which opens the door for using Internet as a practical communication tool to address the needs and demands of rural population.



Umar (2005), contends that extension services recognized worldwide as a means by which most service-oriented organizations can speedily realize their set objectives, has not been accorded the priority attention it deserves. The failure of the various extension delivery approaches to effectively engineer significant and sustainable agricultural development in Nigeria has become a major concern to all agricultural stakeholders. Agricultural Research Institutes are being challenged to deliver research outputs that will improve agriculture in Nigeria.

Their mandates are to promote the agricultural and related sectors through research, technology development and technology transfer in order to: enhance the natural resource base and environment; sustain a competitive agricultural economy; provide new economic opportunities; ensure high quality and safe food/ food security; support an informed society on new agricultural technologies and modern farm practices and encourage the national growth and development of Nigerian Agricultural Sector. Going by the institute's objectives, with shortage of extension agents who facilitates adoption of new innovations in Nigeria, it is therefore paramount for the Agriculture Research Institutes to effectively utilize the potential of internet to enhance their activities in terms of information and communication dissemination.

Agricultural Research Institutes in Nigeria are facing challenges in the area of extension communication delivery due to a number of reasons among which shortage of extension workers in Nigeria and inappropriate channels for extension delivery. Extension workers are agents for communicating new agricultural innovation to farmers. They are being asked to deliver research outputs that will improve agricultural productivity, food security, in order to increase their countries competitiveness in global markets, and contribute to sustainable development. Therefore, this calls for need of agricultural research institutes to prioritize and strategize their responses in-terms of agricultural extension services. Consolata and Evans (2010) observe that internet offers opportunity to livestock farmers in Tanzania in-terms of accessibility to e-resources, information sharing and feedbacks. In the same vein, Kapange (200) reports that internet is crucial in facilitating extension communication and access to information for agricultural and rural development. In spite of many years of research, the agricultural research institutes in Nigeria have not been fully utilizing the internet particularly web based as information data base for the purpose of food security and agricultural extension delivery in Nigeria (Oduwale, 2004, Bonati and Gelb, 2005, World Bank, 2007). Researchers have proved the use of internet for economic development.

Salau and Saingbe (2008) opine that access to internet is crucial requirement for sustainable agricultural development. However, there were arguments on the use of internet for agricultural extension. Adeyanju, Haruna and Abubakar (2011) argue that researchers, extension agents and farmers are yet to take the advantage that the internet offers due to lack of connectivity and low computer literacy by some stakeholders.

Oduwale (2010) examines the impact of internet use on agricultural research institute work. His findings did not indicate that the internet is being used for agricultural extension communication. In spite of this, the internet can still enhance information exchange among the research institutes, extension agents and farmers. This underscores the need for research on the use of internet for agricultural extension communication, challenges of inappropriate use of internet channels and internet potentials for agricultural development in Nigeria. This study, therefore, seeks to find out the availability of internet facilities in the two selected agricultural research institutes and determine the extent of use of the facilities for agricultural extension purposes and the factors that militate against the effective use of internet for extension communication.

Objectives

The broad objective of the study was to examine the use of internet as a tool for agricultural communication extension between the selected members of staff of International Institute of Tropical Agriculture (IITA) and farmers in Ilbadan, Oyo State. The specific objectives therefore, were to:



1. Determine the benefits of internet among the selected Agricultural Research Institute members of staff and farmers.
2. Examine the level of utilization of internet facilities among the selected Agricultural Research Institute members staff and farmers.
3. Identify the challenges confronted in the efforts to effectively use the internet by the selected Agricultural Research Institute members of staff and Farmers.
4. To ascertain solutions to the factor identified against the use of internet for agricultural extension in the selected research institute.

Literature Review

Defining the concept of Development Communication

Development is all about the existence of human beings and man is a recipient of development. The term “development” means advancement in one’s life or society at large. It is adjudged as the total process of growth in social, political, economic and cultural aspect of the society. According to Amodu (2000), development is the process of positive social-economic change in the quality and level of human existence which is targeted at raising the standard of living, the quality of life and human dignity. For Anaeto and Anaeto(2010), development in general is a process of economic and social advancement which enables people to realise their potentials, build self-confidence and lead lives of dignity and fulfilment. Moreover, it is a process of setting people free from poverty, social justice, ignorance and economic sabotage.

In the same vein, Asemah and Adegoh (2013), sees development as a widely participatory process of social change in a society intended to bring about social and material advancement for the majority of people through their gaining greater control over their environment. Development is concerned with the quality of life which refers to opportunities and availability of social, health and educational concerns (Oso, 2002). Moreover, development is conceived as a multi-dimensional process involving major changes in social structures, popular attitudes and national and national institutions as well as the acceleration of economic growth, the reduction of inequality and the eradication of poverty. It is an improvement or growth achieved through some combination of social, economic and institutional processes that secure the means to live a better life as human beings or society by extension (Wanyeki, 2003). In writing about development, development must be of the people, by the people and for the people. It must permeate the entire spectrum and strata of society, touching on the lives of the rich, the poor, by lifting them about poverty, disease, human right abuses and depreciations.

Third world countries are beset with many problems that has to do with their social economic, political aspect of their lives. Therefore, knowledge and information are important for people to respond to the opportunities and challenges of the aforementioned factors. This cannot be achieved except they are communicated in order to become useful to the society. According to Akinyele (2003), a prime factor in fostering changed for development is the planned and systematic use of communication to help individuals, communities and societies to introduce accepted changes. This is what development communication entails. Development communication as well concerned with the planned use of communication resources use to pursue development goals. It is the use of communication to promote development. The term development communication was coined by Nora. C Quebral in 1972 and she defines Development communication as:

The art science of human communication applied to the speedy transformation of a country and mass of its people from a state of poverty to a more dynamic state of economic growth which make greater social equality and the larger fulfilment of the human potentials . Moemeka (2000) defines development communication as the application of the process of communication to the development process in other words, development communication is the use of the principles and practice of exchange of ideas to fulfil



development objectives. White (2000), sees development communication as the planned and systematic application of communication resources channels, approaches and strategies to support the goals of society economic, social political and cultural development of the people.

The development communicators set out with a specific purpose for communicating and its purpose is to advance development which usually in terms of raising the standard of living, reducing poverty, illiteracy, unemployment and societal inequality. The responsibilities of a development communicator is to inform and motivate people in the process of development.

Pragmatic: Pragmatism is a feature of development communication because it concerns with practical results. These results are determined by the specific behavioural objectives of the communicator. Also, it involves programmed writing that is line with the target goals. This programmed could be vocational training and its occasional evaluation. He/she must take a pragmatic view of the programmed by examining if the communication gained the attention of the receiver. More over the society must indicate a feedback as to the effectiveness or other wise of the programme.

Being a tool in the development paradigm, development communication is concerned with the use of communication apparatus and methodologies to spread knowledge, information, to contribute to behavioural change and ultimate development. It is a target communication for planned change which is intended to promote human development especially developing nations that are underdeveloped. It is also a planned communication paradigm to eradicate social inequality, poverty, unemployment and others. The purpose according to Moemeka (2000) is to advance development which is higher quality of life for all people. Notwithstanding, development communication is all about the dissemination of relevant information that increases people's stock of knowledge, change their attitudes and values to enable them undertake or participate in the process of development.

Finally, it is a communication that helps one to understand the need and social realities of the people and mobilize them towards developmental goals. Again, it seeks to mobilize the rural people for developmental actions by ensuring information flow among all those involve in the development programmes.

Internet as a tool for Development Communication

The advent of the internet has been one of the most exciting major events in the second half of the 20th century. The ancient dream of "a scholar knows all things happening in the world without venturing outdoors" has finally becomes a reality. Since 1993, the internet started to take off. At present, the internet has spread to more than 180 countries and regions, connecting more than 600,000 domestic networks of various types, hooking up more than 20 million computers available to 120 million users (2% of the entire global population) (The Chinese Defence Science and Technology Information Monthly Issue 121, 5th Issue, 1998).

Within the internet are the information treasures shared by all human civilizations. The reason why the internet seems all-powerful is because it has two characteristics no other mechanisms possess: first, the internet contains the biggest resource of information in the entire world; second, it enables people to obtain an interactive mechanism to instantly communicate with each other. Once connected to the internet, everyone can enjoy unparalleled richness of global information resources including, textual, audio, graphic information. The information on the internet is so rich that no one can tell what is really out there. Furthermore, the internet information resources are constantly expanding at a greater speed – one can only make a rough estimate. The types of information on the internet are also wide ranging, from scientific research, education, public policy, legal regulation to commerce, arts, entertainment etc, to include everything (Ibid). The internet contains information from the dirty to the holy-indeed a wide spectrum of information contents that touches every area of human interest.



For all those connected to the internet, they can quickly put onto it all they want announced or all they think others should know about. The internet not only has an inexhaustible amount of information as vast as the ocean, but also as its interactive mechanism- net to net, net to people and people to people communication- that makes the internet seem able to take on any task: entertainment, interpersonal exchanges, education, health and medicine, information gathering, securities and investment, trade and settlement of commercial goods, even online voting and others.

Of course, all these seemed ever so remote and unrealistic only yesterday. The exchange and sharing of information among all people have ushered in an omnipotent status in internet applications. As long as develop certain desires, the information to satisfy such desire will quickly and continuously appear on the internet.

With the knowledge, economy gradually ascending to a dominant status and the gradual formation of an information society, to characterize the internet as “omnipotent” may not be overstating the obvious.

The internet as a new global media tool is a fantastic instrument of discovery, which has opened a wide vista of attractive opportunities to humankind world over. It has made it possible for people from and at different geographical spaces to interact and exchange information at the speed of light. This is awesome. With its electronic mail facilities, the internet makes it possible for information and ideas to be exchanged between and among people at a mindboggling speed. With the provision of chat group facility as valued added service to using electronic mail, two people – thrown apart by distance, can on the spot be talking, exchanging and receiving ideas and information at the same time. This has contributed a lot to speedy communication and information among the peoples of the world.

The internet could almost be described as one of the wonders of the 21st Century. This is partly because apart from information sharing, the internet contains tons and tons of snippets of information, almost as the ocean contains waters. Though this information swings from the dirty to the holy, from serious to ludicrous materials and from entertainment to academic papers, the fact remains that, humankind is exposed to almost a scenario of exposure to endless breathless information at the speed of light. For instance, in preparing this book, we had to make use of some materials sourced from the net. Of course, we had to ferment and localize such pieces of information to suit this project, but we have been greatly helped by the internet.

With the internet, different societies have been merged into one cultural bloc or entity. Today, you can have a friend, pen pal, business partner in a remote city sited at an extreme position on the globe and still be able to interact on a daily basis if you like. Although the internet is heavily pregnant of different cultures battling for dominance and significance, it has however been hijacked by Western nations or developed economies whose economic might and strategic technological advantages make it easier for their overriding omnipresence in the net. This is why a developing nation like Nigeria must invest heavily on technology and join smart nations in making its presence, alongside its cultural uniqueness and content, felt on the net.

Theoretical Framework

This study discussed the following relevant theories:

1. Development Media Theory
2. Participatory Model of Development

Development Media Theory

The development theory was propounded by Dennis MacQuail in 1987. The assumption of the development theory is that the media have a role to play in facilitating the process of development in the developing countries. The theory indicated that the media can positively influence the development process especially in the rural areas. The theorists is of the opinion that the duty of development communicators are to



disseminate messages of development to the rural dwellers who are majorly illiterates and ignorant of development information and paradigms.

Thus, the development media theory advocates mass media support for the developmental goals of the developing nations. The theorist observed that the third world countries, government and mass media should work in concert to development and the media should encourage the planned beneficial development of a country (Adepoju, 1999). The theory contended that until a country recognises the activities of the media as a catalyst to developmental programmes, there can never be rapid development drive in such nation. The media according to the view of the theory, are to provide information content to accelerate reasonable development that will cut across social and cultural spheres of a country. In conclusion, the concept of development theory gave a strong nod to the practice of development journalism and development communication for the purpose of development. The theory established the need for progress, eradication of poverty, improved standard of living, support the obliteration drive of ignorant particularly among the rural dwellers in the developing nations. The study re-echoes the important media family to facilitate development plans, programmes and execution of such programmes for the developing nation progress.

Participatory Model of Development

Participatory Model of development is meant for the development of the developing nations. This model viewed that the key to sustainable development is mainly participation. The model was proposed by scholars like Paulo Heire and Baolo Augusto among others. They opined that, for the development to take place, the media and the people concerned must actively participate in the process. Participation is necessary in order to share information, knowledge, trust, commitment and a right attitude in planning and implementing development programmes (Anaeto, Onabanjo & Osileso (2008). While other models and theories believed that development must come from the top to the bottom, the participatory model places emphasis on the people evolving that will bring development for their own society.

The model places its highest importance not on transmission of knowledge from outside but rather on reliance upon local knowledge and capability. Rather than implementing development through external forces, participatory model encourage to formulate programmes and plans through the rural dwellers development initiatives. In order to achieve this lofty principle, there must be education and conscientisation of the people. The model is aimed at creating critical awareness and consciousness among the rural dwellers. Conclusively, the model highlights the nature and role of communication and the media in the development process The relevant of the model to the study is that the model pinpointed that development should not come from the top always as analysed by virtually all the theories of communication but should start from the bottom of the ladder. According to the model, this will give the rural dwellers to be in participation of the developmental process.

Methodology

This study adopted descriptive survey and structured interview methods. Questionnaire and interview guide were utilized for gathering data for the study. Simple random and purposive sampling techniques were employed to select samples from the population. Sample size of 92 were drawn from the universe population of 120. 50 mechanized farmers who have business relationship with the selected research institute and 70 members of staff of the selected agricultural extension institute totalling 120. Descriptive statistics was used with the statistical tools of tables, percentages, frequencies and value tables for the analysis of data collected through the questionnaire. Descriptive statistics according to Tejumaye (2003), provides the mathematical method for organizing, summarizing and analysing data that have been collected and measured. The total number of questionnaire distributed was hundred (120) while ninety two (92) questionnaires- 65 members of



staff of the selected agricultural Research Institute and 27 mechanized farmers that have strong relationship with the research institute)- were fully filled, returned and validated for final analysis. This indicates a response rate of ninety two percent (92%) return rate. However, responses obtained from the structured interview were transcribed from the recorded tape and qualitative analysis carried out in line with the research questions.

Table 1: Distributions of Respondents by Occupation

Value Table	Value	Frequency	Percentage
IITA Members of Staff	1	65	71.0%
Farmers	2	27	29.3%
		92	100%

Source: Field survey, 2022

The above table indicates that 25 respondents are Agriculture experts with 27.1%, 22 are Internet Operators (24.0%), 15 IT Students with 16.3%, 10 Researchers with 11.0%, 5 respondents were Farmers with 22.0% while others were 0.0%

Table 2: Analysis of opinions on the benefits of internet by the selected Agricultural Research Institutes and farmers

Value Table	Value	Frequency	Percentage
It helps dissemination of Information	1	25	27.1%
It enhances Researches on agriculture	2	20	22.0%
It promotes Agriculture Education	3	20	21.0%
It exposes the stakeholders to innovation and new areas to be explored in agriculture	4	17	18.4%
		92	100%

Source: Field Survey, 2022

Table 2 indicates that 25 respondents with 27.1% said that internet facilitate information dissemination among Agricultural Institute Researchers and farmers, 20 respondents with 21.0% agreed that the internet enhances research on agriculture, 20 respondents with 22.0% were of the opinion that internet boost agriculture education while 17 respondents with 18.4% concluded that internet exposes stakeholders to innovation and new areas to be explored in agriculture.

Table 3: Analysis of the respondents' opinions concerning the level of internet usage between the selected Research Institute members of staff and farmers.

Value Table	Value	Frequency	Percentage
Very high	1	50	54.3%
High	2	28	30.4%
Average	3	10	11.0%
Fair	4	4	8.0%
Undecided	5	0	-
		92	100%

Source: Field survey, 2022

Table 3 above proves that 50 respondents with 54.3% agreed that the level of the usage of internet was very high and this helps the selected Agricultural Research Institute and farmers to have free-flow information



dissemination, 28 respondents with 30.4% stated that the level was high, 10 respondents with 11.0% affirmed that the level of usage was average while 4 respondents with 8.0% ticked fair.

Table 4: Analysis of the Respondents highlighting the challenges that are debarring the effective use of internet among the selected Agricultural Research Institute members of staff and farmers.

Value Table	Value	Frequency	Percentage
Lack of Funding	1	31	34.0%
Lack of Technical Experts	2	20	22.0%
Problems of Accessibility	3	15	16.3%
Lack of Training Facilities	4	14	15.2%
Infrastructural problems	5	12	13.0%
		92	100%

Source: Field survey, 2022

Table 4 reveals that 31 Respondents with 34.0% said lack of funding is one of the major constraints debarring the effective use of internet, 20 Respondents with 22.0% were of the opinion that lack of technical experts negatively affect the effective use of internet, 15 Respondents with 16.3% agreed that problems of accessibility is another key constraints, 14 Respondents with 15.2% said lack of training facilities while 12 Respondents with 13.0% unanimously agreed that infrastructural problems hindered the effective use of internet in the selected Agricultural Research Institutes and farmers.

Table 5: Analysis of the Respondents ideas of the solutions to the problems confronted by the selected Agricultural Research Institute members of staff and farmers

Value Table	Value	Frequency	Percentage
Provision of loans via government	1	32	35.0%
Availability of essential infrastructure	2	25	27.2%
Involvement of stakeholders	3	13	14.1%
Human Development	4	12	13.0%
Hiring of technical personnel	5	10	11.0%
		92	100%

Source: Field Survey, 2022

Table 5 shows 32 Respondents with 35.0% unanimously agreed that provision of loan via government will help the selected Agricultural Research Institute and farmers to acquire internet facilities. 25 Respondents with 27.2% agreed that availability of essential infrastructure for the selected Research institute's projects and programmes, 13 Respondents with 14.1% suggested the involvement of stakeholders in the affairs of the selected Agricultural Research Institute and farmers, 12 Respondents with 13.0% established that Human development in terms of capacity building training would enhance internet usage while 10 Respondents with 11.0% submitted that hiring of technical personnel for the selected Research Institutes members of staff and farmers would help them a lot in learning the usage of internet facilities.

Discussion of Findings

Question One: Does the internet usage benefits the selected Agricultural Research Institute members of staff and farmers?

With the data gathered majority of the Respondents accepted that the selected Agricultural Research Institutes and farmers benefited from the functional internet facilities. The first part of the questionnaire



shows that 94.5% of the respondents are familiar with the internet facilities while 100% of the respondents agreed that Agricultural Research Institutes need and functional internet facilities and that the said population have personal access to the internet and its devices. Table 9 of the analysis indicates that 92.3% of the Respondents ticked “Yes” to the relevant of the internet facilities to the Agricultural Research Institutes in Nigeria 8.0% were the minority. Theoretically, the Diffusion and Technological Determinism theory corroborates with the above fact that internet remains the viable communication technology that is capable to transfer technological innovations from development agencies to their clients so as to create an appetite for change through raising a climate for modernization among members of the public. The theory validates the magical influence of internet by establishing that the society is influenced and shaped by the use of internet for technological development. Flew (2008) corroborate with this fact when he describes internet as the phenomenon that brought about remarkable changes in the way and manner information is gathered. Nora and Quebra (1992), submits that internet is important for networking among and between the key agricultural stakeholders in the Research- Extension-Farmers-Inputs-Linkage System-(REFILS) which is basically a strategy to bring together all key stakeholders in agricultural development.

Question Two: What is the level of internet utilization for Agricultural Extension among the Agricultural Research Institutes?

According to Table 10, 76.0% respondents agreed with high level of internet which utilization for the Agricultural extension. They were of the opinion that internet is fully in need for agriculture extension development. Table 11 also indicated that 76.0% of the population unanimously concurred and strongly agreed that there is high internet utilization in the agriculture extension. Table 8 shows the expressions of the respondents over the impact of internet; some said it helps the dissemination of information (27.1%), it enhances research (22.0%), it helps agriculture education (33.0%), it expands the institute’s employability (18.4%). Chiyamwaka (2013), affirms that internet expansion improves interactive platforms, allows more programme contents, improves contents that suit the needs of the audiences and high level of production. Gbam (2017), observes that the “global village” that the internet technology has produced has been adopted by every area of production because of the positive changes and development.

Research question 3: What are the challenges confronting the effective use of internet by the selected Agricultural Research Institute and farmers?

According to Table 4, Respondents highlighted those constraints militating against the effective usage of internet in Agricultural Research Institutes. These are; lack of funding (45%), lack of technical experts (16.3%), problems of accessibility (11.0%), lack of training facilities (15.21%), infrastructural problems (13.0%). Ihechu and Uche (2012), contend that Nigeria is bound to face challenges in the usage of internet resulting from the low level of the nation’s technological development. Ayankojo (2002), notes that researchers, extension agents and farmers are yet to take the advantage that the internet offers due to lack of connectivity and low computer literacy by some stakeholders. Foley (2006), explains that when the new technological innovation is introduced, there will be a series of challenging stages before they are generally adopted. Nwokoye (2003), states that since the internet is overwhelmingly a culture of the English, other linguistics societies find it difficult to have a voice on the net. Although the dominant international languages of this world are fast gaining ascendancy on the internet, many linguistic societies do not have a “Finger hold” on any space on the net.

Research question 4: What are the solutions to the factors identified against the use of internet for Agricultural extension in Southwest Nigeria?

Table 5 shows respondents’ proffering solutions to the constraints identified as militating against the effective use of internet by the selected Agricultural Research Institute and farmers. The solutions are as follows;



provision of fund by government (38.0%), organising training for their staff members (16.3%), availability of infrastructure (27.17%), employment of technical experts (11.0%), involvement of IT and agricultural stakeholders (14.3%) and Human development (13.0%). Owuamalam (2008), avers that the internet's capability of distributing information usable for project programmes is awe-inspiring especially in the areas of production. Wilson (2000), contends that farmers and extension institute should be aware and knowledgeable of ICT significant role and utilize it effectively in obtaining their information needs. Udoakah (2000), posits that in the 21st century, information dissemination and retrieval depend largely on the ability of one access and the ability to utilize the internet effectively through the use of various technological means. Anaeto (2008), opines that internet can still enhance information exchange among the research institutes, extension agents and farmers. This underscores the need for research on the use of internet for agricultural extension. Dooley(2005), affirms that the needs in today's organizational and institutional pattern to save time, cost and minimize the process of organizing and coordinating our day-to-day activities is the use of functional internet for information and communication.

Conclusion and Recommendations

This study examined the importance of internet on the selected Nigerian Agricultural Research Institute members of staff and Farmers. It concluded that the majority of the respondents accepted that the agricultural research institute members of staff have functional internet facilities and also familiar with them for agricultural extension. The study indicated that 94.5% of the research institute members of staff and farmers are familiar with the internet facilities. Concerning the utilization of the internet by the selected farmers and the agricultural Research Institute workers, 76.0% of the respondents agreed with the high-level usage of internet by the selected Agricultural Research Institute workers and farmers.

Regarding the challenges confronted by the selected Agricultural Research Institute members of staff and farmers, the study identified lack of funding, lack of technical experts, government ineptitude, lack of training facilities and infrastructural problems.

Based on the findings from the study, the following recommendations were made;

1. Government should provide adequate funding for the internet installation and maintenance in the selected Agricultural Research institutes.
2. Technically, government should employ internet experts who would be organising training at interval for the nation's Agricultural Extension and Research Institutes.
3. Relevant facilities should be made available for the enhancement of internet use among various Agricultural Research Institutes and farmers.

References

- Adeniyi, O. (2009). *Digital Broadcasting: Migrating, Implication and Challenges for Nigeria*. Retrieved from <http://www.technologytime.com/post/digital-broadcasting-migration-implications-and-challenges-for-Nigeria>
- Adepoju, T. (1999). *Communication Theories*. An unpublished Book.
- Aina, S. (2003). Mass media and rural/community development: In oso (ed) *community media: voice of the oppressed* pp 95-112. Abeokuta: Jeddidah Publishers.
- Akinyele, L. (2003), Indigenous Knowledge System, Communication and Sustainable Development. In Soola E.O (ed) *Communication for development purposes* pp. 61-71. Ibadan: Kraft Book Publishers.
- Alozie, V. (2009). Development Communication: Current issues and Trends. Owerri: Pelvic Communication.
- Anaeto, S G, Onabanjo, O.S & Osifeso, J.B (2008). *Models and theories of communication*. Maryland: African Renaissance Books Incorporated.
- Anaeto, S.G (2008). *Rural community newspapers, principles and practice*. Lagos: Jamiro press link.
- Anaeto, S & Anaeto, M. (2010). *Development Communication: Principles and Practice*. Ibadan: Sterling-Holden Publishers.
- Ayankojo, O (2002). *Marketing social exchange: A social marketing perspective to development* pp 213-228. Abeokuta: Jeddidah publishers.
- Baran (2002). *Introduction to mass communication: mass literary and culture, 2nd edition*. New York: Mc Graw Hill Companies: inc.
- De Fleur, M.L and Lasen, O.W. (1958). *The flow of information*. N V Harper and Brothers.
- Dooley, H. (2005). *What will be: How the new world of information will change our lives*. San Francisco: Harper Edge.
- Flew, T. (2008). *New media: An introduction*. 3rd edition. South Melbourne: Oxford University Press Broadcasting in Nigeria.
- Foley, K. (2006). *Leap frogging the industrial revolution*. In Michael Trader (eds.). *The myth of the information revolution: Social and Ethical Implication of Communication Technology*. London: Sage



TIMBOU-AFRICA ACADEMIC PUBLICATIONS
AUGUST, 2023 EDITIONS, INTERNATIONAL JOURNAL OF:
AFRICAN SUSTAINABLE DEV. RESEARCH VOL.14

- Gbam, B.N. (2017). The challenges and prospects of the new media in public service Broadcasting in Nigeria. *European Centre for Research, Training and Development*, Vol.5(3): 1-7.
- Hewitt de alcantara, C. (2001). The development divide in digital age. Geneva: Issue Paper by United Nations Research Institute for Social Development
- Ihechu, I. & Uche, U. (2012). Challenges of Digitalization of Broadcasting in Nigeria. *International Journal of Information and Communication Engineering*. Vol.7, No. 10.
- Moemeka, A (2000). *Communication for development: A new pan-disciplinary perspectives* New York: University of New York University Press Ltd.
- Nwabueze, C. (2007). Mass media and Community Mobilization for Development: An Analytical Approach. *International Journal of Communication*. No. 2.
- Nwokoye, D.C (2003). *Technology and Modern Communication System*. In V.I.E Ajiwe (eds.). Onitsha: Jet Publishers.
- Ogunbiyi, D.O (1996). *Community development: Principles and Practice*. Ijebu-Ode: Opeyemi press.
- Oso, L. (2002). Radio for Community Development. In Oso, L (eds.) *Communication and Development*. Abeokuta: Jeddiah Publishers.
- Owuamalam, E. (2008). *Elements of Broadcasting*. Owerri: Top Class Publishers.
- Popoola, S.O (2012). *Research Methodologies in Library and Information Science*. Ibadan: University of Ibadan Press.
- Roger, E.M (1976) (ed). *Communication and development: Critical perspectives*. California: Sage publications.
- Severin, W.I and Tankard, J.W. (Jr.) (1987). *Communication Theories: origin, methods uses*. New York: Hasting House.
- Siebert, F. (1956). *Four theories of the press*. Illinois: University of Illinois press.
- Udoakah, N. (1998). *Development Communication*. Ibadan: Stirling-Hordens Publishers Limited.
- Wanyeki, L.M (2000). *The Development of Community Media in East and Southern Africa*. In Bofo, S.T Kwame (eds.).
- White, R. (2000). Communication creates community: The role of community-oriented media. In Melkore, S.R and Rao, S (eds.) *Critical Issues in Communication: Looking inwards for answers*. New Delhi: Sage Publication.
- Wilson, D. (2005). *New perspectives in applied communication*. Ibadan: Stirling- Horden Publishers.
- Ugande, G.B. (2005). *Fundamentals of rural and foreign broadcasting*. Makurdi: Culture Media Nigeria Ltd.