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Present and Future of Agricultural Extension System in Uganda*

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Abstract

This study aims to explore the present and future of agricultural extension system in Uganda. Though Uganda has used many approaches in its agricultural extension, very little has been registered in farm productivity and profitability. Too many reforms some of them some are top-down while others are bottom - up. In most cases these reforms may not be given a chance to develop to show their impact. Future success of agricultural extension and rural development efforts in Uganda will depend not only on the presence of technical expertise and availability of resources but also on each government's willingness to redefine the role of its institutions and to allow the active participation of

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rural people in formulating and implementing and agricultural extension and rural development programs. As result the public extension systems in Uganda needs to be demand-driven so to make it relevant and important to the beneficiary.

Key words: Agricultural Extension, Uganda

1. Introduction

Extension originally was conceived as a service to "extend" research-based knowledge to the rural sector to improve the lives of farmers (Davis, 2008). It then had the components of technology transfer, broader rural development goals, management skills, and non-formal education. The major purpose of extension in Africa was very much focused on increasing production, improving yields, training farmers, and transferring technology. Today understanding of extension goes beyond technology transfer to facilitation; beyond training to learning, and it also includes assisting farmer groups to form, dealing with marketing issues, and partnering with a broad range of service providers and other agencies. With that background Agricultural extension can be defined as the entire set of organizations that support and facilitate people engaged in agricultural production to solve problems and to obtain information, skills, and technologies

to improve their livelihoods and well-being (K.E. Davis, 2008). Therefore in Uganda there is no way one will discuss the present agricultural extension system without looking at the past systems.

2. Brief History of Uganda Extension System

Like any public sector extension, in developing countries, Ugandan Extension system has been undergoing a number of transformations. Below is brief description as it was given by Semana (2002).

2.1. 1898-1907: Early Colonial Period

This was a period when cash crop planting materials were imported. Extension was distribution of the plating materials. The cash crops covered were coffee, cotton, rubber, and tobacco. The research stations (Serere for cotton and Kawanda for coffee) were also established to carry out agricultural and forestry research in Uganda.

2.2. Regulatory 1920-1956: Extension Service through Chiefs

This was the beginning of extension services. The colonial

administration needed resources to run the protectorate government factories. And Uganda provided those raw materials for the British industries which had a ready market. Chiefs assisted by a few expatriate field officers and African instructors carried out extension work. The major work was the distribution of planting materials of major cash crops. There were simple and direct messages on how to grow those crops. This was also coupled with enforcing bye-laws requiring every household to grow specific food crops. There were some agricultural practices which had to be done without fail, such as soil conservation and storage of famine food reserves. On good note, the chiefs' status and influence made farmers use good husbandry practices, proper land use and ensured household food security. The extension approach was coercion rather than education.

2.3. 1956–1963: Extension through Progressive Farmers

This was a period where emphasis was placed on technical advice and support in form of inputs and credit to selected progressive farmers. It was Technology transfer model Figure 1. The dissemination of innovations/technologies relied on the extension worker. It was one way communication as a result there was hardly any continuity or adoption.

Source: Semana (2002).

Figure 1: Technology transfer model

It was believed that improved performance by the selected farmers would be example. It was also expected have multiplier effect for increased agricultural production and productivity. The approach was effective in a situation where there was inadequate number of trained extension staff. However this model also had its challenges such as farmers were not happy with the selection criteria.

2.4. Extension / Advisory Education 1964-1971

This was the beginning of professional extension services. There was training and the use of appropriate extension methods. The philosophy of "helping farmers to help them through" education promoted a two way communication. The Research Extension Farmer Linkage model (Figure 2) was adopted.

This model promoted technology development and dissemination. It was an educational process facilitated by use of tours to similar farmers doing well and field days so that farmers may learn from each other as well as radios, television (cinema, leaflets and posters) to remind or

reinforce knowledge gain. Also farmers were reached through projects such as citrus, group farms, field trials, district farm institutes and experimental stations.

Source: Semana A.R. (2002).

Figure 2: Research Extension Farmer Linkage Model

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2.5. 1972-1980: Non-Directional Phase (Dormant phase)

This was a period when the country was unstable. There was economic disruption and the delivery of goods and services was also affected (Semana, 2002). Cotton production

started to loss direction. The Extension staff started to selling inputs to farmers at the expenses of service delivery. This led to the disorganization, dormancy of extension services and as result low productivity.

2.6. Recovery 1982- 1991

This was period for rehabilitation of the infrastructures and restoration of basic services using projects (Agricultural Rehabilitation and Development Project by World Bank). There were parallel extension services from different ministries, departments and Non Government Organizations (NGOs). This led to duplication, conflict and confusion in the extension services.

2.7. 1992-1997: Agricultural Extension Education/ Reforms

This was the period of reforms, (decentralization, liberalization, privatization, restructuring and retrenchment of staff from 4,300 to 2,000 raising concerns about the government's ability to extend services to a larger number of farmers). The reforms had negative impact on extension education. Down-sizing reduced the field staff. The extension services were affected. The staff lost morale and farmers' access to extension services was also reduced considerably. However, the government arrested the situation by coming up

with a new policy on agricultural extension services, the Agricultural Unified Programme. The Agricultural Unified Programme led to:

In this period there was Bimonthly training workshops and supervised visits (T&V). During T&V some of the farmers' indigenous knowledge got integrated with research group knowledge. Technology dissemination was achieved through the use of participatory approach. It was then concluded that "Farmers are also researchers, teachers and consultants.

i. Merger of Ministry of Agriculture and Ministry of Animal Industry and Fisheries now called Ministry of Agriculture, Animal Industry and Fisheries (MAAIF).
ii. Single chain of command (even at the field level, staff were put under one leader, Extension Coordinator).
iii. A frontline (Field) extension worker was responsible for teaching and advising farmers in all areas of agriculture (crops, livestock or fisheries)
iv. Pre-season planning workshops which brought extension workers, researchers and farmers together (farmer oriented). Face to face interactions brought about change in attitude of the participants. It also emphasized partnership, utilized dialogue to promote farmer participation.

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2.8. 1998–2002: Crossroad, Dilemma

Semana (2002) called this as a period extension at crossroads. It is also a period which laid foundation for the present extension system in Uganda. There was a mixture of conflicting views/ideas and activities concerning extension services. There was almost no public extension service up to 2001 (Semana 2002). But the NGOS carried their activities normally.

It was at this time Plan for Modernization of Agriculture (PMA) was being planned for. PMA was for poverty eradication through a profitable, competitive, sustainable and dynamic agricultural and agro-industrial sector. PMA was recommended to work through seven pillars:

i. Research and technology,
ii. National agricultural advisory services,
iii. Agricultural education,
iv. Improving access to rural finance,
v. Agro-processing and marketing,
vi. Sustainable natural resource utilisation and management
vii. Physical infrastructure.

Also development partners supported the implementation of

PMA. The National Agricultural Research Organisation (NARO) also went through reforms, as it was being alight to PMA principles of demand - driven research.

2.9. 2002 - 2012: Agricultural services under contract systems 'The NAADS Era'

The failure of Agricultural Extension Programme, led to the formation of National Agricultural Advisory Services (NAADS), a Government of Uganda programme. It was 2nd in the PMA component and was fully supported by a number of donors (World Bank, the European Commission, Danida and IFAD).

NAADS' aims were to increase farmers' access to information, knowledge and technology for profitable agricultural production; thus develop a demand-driven, client oriented and farmer led agricultural service delivery system particularly targeting the poor and the women (Ministry of Agriculture, Animal Industry and Fisheries 2000). NAADS had five sub-components are:

i. Advisory and Information Services to farmers
ii. Technology development and Linkage with Markets
iii. Quality Assurance-Regulations and Technical Auditing
iv. Private Sector Institutional Development and
v. Programme Management and Monitoring.

The NAADS' operating **principles** included:

i. Empowering the farmers in agricultural advisory processes and building their demand for both research and agricultural advisory services
ii. Targeting agricultural services to the poor farmers who constitute the majority
iii. Mainstreaming gender issues
iv. Deepening decentralization to bring the control of research and advisory services nearer to the farmers
v. Commercialization – including intensification of productivity, specialization and profitability
vi. Participatory processes in planning, contracting, monitoring and evaluation
vii. managing natural resource productivity
viii. Increasing institutional efficiency through contracting out services, and better linkages between research, advisors and farmers
ix. Harmonization of donor supported projects with PMA principles.

The strategic changes through which NAADS was expected to achieve its aims:

i. Shift from public to private delivery of advisory services in the first 5-year phase
ii. Empower subsistence farmers to access private extension services, technologies and market information
iii. Develop private sector capacity and professional capability to supply agricultural services

iv. To promote market orientated farming (farming as a business)
v. Create options for financing and delivery of appropriate advisory and technical services for different farmer types
vi. To stimulate private sector funding for agricultural advisory services.

Some of the shortcomings which NAADS faced:

i. Delay in the flow of funds from central government to districts and to sub-counties
ii. The quality of advisory contracts in place needed attention;
iii. A lack of quantitative data in the presentations to allow an assessment of progress against targets
iv. Capacity among local governments and service providers was still weak
v. There are conflicting approaches to extension and advisory services in different projects and programmes, which caused confusion
vi. The link to markets was weak
vii. The poor were not adequately represented in NAADS structures and programmes.

2.10. The NAADS Institutional Framework

However, institutionally as NAADS was reaching farmers, the Outreach Initiative of National Agricultural Research Organization (NARO) and NGOs were also reaching farmers with similar services. As result, Agricultural Technology and

Agribusiness Advisory Services project (ATAAS) was formulated to streamline the operations of the two agricultural programmes and their collaborators. **Agricultural Technology and Agribusiness Advisory Services (ATAAS) 2010 to date**

According to Kjaer *et al.* (2013) the planning for Agricultural Technology and Agribusness Advisory Services project was started in 2008. The objective was to 'enhance the efficiency and effectiveness of technology development and dissemination by supporting closer linkage between NARO, NAADS and other stakeholders.

ATAAS was started because the Members of the National Agricultural Advisory Services (NAADS) farmer groups have benefited from selecting more profitable enterprises, but there were still low yields, therefore representing a major lost opportunity. The impact evaluation of NAADS showed that farmers had made significant gains by switching to more profitable enterprises, yet they had not come close to realizing potential farm yields. Low and inefficient use of improved inputs was still low, and also poor land management. Historically, real growth in output over the past 30 years has been driven mainly by expansion in cultivated area and the labor force, with declining total factor productivity (ATAAS Project Document 2010). Therefore reduced opportunities to open more new land for agriculture make it difficult to intensify land use, raise yields of most agricultural products, and further commercialize agriculture. Also another key gap

has been the weak linkage between farmers, extension workers and research for effective technology transfer. So Uganda government in its National Development Plan 2011/2015 recommended for the formulation of Agricultural Technology and Agribusiness Advisory Services (ATAAS).

ATAAS is then expected to transform the agricultural sector, hopefully by narrowing the gap between NARO, NAADS strengthening linkages between the two institutions, as well as other stakeholders.

Project objectives

i. ATAAS is to build on the accomplishments of the completed Second Agricultural Research and Training Project (ARTP II) and the NAADS Projects.
ii. It will concentrate on the issues of governance and corruption.
iii. The ATAAS will promote better institutional collaboration between NARO, NAADS, and other stakeholders.
iv. The project will complement the East Africa Agricultural Productivity Project.

Project components

The project will support key activities through five components:

i. Developing Agricultural Technologies and Strengthening the National Agricultural Research System;
ii. Enhancing Partnerships between Agricultural Research, Advisory Services, and other Stakeholders;

iii. Strengthening the National Agricultural Advisory Services;
iv. Supporting Agribusiness Services and Market Linkages;
v. Program Management.

The project is being implemented through two implementing institutions, NARO and NAADS.

3. Challenges of the Present Ugandan Extension Systems

Though Uganda has used many approaches in its agricultural extension, very little has been registered in farm productivity and profitability (Ogwal Kasimiro et al, 2012). Ogwal *Kasimiro et al. (*2012) and Birner *et al. (*2007) further identified some possible contributing factors as:

i. There has been problem in the transfer of the agricultural technologies generated by research to the end users (farmers..). The issue could be establishing a well managed, effective and accountable system which is able to meet the demands of wide range of beneficiaries? How can extension address the needs of specialized groups, such as women, youth and disadvantaged groups? And what could be the best means (such as radio, print or demonstrations ...) to use in the transfer of technologies?.
ii. The impact of extension services on farm performance is varied reflecting how extension services are delivered and

the circumstance of the service recipients. That is how farmers cope with environment degradation, climate change, can respond to health challenges such as livestock pandemic.

iii. The dependence of extension on the performance of the agricultural research systems and its feedback linkages. The result always is low adoption rates of technologies and practices by the end users.

iv. How can smallholder farmers be helped to access global markets and their standards in the disorganized farmers' and marketing systems

v. Generally there is a challenge in monitoring and evaluating extension services and assessing their impacts that is the capital for agricultural investment

vi. Too many reforms some of them some are top-down while others are bottom - up. In most cases these reforms may not be given a chance to develop to show their impact. Also each reform comes with its challenges. For example James *et al.* (2011), found out that, farmers' willingness to pay for the services provided by NAADS, was closely linked to NAADS association over time and was likely to affect the perceived quality of the services. Sometimes some reforms may not be well suited for the farming system:

   a) For example Train and Visit (T&V) had a problem of fitting in to the rain fed areas. This could be because it could not maintain the activities / programmes started for example in the Teso Farming system.
   b) It may be difficult to promote agricultural diversification
   c) In some cases it becomes difficult to integrate farmers into dynamic markets.

vii. Political changes. Some political governments give low

priority to agricultural investments. And there is a problem of ensuring political commitment and fiscal accountability for agricultural extension.

4. Future Agricultural Extension System of Uganda

Future success of agricultural extension and rural development efforts in Uganda will depend not only on the presence of technical expertise and availability of resources but also on each government's willingness to redefine the role of its institutions and to allow the active participation of rural people in formulating and implementing rural development programs (Swanson & Samy, 2002). As result the public extension systems in Uganda needs to be demand-driven so to make it relevant and important to the beneficiary. However (Birner et al., 2007) said identifying reform options most likely to make extension demand - driven still remains a challenge.

The possible way forward for Uganda is to identify what is that, it takes to make its extension demand-driven. Birner et al.(2007) classified options for providing and financing agricultural demand-driven extension into three sectors as; (i) public sector; (ii) private sector and (iii) third sector which includes NGOs and farmer organizations. However

demand - driven in economic concept imply supply and demand. According to the economic theory, *demand* refers to the amount of goods and services that a consumer is willing and able to buy at given price. Therefore, each of the three sectors has to contribute to either demand or supply. In reality private sector plays the role for creating demand, while public and third sector has to fulfill the supply role.

It can be assumed that in the absence of the market mechanism, public and third sector extension providers can not ensure that the services they supply can meet the needs and priorities of their client (Birner et al., 2007). Therefore to establish demand-driven advisory services, it is useful to begin by identifying the extent to which market failures or other obstacles prevent the emergence of private sector extension services, which use the market mechanism to make services demand-driven. Therefore it is useful to consider the range of institutional options by which the services can be provided and financed, taking into account that sectors / institutions / organizations of the public, private, and third sectors can collaborate in various combinations. Table 1 provides the institutional possible combination / options different sectors can work together.

Table 1 Options for providing and financing agricultural advisory services

Provision of services	Financing of services				
	Public sector (various levels of decentralization possible)	**Private sector: farmers (individual)**	**Private sector: companies**	**Third sector: NGOs**	**Third sector: Farmer Based Orgn. (FBOs)**
Public sector (various levels of decentralization possible	1. Public sector extension (various degree of decentralization	5. Fee- for - service extension proved by public sector	9. Private companies contracting public sector extension agents	11. NGOs contracting public sector extension agents	15. FBOs contracting public sector extension agents
Private sector: companies	2. Publically financed contracts or subsidies to private sector extension providers	6. Private extension agents, farmers pay fee	10. Information provided with sale of inputs or purchase of outputs.	12 Extension agents from private companies hired by NGOs.	16. FBOs contracting public sector extension agent from company
Third sector: NGOs	3. Publically financed contracts or financial support to NGOs providing extension	7. Extension agents hired by NGOs, farmers pay fees		13 Extension agents hired by NGOs, provide free service.	
Third sector: FBOs	4. Public financial support supplied to extension provision by FBOs	8. Extension agents hired by FBOs, farmers pay fees		11. NGOs financing extension agents who employed by FBO	17. Extension agents hired by FBOs, provide free services to members

Adopted from Birner, B. & Anderson, J. R. (2007).

5. Some of the Approaches to Making Agricultural Extension Demand-Driven

5.1. Market-Based Extension

In real situations it is not possible to get market - based extension. There are some reasons why there is for market failures in agricultural extension (**Birner et al., 2007**).

i. Market failure can be caused by the nature of the goods to be provided (is it a public or private good). Market failures can affect both the supply side and the demand side of service provision.
ii. The level of target service beneficiary. According to **Chambers (1997)**, smallholder agriculture in developing countries (including Uganda) has several key features. Some of these features include: (a) have low farm productivity. (b) independent, and make their own decisions; (c) grow a wide range of crops and some keep animals as well (d) wide range of conditions, options, constraints and opportunities; (e) widely separated with poor infrastructure affecting access to production resources (products, inputs, markets, information and knowledge) (f) they are often not organized in groups.

As a result, the transaction costs of providing extension to smallholders in less-developed areas are typically high, and private sector organizations may not find it profitable to

provide those services.

The market failures related to extension above can be addressed through public sector intervention and collective action (option 1 in Table 1). However public sector interventions have their short comings.

5.2. Public Sector Failures

The public sector has traditionally played an important role in agricultural extension. However, some of the state failures in agricultural extension can be summaries as problems related to (i) information, (ii) incentives, (iii) capacity, (iv) political interests, (v) bureaucratic procedures, (vi) attitudes (vii) financial sustainability, (vii) reduce the effect of private and third sector extension providers. Some of these failures are even made worse by the complexity of smallholder agriculture (Chambers, 1997).

The most useful strategy to address state failures in agricultural extension is to involve NGOs, farmer based organizations, and private sector agencies in the management and execution of extension services. This one strategy can be implemented in the four approaches (i) institutional design (decentralization, increased autonomy, contracting), (ii) funding mechanisms (competitive grants, cost recovery,(iii) management approaches (merit - based recruitment and promotion, performance contracts, managing for results, (iv)

extension methods (participatory extension methods).

5.3. Third Sector Extension

There are two types of third sector organizations (NGOs and FBOs). Whereas NGOs are accountable to their funding agencies, FBOs are accountable to their members. Table 1 shows the wide range of options for NGOs and FBOs to be involved in the financing and provision of extension. Their involvement can play an important role for overcoming the problems of market and state failures.

6. Conclusion

Agricultural extension in Uganda has lot to be done. It has developed over time through many transformations. But the process is thus far incomplete, not only in implementation but also in policy analysis. This presentation has tried to identify some gaps in the attainment of demand-driven extension and there are still some issues which need to be addressed. This is a time for agricultural policymakers to reflect afresh on the unmet demands, implicit and explicit, for provision of agricultural extension services to *all* of Ugandan deserving farmers.

Lessons learnt are:

i. A clear strategy is needed to include the poor, possibly early sensitisation is essential
ii. The rate of demand for relevancy, effectiveness and efficiency of the extension systems needs to be carefully judged: (i) the pressures many leave some beneficiaries out, (ii) the available resources for services might become over-stretched, (iii) there might be not time to reflect on and apply the lessons being learnt from different reforms.
iii. Effective linkages within the extension sectors for making extension demand - driven
iv. Quality assurance system is essential, to give all stakeholders confidence that advisory services are of an appropriate standard and are relevant for them

The observation will be "Is NASARRI KAFACI PROJECT in Uganda reflecting on the some of the issues raised in the Future Agricultural Extension System of Uganda, section is YES.

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우간다 농촌지도사업의 현재와 미래

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초록

이 연구는 우간다 농촌지도사업의 발전과정을 조망하고 발전방안을 제시하는 것이다. 우간다에서 농촌지도사업에 대한 많은 접근방법이 사용되었지만, 농업생산성이나 수익성 향상에 도움이 되었다는 선행연구 결과는 없는 실정이다. 그 동안 너무 많은 농촌지도사업에 대한 개혁사업이 이루어졌지만, 부분적으로 상향식 접근방법도 있었지만, 대부분의 접근방법은 하향식 접근방법이었다. 많은 사례에서 농촌지도사업에 대한 이러한 개혁은 농업생산이나 수익성에 영향을 줄 정도로 발전될 수 있는 기회가 주어지지 않았다. 향후 성공적인 농촌지도사업과 농촌개발이 이루어지기 위해서는 기술적인 전문가와 자원의 유용성 증가 뿐만 아니라, 농촌지도사업과 농촌개발 프로그램을 기획하고 수행할 때의 농촌지도사업의 제도적인 역할정립에 대한 정부의 의지와 지역주민의 적극적인 참여가 이루어지도록 해야 할 것이다. 그리고 우간다에서 공공 농촌지도사업은 수요자에 필요한 적절한 지도사업이 이루어지도록 수요자중심의 농촌지도사업이 이루어지도록 해야 할 것이다.

주요어 : 농촌지도, 우간다

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