Executive summary

Declining effectiveness of the extension services is a major factor constraining progressive adoption of Integrated Soil Fertility Management (ISFM) technologies and innovations, and hence slowing growth of Kenyan agriculture. An effective agricultural extension service that provides stakeholders with relevant knowledge and information can improve agricultural productivity. Such information should include

Key messages

• A well coordinated and strengthened extension service through partnerships and stakeholder fora
• Quality assurance and regulation in extension service provision
• Capacity building of extension service providers.
• Increase investments for provision of extension service.
Improved soil health technologies and innovations, improved seeds and planting materials, crop husbandry, post harvest management and marketing. Targeting soil health extension service provision has already been necessitated by declining agricultural production. Access to the right soil health technologies for site-specific inputs at the right time is intended to increase farmers’ ability to optimize the use of their resources. There is little formal collaboration among extension providers a situation that has led to lack of synergy and poor access to extension support services. Thus collaboration is weak resulting in duplication of efforts and unnecessary competition. Additionally there is low appreciation of the importance of the role the extension service plays in supporting agricultural production.

Rationale for Extension service
The importance of increasing agricultural extension in relation to the fight against declining soil health and ever increasing poverty is underscored in the National Agricultural Sector Extension Programme (NASEP). However, limited knowledge and capacity of agricultural extension staff in disseminating the soil health technologies and innovations poses a challenge to adoption of appropriate soil health technologies and innovations.

Integrated Soil Fertility Management, Soil Health and Ecosystem functions

Integrated Soil Fertility Management (ISFM) is defined as the use of farming practices that involve the combined use of inorganic and organic inputs, improved seed and other planting materials combined with the knowledge on how to adapt these practices to local conditions so as to maximize the plant nutrient use efficiency while improving crop yields. All inputs need to be managed following sound farming principles.

Soil health (or soil quality) is defined as the capacity of a soil to continue to function as a vital living ecosystem that supports and sustains plants, animals, and humans. Ecosystem is described as a community of living organisms (plants, animals and microscopic life forms) in conjunction with the non-living components of the soil such as air, water and nutrients interacting as a system. Critical ecosystem functions or services include increasing the following: carbon storage, crop productivity, nutrient cycling between plant, soil and animals, water capture and infiltration and biodiversity (range and number of plants, animals and micro-organisms).
Kenya public extension comprises of about 5500 staff members managed by a team of 900 senior staff (MEAS, 2011) against 8.8 million households. The National frontline extension staff: farmer ratio is about 1:2000 against the internationally recommended ratio of 1:400. This limits access to extension services in most parts of the country. Furthermore, very few Information, Communication & Technology (ICT) Support workers are involved in ICT extension support services. There is need for recruitment of more extension staff and better use of ICT to improve access to extension services. Farmers, public and private sector extension agents, researchers and journalists all need to improve their knowledge and skills on soil health. Besides providing advice, skills and knowledge to increase agricultural productivity; capacity development can help them take advantage of market opportunities, adapt to climate change, forge new partnerships and learn how to make the best use of information and communication technologies (ICTs).

Thus the Challenges of extension service provision are:

- Inadequate funding for operations and maintenance.
- Limited collaboration and team work initiatives, among extension service providers resulting in conflicting messages to end-users.
- Inadequate institutional arrangements to support implementation programmes.
- Weak planning and lack of ownership
- Inadequate human and institutional capacity
- Limited communication and information sharing between the various actors.

Overview of extension approaches and constraints in Kenya

A number of extension approaches have been in use in Kenya and they have had varying degrees of success.

The Current extension approach used by many organizations is a combination of the following: - training and visit (T&V), focal
area, farmer field schools (FFS) and on-farm demonstrations, agriculture product value-chain (APVC), pluralist approach, participatory and demand driven. As a result of technological advancements, Information Communication Technology (ICT) has been incorporated into the approaches (e-extension).

There are four models for delivery and financing of extension services, these include:

(i) Public delivery and public finance: Comprises the traditional government agricultural extension services consisting of the research station-extension agents-farmer linkages. This channel is constrained by lack of funds and human and infrastructural capacity challenges to effectively provide services to farmers.

(ii) Public delivery and private finance: This is a form where government staff can be contracted by private agencies. The challenge is inadequate public extension staff, poor collaboration and networking between the public and private extension (iii) Private delivery and private finance: This is a private extension with minimal government participation. It includes outgrower schemes for cash and horticultural crops or producer associations.

(iv) Private delivery and public finance: This approach is an essential element of reforming the extension services. It entails outsourcing the responsibility for extension delivery to private sector providers, e.g., Community Based Organizations (CBOs). This channel has emerged as an important pathway, with several comparative advantages over the other channels, including grassroots contacts and use of participatory methods.

It is therefore important to create a well coordinated mechanism and extension service delivery system that allows key stakeholders in agricultural information extension to maximize their efforts by collaboration.

This can be done through:

(i) Strengthening of the formal and informal agricultural
extension services, including those provided by Non-Governmental Organizations (NGOs) and CBOs; (ii) Creating stronger linkages between all agricultural players in the value chain; (iii) Create an enabling environment for implementation of extension support services.

Proposed ISFM Extension Approaches

This policy brief proposes the following extension approaches for dissemination of ISFM technologies:

<table>
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<tr>
<th>Extension approach</th>
<th>What it entails</th>
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<tr>
<td><strong>Partnership and Collaboration Approach</strong></td>
<td>Collaboration and partnership between public and private sector and active participation of a range of other actors</td>
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<tr>
<td><strong>Embedded ISFM Extension Approach</strong></td>
<td>Embed ISFM extension packages i.e. advisory services with input agro-dealers</td>
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<tr>
<td><strong>e-ISFM Extension Approach</strong></td>
<td>Embracing Information Communication Technological (ICT) advancements such as mobile phone, lap top, Internet.</td>
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<td><strong>Strategic ISFM extension campaigns</strong></td>
<td>Use of mass media to convey ISFM knowledge and innovation. Achieve rapid impact because they reach large numbers of farmers in an area all at once, including remote locations normally not visited by extension service providers.</td>
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<tr>
<td><strong>Market-led ISFM Extension Approach</strong></td>
<td>A holistic farming approach that is business oriented and enterprise based (agribusiness)</td>
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Policy recommendations

The foregoing analysis brings us to the following policy recommendations:-

• Develop a well coordinated and strengthened extension service through partnerships and stakeholder fora: - This can be done by raising awareness of ISFM amongst stakeholders (private and public) and provide information needed to improve decision-making by policy makers, extension workers, input suppliers and other supply chain actors that influence the implementation of ISFM technologies. Focus should also go to influencing curricula in educational institutions that will positively impact on the capacity of future extension agents to promote state-of-the-art ISFM technologies in Kenya.

• Quality assurance and regulation in extension service provision: - There is need to enhance professionalism in extension service delivery, by developing extension providers’ service charters and agreements with clientele to enable the latter to demand and evaluate the quality of services offered. In the long term, there is need for regular monitoring system to assess the impact of extension and the different approaches used by different stakeholders this should be complimented with the establishment of a common professional association for extension agents to vet extension providers.

• Capacity building of extension service providers:- Currently the human resource capacity in the extension service comprises of about 4000 trained extension service providers against a population of about 9 million farm households. This is an indication that the extension service in Kenya is constrained by inadequate service providers. There is a need to develop and strengthen the technical and delivery capacity of agricultural extension staff in soil health management options. To achieve this, attention should be paid to capacity building in soil health for national agricultural research and extension systems, non-governmental organizations.
(NGOs), farmer organizations and input dealers.

• Increase investments for provision of extension service:- The main challenges to ensuring sustainable funding to agricultural extension include increasing resources allocated to fund public extension services and improving planning and coordinating the allocation of resources to extension by different stakeholders to minimize duplication and wastage. Less than 5% of the budgetary allocation for agriculture goes to extension service provision. As a result of this the extension is faced with the state of infrastructural collapse and hinders dissemination of agricultural technologies. There is need for concerted efforts by government and donors to increase fund allocation to the extension service as a way of ensuring adoption of proper agricultural production systems.

Further reading


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