

## CHAPTER 18

### AGRICULTURAL EXTENSION AND NATIONAL DEVELOPMENT

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#### INTRODUCTION

Agricultural transformation plays a critical role in accelerating developing economies to end hunger and under nutrition while accelerating economic growth. In essence, the role of agriculture in stimulating inclusive economic growth is significant. To buttress the above-stated assertions, Yifu Lin (2018) avers that countries that have achieved high-income status started with agriculture and went through an economic transformation that accelerated growth and reduced hunger and under nutrition. He attributes China's rapid growth in GDP per capita in current US dollars from \$155 to \$8,123 between 1978 and 2016 to agricultural transformation.

In the same vein, it is well known that Agriculture is a key driver of non-farm economic development. The belief is that each dollar of additional value added in agriculture generates another 30 – 80 cents in second-round income gains elsewhere in the economy. Growth in the agricultural sector will be at least two to four times more effective in poverty reduction than in any other sector. The agricultural sub-sector of the Nigerian economy is however unable to meet up to the above-stated demands. Nigerian agriculture is under stress - It must provide nutritious food for all and generate decent income, while supplying people centered rural development at less cost to our environment. In essence, if done right, agriculture and related activities can provide nutritious food for all and generate decent income, while supplying people centered rural development at less cost to our environment.

The primacy of agricultural extension in the information dissemination process for agricultural development has been emphasized (Akpabio, 2007; Akpabio, Okon and Inyang 2007). Extension is part of agricultural knowledge and information systems, which are in turn part of agrifood and rural development innovation systems that frame the prospects for rural poverty alleviation and food security. Extension has a crucial contribution to make to these broader systems (Christoplos, 2010) as to ensure that the more than 1.32 billion small holder farmers in developing countries play

greater and increasing roles in household, national and global food security. Extension should therefore be prepared to contribute to the food security and livelihoods of these smallholders, by enhancing their productive capacity. This will in turn enhance global food security and national development. Extension is therefore an essential part of the answer to realizing the potential of small-holder farming and rural development more generally.

#### Meaning and Revolving Definitions of Agricultural Extension

##### Revolving Definitions

Agricultural extension is a difficult term to define, simply because it is organized in various ways to accomplish a wide variety of objectives. The only constant in extension is the revolving nature of its various definitions. The word "Extension" is derived from two Latin roots: "Tensio" = stretching; and "Ex" = out. Its archetypal definition is therefore "that type of education that is stretched out into the village and farms, far beyond the boundaries of classrooms, to reach people who are normally not opportune to achieve formal education". Extension may therefore be simply defined as "a voluntary out-of-school system of education in which adult and youth learn - by - doing".

Reddy (1971) gave an all embracing definition of extension education, as "a science which deals with the creation, transmission and application of knowledge designed to bring about planned changes in the behaviour - complex of people, with a view to helping them live a better life through learning new ways of improving their vocations, enterprises and institutions."

Swanson and Claar (1984), defined extension as an "on-going process of getting useful information to people Van den Ban and Hawkins (1996) are however more précis in their definition of extension as "the conscious use of communication of information to help people form sound opinions and make good decisions".

Essentially, agricultural extension is a science of social change in the entire society. According to Ghouri (1985) the change starts within the farming practices and gradually works its way through economic and social sectors, until it ultimately becomes a total human experience. Extension therefore attempts to increase the net income of a farming community through more efficient production and marketing and better use of capital and credit. Ultimately, extension attempts to enlarge the vision of rural populations and enlighten the government about rural problems.

A more current and encompassing definition is that given by Christoplos (2010) who defined Agricultural Extension as 'systems that should facilitate the access of farmers, their organizations and market actors to knowledge, information and technologies; facilitate their interaction with partners in research, education, agribusiness, and other relevant institutions; and assist them to develop their own technical, organizational and management skills and practices.' Regardless of the above-enunciated definitions, the basic purpose of extension is to teach farmers "how to think" and not "what to think". In other words, extension is an attempt to improve the quality of human life (and not merely living standard) by helping people to help themselves. In essence, extension work aims to diffuse among rural people, useful and practical information on agriculture and family living, and to encourage effective application of these ideas so as to result in a better quality of human life and ultimate and national development. (Akpabio, 1999; Christoplos, 2010).

The agricultural sector is however undergoing a transformation process and the world's food system is being increasingly dominated by multinational companies, on both ends of the supply chain, with large – scale commercial farmers capturing increasing market share, especially for the major food commodities (Swanson, 2006). It therefore becomes pertinent for the Nigerian small scale farmer to key into and take active part in this global food system. In order to meet all these challenges, it is crucial to achieve a very significant increase in output, and hence productivity. The only way to achieve this is by 'modernizing' agriculture (CTA, 2011). This process will demand for an agricultural extension system that will focus on and facilitate farmer/market – driven innovations that will significantly increase farm incomes, improve rural livelihoods and accelerate the agricultural development process (Swanson, 2008).

Against this background, the role of extension has thus widened to include issues in rural areas that go beyond agriculture cursory look at the roles listed below reveals that some of them may not be effectively handled by the public extension service alone, but in collaboration with private organizations. To understand extension it is therefore essential to look beyond those organizations that are normally seen as "extension agencies", to instead focus on farmers' and entrepreneurs' demands and needs for information and advice, rather than fixed notions on standardized, top down diffusion processes (Christoplos, 2010). According to Swanson (2008) if the public extension system is to survive, then it must refocus on getting farmers organized and on helping them increase farm income and rural

employment through a new decentralized market – driven extension strategy.

### **Contemporary Roles of Agricultural Extension**

Christoplos (2010) details the role of agricultural extension in the 21<sup>st</sup> century, as follows:

- a) Dissemination of information about technologies, new research, markets, input and financial services, and climate and weather;
- b) Training and advice for individual farmers, groups of farmers, farmer organizations, cooperatives and other agribusinesses along the market chain;
- c) Testing and practical adaptation of new technologies and practices on-farm;
- d) Development of business management skills among smallholder farmers and other local entrepreneurs;
- e) Facilitation of linkages among market actors (including financial and non – financial inputs, processing, trading, etc.) including brokering collaboration and promoting social learning among them;
- f) Linking smallholder farmers, rural entrepreneurs, and other members of the agricultural community with institutions offering training and education in fields relevant to the agricultural sector;
- g) Facilitation of linkages between farmers, their organizations and the public sector;
- h) Support to institutional development processes and to social, institutional and organizational innovations;
- i) Development of informal and formal farmer organizations, and rural youth organizations, and helping them to articulate their demands;
- j) Support to implement government policies and programmes through information, awareness and advice on technological options, including land stewardship, food safety and policies and programmes by facilitating feedbacks from farmers and local entrepreneurs;
- k) Facilitating access to non – extension government support (such as weather – related insurance, phytosanitary and certification services, etc. facilitating access to credit from rural finance institutions for farmers and local entrepreneurs;
- l) Nutrition education and home sciences;
- m) Mediating in conflicts over natural resources; and
- n) Legal and fiscal advice.

### Role of Agricultural Extension in National Development

Agricultural extension has a primary role in facilitating the achievement of national agricultural development goals. According to Swanson (2008) and Swanson and Rajalahti (2010) these include:

- Transferring new agricultural technologies to achieve national food security through technology transfer, which was the dominant extension strategy in most developing countries during the 20<sup>th</sup> century;
- Increasing farm incomes through a more market-driven extension strategy that will enable farmers to intensify and diversify their farming systems based on market demand and hence improve rural livelihoods;
- Empowering farmers by getting them organized into groups (social capital) within rural communities, based on common interests; to gain more efficient access in both inputs and markets; and;
- Promoting the use of sustained natural resource management practices among farmers to address environmental challenges like soil nutrient depletion, land degradation and global warming etc.

Figure 1 illustrates the relationship between major agricultural goals and different extension functions. **First**, to achieve and maintain national food security, technology transfer for the staple food crops is a key function that must continue to be carried out. When countries achieve national food security, it is common for staple food prices to gradually decline, reflecting the relative supply and demand for these products. This should lead farmers to seek for different strategies by which they can increase farm household income.

A paradigm shift therefore occurs where public extension shifts more of its focus and resources to a **second** national goal of seeking to improve rural livelihoods; a key component of which is to increase farm incomes. This can be achieved by the process of intensification and or diversification of agricultural produce.

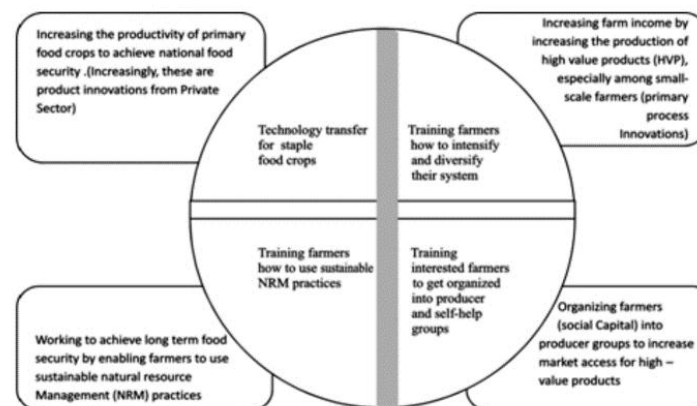


Figure 1: Key Functions of Extension in Achieving Specific national Agricultural Goals  
Source: Swanson, B. and R. Rajalahti (2010) p.7

A **third** objective, directly related to the diversification of farming systems, is the need to get interested farmers organized into producer groups for different high value crop and livestock products, so they can increase their access to both inputs and markets for those enterprises. Once these farmer groups are organized and gain experience, they are more effective in articulating their needs to extension and other agricultural institutions, including research.

**Finally**, for a country to maintain national food security over the long – term, it is critical that farmers individually and collectively know how to maintain their soil fertility, stop land degradation, and to make efficient use of increasingly scarce water resources. These are “public good” issues, which the private sector will generally not address; therefore, the public extension must allocate more time, attention and expertise to these growing natural resource management (NRM) problems.

As small – farm households begin pursuing these new enterprises, both small – scale and women farmers begin acquiring new technical, management and marketing skills. In addition, as they begin organizing producer groups to market these high – value products, then these participating farmers learn new organizational and leadership skills.

Another set of key players during periods of changing consumption patterns in developing countries are innovative farmers who play an important “tactical” role. First, they identify potential markets and then determine how best to produce and market specific high – value crops or other enterprise that meet the changing market demands within their area. It takes extension to identify these innovative farmers after which other small – scale and women farmers can begin learning about these new opportunities and then get started in producing these enterprises on a small – scale to begin increasing their farm household income.

#### **Market Driven Extension Service**

The elements of a market – driven extension strategy (Swanson, 2006; Swanson 2010) demand that: First, extension needs to shift some of its focus from food security to increasing farm income and rural employment. This change in national policy requires that extension focus more attention on increasing the production of high – value crops, livestock and other value – added enterprises, in making this policy shift, it is essential that extension becomes more market – driven. This requires that extension allocate more resources to identify markets where small – scale farmers can be competitive and to assist them with learning how to build value – chains that will effectively link these farmers with markets.

Another essential element is that farmers must become organized into groups to achieve economies of scale in supplying these high – value markets. These farmer organizations will become the basic building blocks of democratic institutions and will enable farmers to participate more fully in the political process. Finally, for market – driven extension systems to be effective, decision – making must be decentralized. In addition, for a decentralized extension system to be effective there must be formal stakeholder involvement in decision – making to increase accountability.

#### **Elements of a Market Driven Extension Service**

In order for extension to advice small and medium scale farmers about alternative high – value crops or products that they might be able to successfully produce and market, it is essential that extension becomes more market – driven. There are four essential axioms that must be followed as an extension system shifts to high – value crops, livestock and other enterprises (Singh & Swanson, 2006):

- i) Encourage farmers to produce in response to market demand by assessing the potential markets for different high – value crops or products that can be successfully produced in different areas;

- ii) Encourage products that are better suited agro ecologically and can be successfully produced within an area, also look for easily marketable products;
- iii) Focus on crops that can be easily transported to the market, while maintaining quality; and
- iv) Diversify into a sufficient number of different high – value crops/products that are suitable for the different farmer associations. This approach will mitigate risk by not saturating the market with one or two crops/products, thereby driving down prices.

In addition to developing technical expertise about different high – value crops and livestock enterprises, the field extension staff needs to have access to up-to-date market information and to make this information readily available to farmer associations. First, the extension system needs access to information on growing domestic markets for different high – value crops and products. Secondly, building social capital is a critical element in an overall agricultural development strategy aimed at reducing rural poverty (Swanson, 2004). Extension can achieve this by; getting farmers organized, determining their interests based on accessible market opportunities, training these groups on how to produce specific crops/products and, working with them to develop supply chains in marketing their products.

#### **Agricultural Extension, the Youth and Modernized Agriculture**

Youth unemployment must be addressed as a means of fighting poverty. The youth however view agriculture as being unproductive, too traditional and lacking in opportunity for economic development. Yet, this is a false perception because the Africa economy is majorly agricultural, so agriculture is the lifeblood of African societies. Also, with the development of ICT and other kinds of sciences, the farmer that the youth can be, is not the same farmer that his or her grandmother was.

ICT are being utilized for development efforts in Africa and Nigeria but this trend is not being replicated in the food production and rural livelihood system (IFAD, 2002). Leary and Berge (2006) revealed that even in the advanced economies of Europe and America e-learning adoption in agriculture falls significantly behind the current adoption rates seen in non agricultural sectors. It is obvious that we cannot talk about attracting youth in agriculture today without mentioning the use of ICT in agriculture and agricultural extension. Youths are the group who use ICT tools extensively (mobile phones, computers, I-Pads etc.) and the very fact that these are presently being used in agriculture may help to attract them to the sector.

Young people are adventurous, insightful and with gamut of energy to drive ideas to things. Youth interest lies in things that are new, fun and offer opportunities. Also, young people's interest in cable television networks is passionate. They want a livelihood that is lucrative, they want to be educated, they like Peer Company, and they like the newest electronic gadgets in town. They also like watching home video/movies, they like being respected as professionals, they like music and fashion. They would wish to settle down fast, drive big cars and possess top notch mansions. They often do not have time for boring things. The extension system has to key into these overriding characteristics of the youth.

#### ICT Related Challenges of Young Farmers

One of the series of outcomes of the Young Professionals' Platform for Agricultural Research for Development and Global Forum for Rural Advisory Services (YPARD/GFRAS): e-discussion in November 2011, revealed that younger farmers require: more information than their elder counterparts; instruction on using more up-to-date technological tools and ICT; real – life examples of what is happening on the ground with other people; confidence in the information that they receive so that they can be confident in their decision – making; greater capital, greater networks and contacts partnerships.

In essence, farmers need more qualified digital (ICT compliant) extension professionals to update them on new technologies. Apart from other challenges faced by Agric Extension personnel (as detailed below) documented reports (Akpabio, 2007; Akpabio, Okon and Inyang 2007) however reveal the very low level of utilization of ICT by extension professionals in Nigeria's Niger Delta region. Constraints affecting non utilization of ICT for extension work were revealed by the authors to include "Poor ICT infrastructure development, electricity power problems, high cost of broadcast equipment, poor interconnectivity, high cost of access, inability to monitor progress of innovation, high cost/non availability of ICT, high charges for radio/TV programmes, little time allotted for programmes, non-interactive communication, preponderance of provider – driven, not user – driven information. Akpabio, Okon and Inyang (2007) reveal that the major constraints were: poor enabling environment, lack of access and dissemination of non relevant information.

#### Challenges of Young Extension Workers

The Extension service needs to attract the youth population into their fold. The following challenges must however be ameliorated for enhanced youth participation in the activity of extension (Akpabio, 2012):

- a) Agricultural extension has the ability to solve many of the challenges that agriculture is facing, but it needs to be made attractive. Indeed, the nature of agricultural extension itself is challenging since it involves working with the farming community (which is not easy as there is the need to understand rural life and human behaviour), have a good knowledge of agriculture (pest and disease management, market prices and opportunities, other stakeholders in agriculture and their role etc.) and have specific skills (good communications skills, be a trainer and learner at the same time etc.). Furthermore, being in agricultural extension also includes working in marginal areas to meet farmers, which is not attractive to many youth as the infrastructure and living conditions in the rural areas induce a feeling of isolation in young extension experts.
- b) More information at all levels is required to be successful in extension and advisory services; to keep up-to-date socioeconomic, political technical and scientific information. Access to new research technologies is limited and technologies keep changing, hence extension workers need to stay updated.
- c) Extension requires working in the field which shows a number of challenges and requires specific skills, notably a number of soft skills related to listening, communicating, continuously learning, adapting to specific rural contexts, training etc;
- d) **Ability and favourable environment to work in an inter-generational team:** Difference of age and experience can create some conflicts.
- e) Graduates should be given opportunity to work in the field at early stage to know the reality of the work.
- f) Regular capacity building is relevant to extension professionals who need to be current with technical agricultural information as well as new technologies and agribusiness/entrepreneurial knowledge. There is a particular need for computer and web 2.0 skills as extension is mainly about information and communication. As

farmers are also gaining increasing knowledge, extension professional needs to keep up with the game to be able to serve farmers. There exists e—learning platforms for social media and web 2.0 tools, where extension professionals can get access. There is also a need for more dynamic, innovative and less theoretical training sessions, with more field visits and use of ICT. Professionals in extension are however poorly equipped with ICT. This does not augur well for the new generation that are desirous of using new technologies to make the services more effective. However in many places computers and internet are still a luxury and power issues are still problematic. It will also be necessary to produce video documentaries of trainings, spiced with entertaining songs and motivational speeches which catch attention. They can watch these at their own leisure.

- g) More support from private organizations and from the government, in terms of improved remuneration, accommodation and transportation, as to improve on the present low standard of the extension profession and motivate young people to work in extension.

#### Conclusion

There is a global divide in agriculture whereby in the developed world, farmers manage sophisticated and capital intensive businesses and deliver cheap food whereas in the developing world, 500 million farmers labour on plots of less than 2 hectares, attempting to feed about 2 billion people. Three quarters (75%) of global hunger is located among farmers and their workers, while most of the remaining one – quarter (25%) is found among the urban poor.

A principal challenge confronting government and the international development community is to ensure that small holders benefit from commercialization in agriculture by participating in the market. Increased commercialization shifts farm households away from traditional self sufficiency goals and towards profit and income – oriented decision making. It is by modernizing agriculture that Nigeria's vast number of in-coming generation will be able to live a decent life, stay mainly in the countryside and ensure food security for both rural and urban communities. The future of Nigeria and agriculture are closely linked. For rural societies to undergo radical transformation vigorous policies must be pursued and finance must be available to invest in agriculture and rural infrastructure.

The millennium development goal (MDG) 1 had recommended that the number of hungry people must be halved by 2015 by improving agricultural productivity and promoting agriculture by investing in the empowerment of smallholder farmers. The importance of the MDG I (which could not be attained) is re-emphasized by the first three elements of the sustainable development goals (SDGs), which emphasize; no poverty, zero hunger, and good health and well-being. Agricultural Extension has a primary role in actualizing the above-enunciated goals. One sure way to actualize the above is to seek for ways and means to attract the youth into a modernized market-driven agriculture. Policy makers tend to delay the active participation of youth in social transformation, just as the same inactivity has been transferred to the growing food crisis. Yet, if these issues are not dealt with soon, it will be the same “children of the future” who will be left to deal with the challenges of a hungrier, more congested world, when the presumably older “leaders of today” are long gone.

Mobilization of governments and all stakeholders will be decisive in determining if agriculture pursues the path of intensification and productivity needed to attract and accommodate the growing ranks of future young, mainly rural people. It is they who will have to ensure food security in the decades to come. They must be empowered to do so.

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