Agricultural Extension in Kenya: lessons from India's Agricultural Extension Service

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Abstract

Agricultural Extension plays an important role in agriculture, by providing information and skills to farmers and also linking them to other players in the agriculture sector. Kenya, like many developing countries, has a publicly funded national extension service. Currently, the extension service in Kenya is undergoing major reforms on two fronts. The first, is the shift in approach, from the National Agriculture and Livestock Extension Programme (NALEP) to the Agriculture Sector Development Support Programme (ASDSP). The second is the devolution of agriculture to the counties, following the decentralization of government. These two situations have put Kenya's extension service at crossroads. The purpose of this paper is to highlight key success factors of India's extension service, with a view to highlighting best practices that Kenya can learn from India. India's agricultural extension service over the years has undergone a number of reforms, which have been effectively managed, resulting in tremendous success stories. Agriculture is devolved to the states, whereby each state is responsible for planning and implementing its own programmes, with general policy direction from the Federal Government. A key feature in planning is the participatory development of Strategic Research and Extension Plans, which ensure convergence of research and extension activities. Support to private extension service providers, and the extensive use of both traditional and modern ICTs also ensure significant coverage of farmers. Another feature is the provision of market-led extension services and weather-based advisory services. Universities and research organizations also play a key role in extension, with a key aspect being the Farm Science Centres (KVKs). There is a lot that Kenya can learn from India's extension service to ensure that current reforms are effectively managed, in order to have a vibrant agricultural extension service that will contribute to improved farmer livelihoods, food security and national economic growth.

Introduction

The importance of agriculture in Kenya need not be over-emphasized since it forms the backbone of the country's economy. Agriculture directly contributes 26 per cent of the Gross Domestic Product (GDP) and another 25 per cent indirectly. It supplies the manufacturing sector with raw materials, generates tax revenue that

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helps to support the rest of the economy and accounts for 65 per cent of Kenya's total exports. It also employs over 40 per cent of the total population, and over 70 per cent of the rural population depends on agriculture for their livelihood.

The agriculture sector plays an important role in Kenya's economy (Government of Kenya, 2009), and has been identified as a key driver to achieve the 10% economic growth under Kenya's vision 2030 (Government of Kenya, 2007). Despite this, levels of production and productivity are very low and the vast potential of the sector has scarcely been tapped. Agricultural Extension plays an important role in agricultural development, by providing information and skills to farmers and also linking them to other players in the agriculture sector. The success of rural development programs depends largely on decisions by rural people on such questions of what to grow, where to sell, how to maintain soil fertility, and how to manage common resources. These decisions are dependent on the knowledge and information available to rural people. The ability of the extension service to provide this information ultimately determines the success of all rural development programs.

Kenya, like many developing countries, has a publicly funded national extension service. The Government over the years has tried a number of extension models and styles, including the progressive (or model) farmer approach, integrated agricultural rural development approach, farm management, Training and Visit (T&V) system, farming systems approach and Farmer Field Schools (FFS). These approaches have met with varying levels of success, with some being abandoned while others are still in use. Currently, the agricultural extension service in Kenya is undergoing major reforms on two fronts. The first is the shift in the extension approach, from the National Agriculture and Livestock Extension Programme (NALEP), which was in place from 2001 to 2011, to the Agriculture Sector Development Support Programme (ASDSP). The NALEP approach used a focal area extension strategy that entailed strong collaboration, participation and partnership between the extension staff and other stakeholders (NALEP, 2004).

The Agriculture Sector Development Support Programme (ASDSP) is the new agricultural extension model in Kenya and is based on Agriculture Sector Development Strategy (ASDS), which covers the period between 2009 and 2020. The overall goal of ASDSP is to support the transformation of Kenya's agriculture sector into an innovative, commercially oriented, competitive and modern industry that contributes to poverty reduction, improved food and nutrition security in rural and urban Kenya as a result of improved production and productivity in the rural smallholder farm and off-farm sectors through the value chain approach. The ASDSP has three components, namely:

Component 1: Sector wide Coordination. In this component, an inclusive institutional framework for implementing the ASDSP is initiated and coordination in the sector is supported.

Component 2: Natural Resource Management. The component is designed to provide an enabling environment for the value chain component and at the same time build wider ecosystem resilience.

Component 3: Value Chain Development. This component supports the commercialization and market orientation of the agricultural sector.

The lead technical focus of the ASDSP is on agribusiness and market development. This is based on the assumption that deepened and equitable commercialization of Kenya's agricultural sector, including at the smallholder level, will help to improve the availability of food in both rural and urban areas, and in so doing will reduce the need for food imports and food aid. The ASDSP moves beyond the producer base by placing special emphasis upon working with actors all along the value chain to strengthen their capacity and their coordination.

On paper, the ASDSP is very promising in terms of meeting its goal of supporting the transformation of Kenya's agriculture sector into an innovative, commercially oriented, competitive and modern industry that contributes to poverty reduction, improved food and nutrition security. However, the major challenge is in the effective implementation of the programme, and this is where a few lessons can be picked from India's extension service.

The second reform in agricultural extension is the devolution of agriculture to the counties, following the decentralization of government under the new constitution. The promulgation of the new Kenyan constitution on 27th August 2010 ushered in a new era in Kenya, devolution being one of them. Devolution is a form of decentralization and is defined as a process of transfer of political, administrative, and fiscal management powers from the central government to lower levels of government, primarily operating at city and regional levels (IEA, 2010). Agriculture is among the devolved functions, and the specific sub-sectors include; crop and animal husbandry, livestock sale yards, county abattoirs, plant and animal disease control and fisheries. The employees in these departments have also been devolved to the counties in the new devolved system (Kenya Constitution, 2010). With devolution, there is still debate about the roles of the central and county governments, and uncertainty among the extension staff in terms of their positions and roles.

These two major reforms have put Kenya's extension service at the crossroads, and there is a lot of learning and adjusting that needs to be done. The purpose of this theoretical paper is to share some of India's experiences with agricultural extension reforms, with a view to highlighting the best practices that Kenya can borrow from.

Methodology

This paper is based on experiences that were gathered by the authors during a two months training programme in India on "New Dimensions in Agricultural Extension Management". The training was conducted between 6th January and 6th March 2013 at the prestigious National Institute of Agricultural Extension Management (MANAGE) in Rajendranagar, in the state of Andhra Pradesh in India. The training was organized under a tri-partite arrangement involving India, USA and Africa, and its purpose was to contribute to improved food security in Africa through training of agricultural extension functionaries for improved agricultural productivity. It was attended by 30 delegates from Africa; 10 each from Kenya, Malawi and Liberia. The methods used in the training included; lectures from a variety of experts in different areas of extension, field visits to different states, institutions and organizations, as well as interactions with farmers and other stakeholders.

Evolution of Agricultural Extension in India

In India, like Kenya, agriculture has been a way of life and continues to be the single most important livelihood of the masses. India has been able to feed its large population of 1.22 billion people and has also emerged among the major world exporters of milk and cereals. Agricultural extension in India has a slightly longer history than in Kenya, but there is substantial similarity in the paths that have been taken by extension in the two countries. India's extension service began in the 1950s with a focus on community development. In 1960-70s, it focused only in resource-rich areas to ensure food security. Between 1970-1990 there was introduction of management concept in Agricultural Extension System under the Training and Visit programme, which focused on production and hence dissemination of Green Revolution technologies. Although a lot was achieved in terms of the Green Revolution, there were certain weaknesses and challenges in the extension system, which necessitated reforms.

In line with this, a number of reforms were implemented. This is the model of extension in all states of India, although each state has the freedom to introduce its own innovative strategies under this model. Agriculture is a state subject and each state has its own programmes and policies to support extension services to its farming

community. The Central government ministries have their own programmes and schemes to support the states in strengthening their farmer-oriented services.

Lessons from Innovations in Extension Service Delivery in India

Support to State Extension Programmes for Extension Reforms through Agricultural Technology Management Agency (ATMA)

ATMA scheme aims at promoting decentralized, demand-driven and farmer-accountable extension system. ATMA operates on the comparative strength of different stakeholders. ATMA is responsible for coordinating all the technology dissemination activities at the district level. It has the following components which makes the technology generation/dissemination systems farmer-driven and farmer-accountable. They are clearly outlined in Figure 1, and they include: 1) Governing Board (GB), 2) ATMA Management Committee (AMC), 3) Block Technology Team (BTT), 4) Farmer Advisory Committee (FAC) and 5) Commodity oriented Farmer Interest Groups (FIGs).

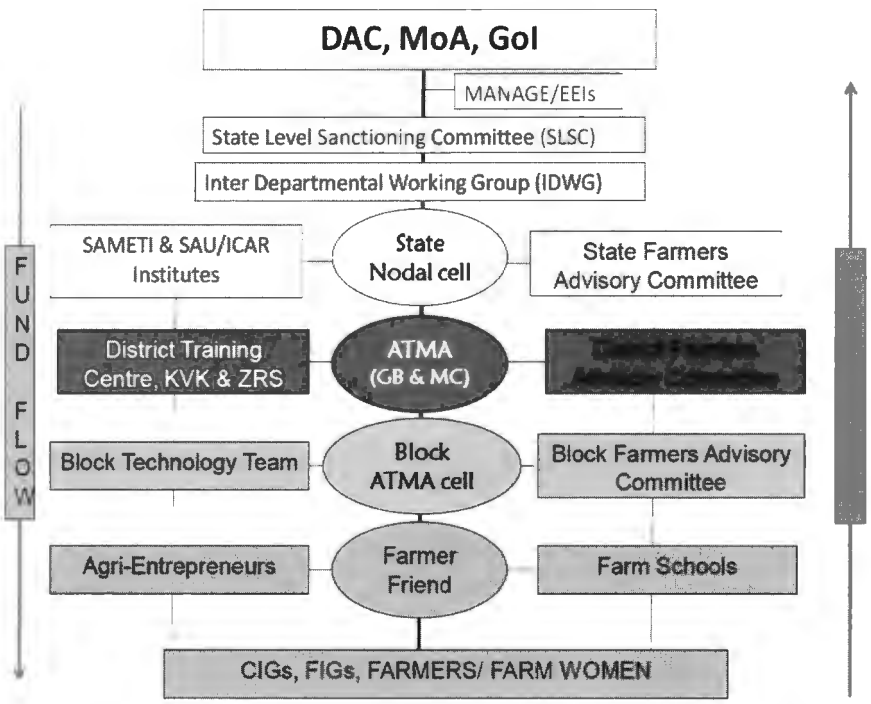

Figure 1: Agricultural Technology Management Agency (ATMA) model
(Source: MANAGE, India 2013)

The ATMA model of extension ensures participation of farmers at all levels. Planning for the extension programmes is participatory and moves from the bottom upwards, while funds flow from the top to the bottom. The Federal Government provides funding as per the plans prepared by the different states, and in the words of one extension functionary from India "*Good plan good fund, poor plan, poor fund, no plan no fund*". The Government of India prioritizes agriculture, and funding of research and extension programmes is given high priority. This is something that the Kenyan government can borrow, whereby instead of making the counties fund their own extension programmes, the programmes can be funded by the central government based on plans that are prepared in the counties.

Strong Research-Extension-Farmer linkages

The Indian Government has made an effort to reduce the gap between research, extension and the farmers through a number of strategies including the following:

High Involvement of University Staff in Agricultural Extension Activities

This is made possible by the fact that India has agricultural universities, in every state, that are modeled on the American Land Grant university system. Every staff member in the university has a three-way appointment in teaching, research and extension. There is specific time allocated for engagement in research and extension activities. The university staff work with the staff in the Ministry of Agriculture as well as directly with the farmers.

The set-up of Kenyan universities may be different from that in India, but more effort can be put to create closer ties between researchers, extension workers and farmers to ensure the universities play a greater role in research and extension activities.

Extension through Krishi Vigyan Kendras (KVKs) - Agricultural/Farm Science Centres

The Indian Council of Agricultural Research (ICAR) established the first KVK in 1974 and by early 2013, there were 631 KVKs covering most of the districts of the country. Most of the KVKs are under State Agricultural Universities and Central Agricultural Universities but others are under ICAR institutes, NGOs, state governments and other educational institutions. KVKs play a major role in refinement and demonstration of frontline technologies, which are conveyed to farmers through a variety of communication channels. They generally play a major role in promoting climate resilient scientific agriculture and have created a niche for themselves as the

frontline extension system performing the vital role of linking research-extension-farmer systems.

Egerton University through the faculty of Agriculture is engaged in a project to set up KVK like centres in all the counties, but these need strong buy-in and support from all stakeholders in order for them to succeed. The KVKs in India are strongly supported by the government, which pays the salaries of most of the KVK staff. They are manned by full time highly qualified personnel from universities or research institutes.

Government Support to Private Extension Service Providers

This is outlined under the reforms being undertaken in ATMA, whereby 10% of the government's allocation to agriculture should go towards supporting participation of private extension service providers. One major scheme under which this is done is the Agri-clinics and Agri-business Centers (ACABC) scheme.

Agri-clinics and Agri-business Centre's (ACABC) scheme

This is a central sector scheme, which promotes the involvement of agri-preneurs to supplement the efforts of public extension system by way of setting up of agri-ventures in agriculture and allied areas. Agri-clinics are envisaged to provide expert advise and services to farmers on various technologies including soil health, cropping practices, plant protection, crop insurance, post harvest technology and clinical services for animals, feed and fodder management, prices of various crops in the market etc. Agribusiness centres are commercial units of agri-ventures established by agriculture professionals.

The ACABC Scheme was launched in 2002, with a number of objectives viz., 1) to create gainful self-employment opportunities for qualified and unemployed agriculture professionals including graduates, diploma holders, graduates with postgraduate diploma in Agriculture and related subjects etc., 2) to support Agricultural development, 3) to professionalize agricultural extension and 4) to supplement the efforts of the public extension service. This scheme has led to the establishment of over 11,000 successful agri-ventures.

Convergence of Extension Planning and Service Delivery through Strategic Research and Extension Plans (SREPs)

ATMA facilitates the preparation of the SREP. All players in extension service delivery i.e. researchers, universities and state agriculture officials as well as farmer representatives work together to prepare a harmonized plan for the district, and funding is based on the plan. Preparation of SREP involves analysis of existing

farming systems and research-extension gaps; and prioritization of research-extension strategies. The SREP forms the basis for development of work plans at block/ district level.

The SREP is the basic document, which will give an overview of the prevailing scenario in the district, problems, opportunities in different farming systems, preferences and priorities of the farming community, facilitate long term visioning and strategic planning for agricultural development in the district in a concerted manner. SREP is to be demand driven while it is in consonance with the prevailing agro-ecological, socio-economic situations and also the developmental goals of various government departments. This is developed with a bottom-up approach. While it gives importance to the main clients i.e. the farming community, it does consider the views of the other stakeholders in the agricultural development scenario.

The SREP consists of two sections: the diagnostic section which involves diagnosis of the situation existing at district level and the strategic section, where strategies are devised for improving productivity and farm incomes in view of the prevailing situations identified.

Extensive Use of ICT applications in provision of Extension Advice

Kisan Call Centres (KCC): These were launched in 2004 to provide agricultural extension advisory services to farmers through telephone calls using toll-free numbers. There are KCCs in every state, which provide farmers with instant information on demand, and in the local language. KCCs are manned by trained agriculture graduates who work on full-time basis. These represent the Level I support to farmers. There are scientists from training institutions who are attached to the Call Centres, and the call centre staff refer the tougher cases to them (Level II). The KCCs are also linked to agricultural institutions (Level III) that handle issues that cannot be handled by the scientists. Thus, there are three levels of answering farmers' queries, to ensure that every issue is addressed. Oral clarification of queries is usually followed by SMS to the farmer's mobile phone. The KCC works from 6.00 am to 10.00 pm all the year round (365 days).

Extensive use of GIS to Monitor Agricultural Programmes: GIS has been simplified and demystified, whereby it is considered a tool anybody can learn how to use. It is therefore used widely to monitor agricultural programmes including subsidies, credit, irrigation systems etc. There is an institute in the state of Gujarat that is entirely dedicated to training people on the use of GIS and related technology. In Kenya, GIS is still held as a very exclusive knowledge domain, and its use is therefore not as extensive as it would be if more people were encouraged to learn how

to use it. We therefore fail to benefit from the advantages offered by GIS in strengthening our agriculture programmes and ensuring greater effectiveness.

There are other ICT initiatives such as the Farmers' Portal, which is an Internet based site that serves as a one-stop shop for farmers on all kinds of agriculture-related issues. There is increasing use of ICT and mass media in extension work, but there is need for harmonization of the efforts and government support for the same.

Emphasis on the role of Progressive Farmers in Extension

The purpose of this is to promote farmer-to-farmer extension, and is achieved in a number of ways including:

System of Adarsha Rythu: Adarsha Rythu acts as a nodal functionary between the farmers and extension staff of agricultural and allied departments, at the village level, and as facilitators for 200-250 farmers. Their role includes maintaining registers with information on each farm holding in their area of jurisdiction in terms of soils, crops, livestock, credit etc., and implementation of all the departmental programmes at the village level. They also create awareness on use of improved technology, organize soil testing campaigns, make available the required seeds, fertilizers and pesticides, help to get farm implements and machinery on subsidy, in addition to other duties. The Adarsha Rythu have to be practicing farmers who are based in the village, below 45 years old, and with reasonable level of education. They receive a small token of 1,000 rupees per month from the government for their services.

Farm Schools: These are established in the fields of innovative farmers or farmer achievers, and act as an alternative extension tool and facilitate farmer to farmer learning. They also help to reduce the gap between scientific know-how and farmers' practice. Farm schools are useful for participatory research and knowledge management. They are established at the block/gram panchayat (village) level and the trainers have to be approved by the ATMA Governing Board. The teachers in farm schools may be progressive farmers, extension functionaries and experts from Government or NGOs. The main activity of the farm school is to conduct frontline demonstration in one or more crops or allied sector activities.

Farmer Field Schools-Polam Badi programme: Farmer field schools are conducted in the conventional way as it is done in Kenya. One interesting aspect however, is that participants have to conduct Agro-ecosystem Analysis (AES), which forms the basis for their learning activities.

Continuous Capacity Building of Extension Functionaries through Extension Management Institutions

The National Institute of Agricultural Extension Management (MANAGE) at the national level, Extension Education Institutes (EEIs) at the regional level and State Agricultural Management and Extension Training Institutes (SAMETIs) at the state level provide human resource development support to state extension machinery. There is continuous capacity building of extension functionaries through training institutions at various levels. MANAGE trains top-level extension managers, the EEIs target middle-level extension managers while the SAMETIs provide training to the frontline extension staff. These institutions ensure that extension personnel are continuously updated on extension management skills, developments in extension, as well as policy issues and reforms.

Weather-based advisory services

India promotes a weather-based farming model for communities by setting up mini agro-meteorological stations at village level, where community members are trained as weather managers on data collection and recording, interpreting the data for decision-making, developing location specific weather based thumb rules and disseminating the information to the farming community. Each village therefore has a functional weather station and a person who is assigned to read weather data and convey the same to extension personnel.

Weather-based advisory services are very important in view of the climate change challenges that farmers are facing. There is need to come down to village level and provide farmers with timely, accurate and location-specific weather data to enable them make informed decisions. In Kenya, although weather forecasting has improved over the years, the information provided normally covers very large geographical areas, and fails to fit into location/village-specific situations.

Use of Farm-specific Soil Health Cards (E-Krishi Kiran)

Soil testing in India has been given a lot of emphasis. Farmers are issued soil health cards that are based on analysis of their soil. Extension recommendations are therefore based on the state of the farmers' soil as reflected in the soil health card. The analysis of the soils is done on a regular basis to ensure updated information on the soil health cards.

Kenya is on the right track as far as this is concerned, especially with the recent launching of the national soil testing report at Egerton University. However, there is need to encourage farmers to have the soils on their individual farms tested, since

there is a lot of variation in soils even within the same farm. Extension recommendations would therefore be based on the specific conditions of the farm. The cost of carrying out soil testing should also be made affordable so that even the typical small-scale farmers can easily afford to have their soils tested.

Conclusion and Recommendations

India's success in agriculture is largely attributed to the Government's commitment to agriculture and willingness to do whatever it takes to ensure food security and increased incomes for farmers. There is national and state-level recognition and support to the role of agricultural extension, which is evidenced by the vibrant and effective performance of both the national and private sector extension services. There is a lot that Kenya can learn from India's extension service to ensure that current reforms are effectively managed, in order to have a vibrant agricultural extension service that will contribute to improved farmer livelihoods, food security and national economic growth. There is need for greater government support, and higher financial allocation to agriculture and to the extension service, both public and private. There is also need to encourage innovativeness in extension service provision both at national and county levels.

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