

INFORMATION SERVICE PROVISION FOR AGRICULTURAL PRODUCTIVITY AND POVERTY ALLEVIATION IN NIGERIA

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Abstract

Poverty, a global issue that is complex and multi-dimensional is one of the most dangerous social menaces ravaging mankind. The quality of life one lives is greatly tied to whether he is poor or not, as such, government at all levels in Nigeria have on various occasions attempted to roll out programmes that can alleviate poverty. Despite these attempts, the scourge seems unbolting most especially among farmers as a result of information gaps on the best agricultural practices that can guarantee their increased productivity and reduced poverty level. Some strategies have been adopted in parts of Africa to help in addressing the information needs of farmers. This study emphasized the role of ICT-an information dissemination channel- in addressing these information needs of farmers. The study pointed out that LINKS - a livestock information network and knowledge system – was established as a sub-project within the global livestock collaborative research support program for farmers in Ethiopia, Kenya and Tanzania. In Nigeria, cassava growers receive market information through a new initiative called the Integrated Cassava Project. It was recommended among others that federal government should fulfill her responsibility by guaranteeing the security of all parts of the country so that the barrier to the dissemination of novel agricultural technologies to farmers in terms the services of extension workers will be removed.

Keywords: Information Service Provision, Agricultural Productivity, ICT and Poverty Alleviation.

Introduction

Information has received a wide acceptance as an essential resource to national development. It has been described as a stimulating creativity, resulting in new outcomes and processes. The proper identification and use of information sources are prerequisites for objective decision making. Consequently, the provision of awareness and use of appropriate

information guarantee individual and organizational functioning. Ayanyemi (2006) referred to information as an essential resource for individual growth and survival. The major function of information is to increase the knowledge of the user, to reduce his level of uncertainty or reduce the varieties of choices available to the users of information. For information to be effective, it must be accurate, timely and relevant.

As it relates to agricultural productivity, Tadesse (2008) defined agricultural information as the various sets of information and messages that are relevant to agricultural production activities of farmers such as crop production and protection, animal production and management, and natural resource production and conservation. Similarly, Ekoja (2000) defined agricultural information as published and unpublished knowledge on all aspects of agriculture which are interdisciplinary in nature and have universal application. Information plays a fundamental role in supporting agricultural development. Farmers irrespective of their categories – the subsistence or small scale farmers, medium scale farmers and the large scale commercial farmers all need information about new developments in the agricultural sector for higher productivity, improved standard of living and poverty alleviation.

Poverty, a global phenomenon that is complex and multi-dimensional is not easy to define. Each region of the world has different yardsticks for measuring the level of poverty based on people's ability to have access to basic things of life namely: food, clothing and shelter. However, it is pertinent to note that despite different yardsticks and indices of measuring poverty from region to region all over the world, the fact still remains that the meaning of poverty still tends towards lack and below average and poor standard of living. Narsir (2002) defined poverty as a concept that entails socio-economic and political deprivation which may affect individuals'

households, or communities and which may result in lack of access to the basic necessities of life. The World Bank Report (1990) sees poverty as hunger, lack of shelter, being sick and not being able to go to school, not knowing how to read, not being able to speak properly, not having a job, having fear for the future, losing a child to illness brought about by unclean water, powerlessness, lack of representation and freedom. Thus, poverty alleviation can be seen as any process that reduces income fluctuation between poor and non-poor scenarios. This is one of the sustainable development goals set by the United Nations.

Achieving the Sustainable Development Goals (SDGs) of eradicating extreme poverty for all people everywhere by 2030 will depend largely on increasing agricultural productivity, which remains perhaps the single most important determinant of economic growth and poverty alleviation among developing countries like Nigeria. This is achievable through programmes. Poverty alleviation refers to all the methods, ways or techniques adopted by government, non-governmental organizations or wealthy individuals to reduce or eradicate poverty from a collectivity (Oviasuyi, 2020). Poverty alleviation is best approached as an exercise in raising people's capabilities or enhancing freedoms. The corollary of this approach to development is empowerment, which is, helping people in poverty to acquire the tools they need to meet their basic needs as the long-term solution to poverty. A major element of poverty reduction strategy is to reduce the isolation of poor communities through strengthening primary socio-economic sources of income such as agriculture. This is so because grossly underdeveloped and inefficient ways of agriculture have contributed to the deplorable poverty situation in the country especially in the rural communities.

Poverty level can be said to have fallen rapidly over the past 40 years, though at different rates, around the world. Some countries in Asia (particularly China, India and the Asian Tigers) have achieved the most rapid poverty reduction. In contrast as earlier highlighted above, little success has been achieved in sub-Saharan Africa, especially Nigeria, where a number of people live on less than a dollar per day (World Bank, 2004). Rates of poverty reduction have historically been very closely related to agricultural performance – particularly to the rate of growth of agricultural productivity. In simple terms, this indicates that as a country increases her agricultural productivity, the greater her chance of achieving significant reductions in poverty. Despite decades of investment in new agricultural technology and rural development, the plague of hunger and poverty has also continued. The problem is particularly severe where people depend on nature-fed agriculture where the impact of new technologies have been less apparent and agricultural productivities have generally stagnated and even fallen in some areas. This goes without saying that the improvement of agricultural productivities through programmes leads to a positive impact of the economy by indirectly reducing the poverty level of Nigeria. Thus, if agricultural programmes that target the improvement of agricultural productivity are developed are developed, their effective dissemination is paramount to achieving their stated objectives. However, agricultural programs that target the improvement of agricultural productivity have continued to be ineffectively disseminated. It is against this background that this paper seeks to find out the information service provision, agricultural productivities and poverty alleviation in Nigeria.

The Nexus between Information Service Provision for Agricultural Productivity and Poverty alleviation

In Africa, agriculture provides a livelihood for most of the 75 percent of the people who live in rural areas (Asenso-Okyere & Mekonnen, 2012). Unfortunately, the rural areas in Africa have the largest concentration of poverty and food insecurity. One of the causes of the low incomes in rural Africa is the low productivity of agriculture. Therefore, any attempt to reduce poverty should pay particular attention to transforming the agricultural sector, especially sustained improvement of land and labor productivity in the sector, facilitated by remunerative markets. Lack of technological and market information has been given as the major reason for the low productivity in African agriculture.

Knowledge and information have become the major drivers of social and economic transformation in the world. Knowledge and information are now as important, if not the most important factors in development, and this trend is set to intensify. Effective Agricultural information dissemination can play a critical role in the transformation process to transfer technology, support learning, assist farmers in problem-solving, and enable farmers to become more actively embedded in the agricultural knowledge and information system (Christoplos & Kidd, 2000). However, many farmers have complained about the unavailability of effective channels of information dissemination in their locality for consultation or building their knowledge on modern agricultural practices for high productivity.

One promising area of agricultural information dissemination to reach large number of farmers is using information communication technologies (ICTs): mobile telephony, innovative community radio and television programs, mobile phones in combination with radio, video shows, information kiosks, web portals, rural tele-centers, farmer call centers, video-conference, offline multimedia CDs, open distance learning, etc. ICT-based agricultural extension brings

incredible opportunities and has the potential of enabling the empowerment of farming communities. With the availability of ICTs the proposition for an increasing number of extension staff may no longer be wholly valid. Moreover, the use of ICTs to improve information flow and to connect people within the rural areas has proved that illiteracy of farming communities may no longer be an excuse to deny access of farmers to some form of agricultural information.

The social systems and/or networks in Nigeria also aid in the dissemination of information. The availability of a few mobile phones to start with can quickly spread a message from an authentic source to clan members, solidarity association members, and other members of the community. Mobile telephony in combination with radio enables messages to be given to a large number of listeners.

The contribution of information and knowledge in bringing about social and economic development has been well recognized globally. In agriculture, availability of markets and market information gives farmers the potential to bargain and improve their incomes, to seize market opportunities through the adjustment of production plans and better allocation of production factors, and also to use the information to make choices about marketing. These market information help boost the selling price of farmer's produce which can directly improve their generated income and in the long run improve their standard of living.

In Nigeria, cassava growers receive market information through a new initiative called the Integrated Cassava Project. Based on mobile phones and Internet and online marketplace Trade Net Africa, the project aims to disseminate market information using the Agro-Business Information Points (market information centers) and trade agents. These services include prices,

demand volumes and offers, trade assistance, training, SMS Alerts, and technical messages (Pyramid Research, 2010).

The livelihood of a vast majority of people in East Africa is highly dependent on income from livestock and livestock products. Therefore, the development of reliable and timely livestock market information is vital for the development of the countries in the region and provides a basis for livestock producers and traders to make informed marketing decisions. In this context, LINKS - a livestock information network and knowledge system – was established as a sub-project within the global livestock collaborative research support program. LINKS implemented by Texas A&M University provides regular livestock prices and volume information on most of the major livestock markets in east Africa, namely Ethiopia, Kenya and Tanzania along with information on forage conditions, disease outbreak, conflict and water supply to support decision making at multiple scales. The system provides near real time market information which is available on request via SMS text message system, email, WorldSpace radio systems and on the internet (LMIS, 2011).

Agricultural information contributes significantly to agricultural production. Through agricultural information farmers can adopt new technologies or farming systems, know when to plant and harvest, which crop to produce and which animal to rear and where to sell. It is also through agricultural information that farmers can know where to acquire bank loans and other farming inputs, as well as how to control pests and diseases. Such information will consequently increase agricultural production and improve the standard of living of farmers

Productivity growth as a result of effective information provision services can catalyze a wide range of direct and indirect effects that mediate the pathways to poverty alleviation (Thirtle

et al., 2003). Several studies provide evidence for the poverty reducing potential of agricultural productivity growth in staple crops. In Ethiopia, Diao and Pratt (2007) find that growth in staple crop productivity has greater potential for poverty reduction than any other agricultural or nonagricultural sector in their model. Minten and Barrett (2008) find similar evidence in Madagascar with regard to rice, which is largely non-tradable due to high marketing and transport costs

Schneider and Gugerty (2011) studied the linkages between increases in agricultural productivity and poverty reduction. The salient evidence in their work suggests that there are multiple pathways through which increases in agricultural productivity can reduce poverty, including real income changes, employment generation, rural non-farm multiplier effects, and food prices effects. They further posited that barriers to technology adoption, initial asset endowments, and constraints to market access may all inhibit the ability of the poorest to participate in the gains from agricultural productivity growth. Dhrifi (2014) specified two research questions concerning the importance and magnitude of agricultural productivity on poverty alleviation and the relationship among technological innovation, agriculture productivity and poverty. Using an aggregate annual panel data on a sample composed of 32 Sub-Saharan Africa countries from 1990-2011. The study estimated a simultaneous equation model that captures the interrelationship among agriculture productivity, technological innovation and poverty. The findings indicate that agricultural growth contributes significantly to poverty alleviation in SSA. The study results suggest that agricultural growth would lead to a 32% decrease in poverty: this effect is divided on a direct impact of 0.98% and an indirect impact via economic growth equal to 0.22% as a result of the available agricultural information on modern

agricultural practices. The study similarly illustrates that 1 % change in technological innovation leads to a decrease in poverty rate by 0.18 %.

In the same manner, Lin, McKenzie, Piesse and Thirtle (2004) looked at the empirical relationships among agricultural productivity growth, poverty reduction, nutritional improvement, inequality and GDP per capita growth in some detail controlled by agricultural information provision. They found out that the empirical estimates of the relationship between labour productivity in agriculture and poverty reduction appears to be particularly robust. For all the specifications of the model and for all the different samples, labour productivity in agriculture is found to be a powerful and always significant cause of poverty reduction. These results confirm the predominant view in the literature surveyed in Thirtle et al., (2001), that agricultural productivity growth can be expected to have an impact on poverty. Devkota and Upadyay (2013), provides for the first time a clear quantitative link between agricultural productivity and poverty among rural households in Nepal Using data from a nationwide Nepal Living Standard Survey 2004, they first estimate household-specific productivity per worker under both Cobb–Douglas and translog production functions. Second, the paper identifies the determinants of productivity. Third, they explore a theoretical link between productivity and poverty using Sen's poverty index and find empirically that productivity growth substantially helps poverty reduction.

Overview of the Information Needs of Nigerian Farmers

Information needs could be seen as a demand, requirement, want or desire. Yusuf cited in Taylor (2012) defines information need as the extent to which information is required to solve problems. It is also a degree used to express satisfaction and dissatisfaction with the information.

Arora (2014) posits that, information need is a state or process when one perceived that there is a gap between the information and knowledge available to solve a problem and the actual solution of the problem.

Over the years, deliberate though ineffective efforts have been made by donors and African countries to bring about agricultural development without much to show for it. Much of the failure can be attributed to the treatment of information delivery by stakeholders responsible for the dissemination of agricultural information most especially the government (World Bank Report cited in Bello, 2020). Agricultural information although has not always been integrated with other development programmes to address the numerous challenges that face farmers is an essential ingredient in agricultural development programmes but Nigerian farmers seldom feel the impact of agricultural innovations either because they have no access to such vital information or because it is poorly disseminated. Aboyade (1987) points out that, the information provided is exclusively focused on policy makers, researchers, and those who manage policy decisions with scant attention paid to the information needs of the targeted farmers of the policy decisions. Similarly, Aina (1989) stated that the non provision of agricultural information is a key factor that has greatly limited agricultural development in developing countries like Nigeria.

Although the above backdrop, no one can categorically claim to know all the information needs of farmers especially in an information dependent sector like agriculture where there are new and complex problems facing farmers every day. However, Gregorio and Sison (1989) are of the opinion that it is dangerous to make such a statement as the agricultural information needs of farmers differ within a country as between countries. It is however safe to assert that the agricultural information needs of Nigerian farmers revolve around the resolution of such

problems as pests hazards, weed control, water-moisture insufficiency, soil fertility, farm credit, labour shortage, soil erosion, climate change and so forth

Ozowa (1995) grouped the information needs of farmers into five headings; agricultural inputs, extension education, agricultural technology, agricultural credit and marketing. Most of this information needs influence the upkeep of farm animals and crops. Modern inputs are needed to raise low level of productivity for poverty alleviation. These inputs may include fertilizers, improved variety of seeds and seedlings, feeds and weed and pest control chemicals. Since the inputs are modern, without proper information delivery, their usage may not lead to the desired goal of attaining increased yield. Farmers who decide to cultivate hybrid maize for example may require proper information such as suitable soil, choice of fertilizer, weather condition for planting, ways of dealing with pests and diseases, when to harvest and so on. An examination of the factors that influence the adoption and continued use of this farm input will show that information availability and dissemination is a very important factor

Information Sources used by Nigerian Farmers

Information sources are various means by which information is recorded for use by an individual and organization. Farmers' information sources are the central elements of advanced farming activities as well as the fundamental and essential promoter of agricultural productivity for poverty alleviation. Sani, Boadi, Kalusopa and Oladokun (2014) stated that information sources can be distinguished by form of representation - textual (books, journals, manuscripts), graphic (graphs, diagrams, plans, charts), and audio visual (sound recordings, motion pictures, slides). Several scholars have conducted research on the information sources used by small scale farmers to meet their information needs.

Opara (2008) highlights that the most significant sources of information used by farmers include farm demonstrations/agricultural shows, television, fellow farmer, contact farmers and extension agents. Opera further stated that the later are the most preferred sources. Similarly, scholars (Buba, 2003; Ogboma, 2010; Meitei and Devi, 2009; Mtega and Benard, 2013) have acknowledged that farmers used different information sources to meet their information needs, which include newspapers, journals, bulletins, community leaders, farmer's group among others.

Daudu, Chado and Igbashal (2009) investigated the agricultural information sources utilize by farmers in Benue State, Nigeria. The study reveals that farmers source their information from radio, libraries, friends and extension workers. Similarly, Lwogo, Stilwel and Ngulube (2014) examine the information needs of small-holder farmers in Tanzania. The study shows that the farmers largely source their information from friends/neighbors, follow by extension workers, agricultural input suppliers, and then family/parents. Other information sources are farmer groups, personal experience, village leaders, Non-Governmental Organizations, district officials, village meetings, middlemen, and farmer cooperatives. Lwogo *et al.* (2014) further pointed out that the farmers made little use of other knowledgeable farmers, printed materials (that is, books, newsletters, leaflets, posters), and television.

Challenges associated with Information Service for Agricultural Productivities and Poverty Alleviation in Nigeria

Agriculture in Nigeria is bewildered by a lot of challenges that currently causing barriers to increased productivity that can guarantee poverty alleviation. Some of these challenges have been highlighted below.

Worsening insecurity: apart from the impact of Boko Haram in the North East which has displaced thousands of agrarian communities, farming activities in the middle belt and other parts of the country have also been facing threats due to the spread and escalation of insecurity issues across Nigeria. Tadese (2008) observed that many agricultural extension workers that are responsible for the dissemination of information to the rural farmers find it difficult to carry out their duties as a result of escalatory insecurity in several parts of Nigeria and other factors, namely:

Illiteracy: One of the challenges faced by the rural farmers is the low level of literacy. Most of our farmers could not read and write, they find it difficult to access information through ICT facilities like radio, television, smart phones, video show etc. in order to build their knowledge on modern agricultural practices for high productivity.

Lack of fund: insufficient financial support of farmers in the area of availability of ICT facilities for them to have access to regular and accurate information about the present day farming knowledge to boost agricultural productivity. Christopher and Kidd (2010) posit that many farmers have complained about the unavailability of effective channels of information dissemination in their locality for proper training and build their knowledge about the new way of farming for bomber harvest.

Language barrier: Majority of our rural farmers do not hear English language. Most of the information services rendered to the farmers were through English language, making it difficult for them to build knowledge about the modern way of farming for high productivity.

Government policy on agriculture in the area of information services: the policy of the government is paramount in ensuring the expansion of the agricultural sector in the country. It is the responsibility of the government to establish information dissemination strategies for the growth of agriculture in the country. The issue is that, most of the government policies on our economy especially on agriculture have not been implemented.

Recommendation

1. This study recommends that federal government should fulfill her responsibility by taking care of lives and property of the local farmers and guarantee the security of all parts of the country so that the barrier to the dissemination of novel agricultural technologies in terms of the services of extension workers will be removed. New security organizations should be established and deployed to the rural areas to compliment the already existing ones and also the old ones too should be effectively mobilized in order to motivate their commitment to safeguarding the localities inhabited by most Nigeria farmers.

2. Secondly, free adult education should be encouraged and built around areas so that the rural farmers can learn how to read and write in order to effectively assimilate new agricultural practices.

3. Thirdly, programs on financial support for farmers should be embarked on by the federal, state and local government, philanthropists and non-governmental organization should be initiated in order to build farmers video show center in the rural areas for easy access for information services. For example the effort by NIRSAL PLC should be strengthened by the federal government.

4. In the area of language barriers, information dissemination service providers like agricultural extension workers should be employed and posted to localities where they are fluent in the local language of the locality for easy communication, interpretation and comprehension by the farmers in the country.

5. Finally, in the area of government policies and programmes, the government should implement its policies and programs especially in the area of ICT support to the rural farmers as at when due or in the time of need.

Conclusion

The world is going through some changes that are triggered by demand and supply factors. The demand drivers of the changes include population, income growth, and urbanization, all of which demand increasing availability of food and fiber. The supply drivers encompass climate change, water and land scarcity, science, technology and innovation policy, investment in research, and policy and governance reform. Innovations are needed to tackle these changes. Innovation involves the extraction of economic, ecosystem and social value from knowledge. It involves putting ideas, knowledge and technology to work in a manner that brings about a significant improvement in performance. Increased mobility of knowledge has made re-cycling of knowledge easier.

The development of ICTs has facilitated the dissemination of agricultural information and it is revolutionizing agricultural production and provision of market information to maximize the returns to agricultural produce. There is evidence that rural incomes have been increasing with the use of ICTs to access agricultural information. However, there are challenges

in making ICT platforms available to a large number of the rural population who are engaged in agriculture and these have to be tackled through public policy in the context of rural development and incentives for investments in rural areas. Expansion in the use of ICTs has to start from primary and secondary education by including computer science in the curriculum so that African countries would build the human resource base required for “home-grown” development and use.

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