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**MINISTRY OF AGRICULTURE, LIVESTOCK, FISHERIES AND
COOPERATIVES**

**KENYA AGRICULTURAL SECTOR
EXTENSION POLICY
(KASEP)**

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Map of Kenya Showing Counties



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TABLE OF CONTENTS

| | |
|---|-------------|
| FOREWORD | vi |
| PREFACE | viii |
| GLOSSARY OF TERMS | xi |
| EXECUTIVE SUMMARY | xii |
| CHAPTER ONE: INTRODUCTION | 14 |
| 1.1. Background | 14 |
| 1.1.1. Role of the Agricultural Sector | 14 |
| 1.1.2. Structure of the Agricultural Sector | 14 |
| 1.1.3. Overview of evolution of extension service in Kenya | 15 |
| 1.1.4. Role of Extension and Advisory Services in the Agricultural Sector | 17 |
| 1.1.5. Justification for Kenya Agricultural Sector Extension Policy 2022 | 18 |
| CHAPTER TWO: SITUATIONAL ANALYSIS | 20 |
| 2.1 Capacity in Extension Service Delivery | 20 |
| 2.1.1 Human Resource capacity | 20 |
| 2.1.2 Infrastructure | 21 |
| 2.1.3 Funding | 22 |
| 2.2 Knowledge Management | 22 |
| 2.3 Research-Extension-Clientele Linkages | 23 |
| 2.4. Partnership, Collaboration and Coordination | 24 |
| 2.5 Policy, Legal, Regulatory and Institutional Framework | 25 |
| 2.5.1. Policies | 25 |
| 2.5.2. Legal and Regulatory framework | 29 |
| 2.5.3 Institutional frameworks | 30 |
| 2.6 Extension Standards and Quality Assurance | 30 |
| 2.7 Extension and Advisory Approaches and Methods | 31 |
| 2.8 Cross-cutting Issues in Delivery of Agricultural Extension Services | 34 |
| CHAPTER THREE: POLICY OBJECTIVES AND INTERVENTIONS | 36 |
| 3.2. Agricultural Extension Policy Focus | 36 |
| 3.2.1. Overall Objective | 36 |
| 3.2.2. Specific Objectives | 36 |
| 3.2.3 Core Guiding Principles | 36 |

| | |
|--|-----------|
| 3.3. Challenges and Policy Interventions | 37 |
| 3.3.1. Capacity in Extension Service Delivery | 37 |
| a. Human Resource Capacity | 37 |
| b. Infrastructure | 37 |
| c. Funding | 38 |
| 3.4. Knowledge management | 38 |
| 3.5. Research-Extension-Client Linkages | 39 |
| 3.6. Partnership, Collaboration and Coordination | 40 |
| 3.7. Policy, Legal, Regulatory and Institutional framework for Extension and advisory Services | 40 |
| 3.8. Extension Standards and Quality Assurance | 40 |
| 3.9. Extension and Advisory Approaches and Methods | 41 |
| 3.10 Cross-cutting Issues in Delivery of Agricultural Extension Services | 41 |
| CHAPTER FOUR: POLICY IMPLEMENTATION AND COORDINATION | 45 |
| 4.1 KASEP Implementation Coordination Mechanism | 45 |
| 4.1.1 National Level | 45 |
| 4.1.2 County Level | 45 |
| 4.2 Financing and Investments for Agricultural Extension | 46 |
| 4.3 Monitoring, Evaluation and Review of Policy | 46 |
| 4.4 Communication Strategy | 46 |
| ANNEX 1: IMPLEMENTATION FRAMEWORK | 48 |

FOREWORD

Agriculture is a key sector in the country's economy, contributing about 23 per cent to the GDP and another 27 per cent indirectly through sector economic linkages (Economic Survey, 2021). It remains a major economic pillar that addresses the Vision 2030 agenda. Agricultural sector value chain actors that directly contribute to the realization of the objectives of the Vision 2030, depend on extension and advisory services provided by government and the private sector. Therefore, the Government of Kenya recognizes the important role that extension and advisory services play in transforming and modernizing the agriculture sector. Consequently, the government in collaboration with stakeholders, will continue to promote strategies aimed at stimulating growth and transformation in the sector through provision of efficient and effective extension and advisory services as outlined in the Agricultural Sector Transformation and Growth Strategy, (2019- 2029) that envisions; *A vibrant, commercial and modern agricultural sector that sustainably supports Kenya's development* in the context of devolution, short-term national aspirations for 100% food security, and longer-term global CAADP and the SDG commitments.

The National Agricultural Sector Extension Policy (NASEP) 2012 outlined the modalities for effective management and organization of agricultural extension services in a pluralistic system where both public and private service providers are active participants. The policy identified among other strategic interventions, the need to progressively move towards privatization and commercialization of extension service delivery; efficient, effective coordination and regulation of extension services and sustainability of extension service delivery through three financing models; public funded, cost sharing and private sector funding where the service is fully commercialized.

Following the enacted of the new constitution 2010 and its subsequent implementation over the last 10 years since the policy under review was enacted, a number of challenges have been noted. Therefore, the new policy, KASEP 2022, clarifies the distinct roles performed by the two levels of government as stipulated by the Fourth Schedule of the Constitution of Kenya 2010 and fully addresses the key issues identified in the policy under review. In addition, it provides a point of reference for service providers and other stakeholders on standards, ethics and approaches, and guides all players on how to strengthen coordination, partnership and collaboration.

The success of the implementation of this policy will depend on the commitment of all sector players: The National Government, County Government, private sector service providers,

development partners and all the sector value-chain actors. Implementation of this policy will contribute towards improved transfer of technology and management for higher agricultural sector productivity, a key prerequisite to poverty reduction and enhanced food and nutrition security.

The sector ministries and the County Governments are committed to spearheading the implementation of this policy by all stakeholders by establishing relevant frameworks necessary for improving extension management and services delivery in the country.

The Kenya Agricultural Sector Extension Policy was developed by technical experts from the Ministry of Agriculture, Livestock, Fisheries and Cooperatives jointly with various sector stakeholders. Wide consultations were made with stakeholders drawn from public and private sector institutions, universities, farmer organizations, NGOs and development partners among others. We highly appreciate the members of the team that worked tirelessly to ensure this policy is finalized and all the development partners who supported the process.

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PREFACE

The provision of effective and efficient extension and advisory services is undoubtedly critical in transforming the agricultural sector. The importance of the afore-mentioned services cannot be over-emphasized since the future of the sector is anchored upon it. In Kenya, the sector is characterized by an abundance of opportunities throughout the value chains that should be enhanced in the endeavor to realizing the objective of achieving 100 percent food and nutrition security.

The extension and advisory services serve as a crucial catalyst that aid especially the producers in the sector to realize their optimum potential which will not only culminate into increased production and productivity, creation of jobs and eradication of poverty, but will also fundamentally ensure sustainable food and nutrition security in the country.

There has been a need for a broader and effective agricultural extension policy framework that provides a coordinated and pluralistic approach and which acknowledges the significance of the extension and advisory services in respect of technology transfer, information sharing and skills development, particularly of smallholder producers across the sector. Information technology and digital technologies for extension services are playing an increasingly important role in reshaping the agri-food sector which is critical to stimulate economic growth.

The attainment of Kenya's Vision 2030 agenda will be incomplete without the full participation of the marginalized groups of actors especially women and youth that want to become successful agri-entrepreneurs and producers. The successful participation of the household and smallholder producers in the mainstream of the economy is dependent upon adequate provision of appropriate extension and advisory services.

It is our wish that the intervention measures outlined in the Kenya Agricultural Sector Extension Policy 2022 will enhance the standards of our agricultural extension systems and ensure that extension services will be prioritized given their impact on productivity. More support must be geared towards mobilizing adequate resources towards refreshing the extension and advisory services in the sector. This should deepen and demonstrate our commitment towards producers without whom our food sovereignty would be compromised.

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ACRONYMS AND ABBREVIATIONS

| | |
|---------|--|
| AAK | Aquaculture Associations of Kenya |
| AESP | Agricultural Extension Service Providers |
| AES | Agricultural Extension Services |
| AIDS | Acquired Immunodeficiency Syndrome |
| AMSs | Agricultural Mechanization Stations |
| APSK | Animal Production Society of Kenya |
| ASAL | Arid and Semi-Arid Land |
| ASTGS | Agriculture Sector Transformation and Growth Strategy |
| ATCs | Agricultural Training Centres |
| ATDCs | Agricultural Technology Development Centres |
| ATO | Agricultural Transformation Office |
| ATVET | Agricultural Technical Vocational Education and Training |
| CAADP | Comprehensive Africa Agriculture Development Programme |
| CASK | Commercial Aquaculture Society of Kenya` |
| CASSCOM | County Agricultural Sector Steering Committee |
| CBOs | Community Based Organizations |
| CIG | Common Interest Group |
| CMIS | Cooperative Management Information System |
| CRAC | Centre Research Advisory Committee |
| DIS | Disruptive Information System |
| EASS | East African Soil Science Society |
| ESP | Extension Service Providers |
| FAO | Food and Agriculture Organization |
| FFS | Farmer Field Schools |
| FOs | Farmer Organizations |
| GDP | Gross Domestic Product |
| HIV | Human Immunodeficiency Virus |
| ICT | Information and communication technology |
| IEC | Information Education Communication |
| IFPRI | International Food Policy Research Institute |
| JASCCOM | Joint Agricultural Sector Coordination Consultative Mechanism |
| KALRO | Kenya Agricultural and Livestock Research Organization |
| KAMIS | Kenya Agricultural Marketing Information System |
| KAOP | Kenya Agricultural Observatory Platform |
| KASEP | Kenya Agricultural Sector Extension Policy |
| KeFS | Kenya Fisheries Service |
| KLTA | Kenya Livestock Technician Association |
| KMFRI | Kenya Marine and Fisheries Research Institute |
| KVA | Kenya Veterinary Association |
| KVB | Kenya Veterinary Board |
| LMIS | Livestock Marketing Information System |
| MoALF&C | Ministry of Agriculture, Livestock, Fisheries and Cooperatives |
| MoUs | Memorandum of Understanding |
| NAEP | National Agricultural Extension Policy |

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| NALEP | National Agriculture and Livestock Extension Programme |
| NASEP | National Agricultural Sector Extension Policy |
| NGOs | Non-Governmental Organizations |
| PTCs | Pastoral Training Centres |
| SDG | Sustainable Development Goals |
| SMS | Subject Matter Specialist |
| SOCOA | Society of Crop Agribusiness Advisors of Kenya |
| SWAG | Sector Working Agriculture Thematic Group |
| TIUs | Technology Innovation Units |
| TVET | Technical Vocational Education and Training |

GLOSSARY OF TERMS

| | |
|----------------------------|---|
| Agriculture | In this document, agriculture means crop, livestock and fisheries |
| Agricultural sector | The crop, livestock and fishery subsectors”. The agricultural sector is functionally related to the land, water, environment, forestry and cooperative sectors |
| Farmer | A person, who grows crops, rears livestock or produces fish |
| Clientele | All the customers of a business when they are considered as a group. In this context all the actors along the value chain actors will be considered as clientele |

EXECUTIVE SUMMARY

Agricultural sector contributes about 23 per cent to the GDP and another 27 per cent indirectly through sector economic linkages; it accounts for 65 per cent of the country's export earnings. The Government therefore emphasizes on stimulating growth and transformation in the sector as provided for in the Agricultural Policy 2021 and outlined in the Agricultural Sector Transformation and Growth Strategy, (2019- 2029) that envisions; a vibrant, commercial and modern agricultural sector.

A well-functioning agricultural extension service operated by the public and private sectors is one of the critical inputs required for increased agricultural productivity to transform subsistence farming into a vibrant, commercial and modern farming, attain food security, improve incomes, create wealth and employment opportunities. It is, therefore, important to ensure that agricultural extension services are adequately funded, well-coordinated and regulated. Effective linkages between extension service providers (ESPs) and other stakeholders involved in technology development and provision of facilitating factors are critical.

Historically, the country used various extension management systems with varying degrees of success. These included whole farm extension approach, integrated agricultural development approach, and training and visit approach. These approaches had weaknesses as they were top-down and prescriptive with high demand on human, capital and financial resources. The National Agricultural Extension Policy (NAEP) addressed these weaknesses by articulating the importance of clientele participation and demand-driven extension system; recognizing the role of the private sector in pluralistic extension; and setting out modalities for commercialization and privatization of extensions services. The implementation of NAEP was less successful than initially anticipated due to inadequate institutional arrangements, narrow ownership, lack of a legal framework, lack of goodwill and commitment among some of the top managers coupled with the slow flow of resources.

The National Agricultural Sector Extension Policy (NASEP) 2012, adopted a sector-wide approach to providing extension services. The policy envisioned to enable the extension service to realize its vision: 'Kenyan agricultural extension clientele demand and access appropriate quality extension services from the best providers and attain higher productivity, increased incomes and improved standard of living'.

The Fourth Schedule of the Constitution of Kenya, 2010 provides for devolution of specific functions in agriculture to the County governments. The National government retains the

executive function of policy decision making under Part 1 Section 29 of the Fourth Schedule, while the counties take up the implementation task of the policies generated by the National government. Due to the importance of agriculture to economic development and realization of the Constitutional requirements, it is necessary to review the National Agricultural Sector Extension Policy 2012 that guides development of the agricultural extension in the Country to capture the spirit of devolution.

The main challenges in Extension Service delivery include: Institutional weaknesses in capacity building, technology development and dissemination; Harmonizing extension approaches and methods; Managing pluralistic extension service for effective service delivery; Commercializing and privatizing public extension services without compromising public interest; Weaknesses in research–extension–clientele linkages, packaging and disseminating technologies; Developing private sector operated extension services to complement public extension services; Creating functioning institutional frameworks to coordinate and provide linkages among stakeholders and mainstreaming cross-cutting issues in extension messages.

The Policy intends to address these challenges to ensure effectiveness and enhanced efficiency in extension service delivery through measures that includes; enhancing capacity for extension through human resource management and development, infrastructure for extension and funding; establish an integrated knowledge management system; improving research-extension-clientele linkages; improving coordination and enhancing partnerships and collaboration; and creation of a legal and institutional framework that support extension. In addition, the policy establishes frameworks for quality assurance for extension and advisory service providers; provide guidelines on extension approaches and methods to be used; and measures for mitigating cross-cutting issues that may affect extension service delivery.

CHAPTER ONE: INTRODUCTION

1.1. Background

1.1.1. Role of the Agricultural Sector

Agriculture is the mainstay of Kenya's economy, contributing 23% to GDP and a further 27% GDP indirectly through linkages with manufacturing and service-related sectors¹. The sector employs more than 40 per cent of the total population and more than 70 per cent of Kenya's rural people (Agricultural Sector Transformation and Growth Strategy, 2019-2029) and generally provides a livelihood for close to 80 per cent of the Kenyan population. As such, agriculture has the highest multiplier effect in the economy and the sector is central to the government's Big 4 development agenda, where agriculture aims to attain 100% food and nutritional security for all Kenyans by 2022.

Agriculture in Kenya contributes to food and nutrition security and creates employment opportunities thus raising the living standards of the population. It also generates foreign exchange through the export of crops, livestock and fisheries products. Agriculture supplies raw materials to industries, thus playing a big role in industrialization. It also provides a market for industrial goods like fertilizers, agricultural chemicals and agricultural machinery and equipment.

Agricultural transformation entails refocusing growth and development trajectory of the sector by improving sector productivity and efficiency in delivery of services along agricultural commodity value chains. This process requires continuous adoption to new technologies and adjustment to emerging trends. The main conduit for knowledge sharing is extension. New demands on extension system include helping agricultural value chain actors cope with climate change threats and other emerging risks. These require extension service providers to go beyond use of conventional technology transfer to other forms of knowledge sharing.

1.1.2. Structure of the Agricultural Sector

The Kenyan agricultural sector is dualistic in nature consisting of predominantly small-scale producers (farmers, fishers and pastoralists) and a relatively small number of large-scale producers. The total farming households as per the 2019 Census is approximately 6.4 million (1.7 million crop farmers, 3.9 million mixed farming, 760,000 Livestock farmers, and about 30,000 fisher folks) (Kenya Population and Housing Censuses, 2019).

¹ KNBS Economic Survey, 2021.

The small-scale sector accounts for 75 per cent of the total agricultural output and about 70 per cent of marketed agricultural produce. Small-scale producers under this category carry out;

- i. subsistence farming, fishing and pastoralism
- ii. small-scale commercial farming and fishing

Large-scale producers are mainly involved in cash crops, commercial livestock and commercial fish farming. These producers use more inputs and apply better farm management practices, and therefore realize higher enterprise returns.

These characteristics of the agricultural sector have important implications for the structural and institutional organization of both public and private extension and advisory services in terms of approach and content of extension service.

1.1.3. Overview of evolution of extension service in Kenya

Agricultural extension in Kenya dates back to the early 1900s. The extension system has evolved through various stages since the colonial and post-independence eras. The popular approaches during colonial times were mainly tailored to cater for settler commercial farming systems and were mainly commodity based. These were well-packaged programs that combined extension services with credit and subsidized inputs aimed at producing for specific markets. However, the extension approach used for indigenous Africans, who were mainly engaged in subsistence farming and pastoralism, was coercive in nature and therefore not readily accepted because of being settled in marginal areas. In 1954, the Swynnerton plan recommended that native African farmers be allowed to grow cash crops and keep dairy animals and be given an increase in technical assistance and have access to all marketing facilities.

Aquaculture extension dates back to the 1920s when Government introduced fish farming. In 1948 two farms, the Sagana Fish Farm and Kiganjo Trout Farm were set up to support aquaculture extension through the production of seeds for stocking ponds, dams and rivers. After independence, aquaculture extension was spearheaded by the Fisheries Department through the “Eat More Fish” Campaigns which led to a rapid expansion of aquaculture in Kenya. From 2009 to 2010, the Government introduced and implemented the Economic Stimulus Programme (ESP) in which aquaculture extension was a major focus. More persuasive and educational approaches and methods were adopted across the board, implemented mainly with the assistance of donor-funded projects and programmes.

The notable extension successes were in the dissemination of hybrid maize technology in the late 1960s and early 1970s, artificial insemination and cooperative movement through structured agricultural extension and establishment of farmer and pastoralist training centres, the whole farm extension approach, and use of integrated agricultural development approach. In the 1980s and 1990s the structured extension approaches included farming systems, training and visits. Alongside these, the 'commodity specialized approach' was predominantly used in the large export commodity subsector spearheaded by commodity boards and private companies.

Other changes included civil service reforms undertaken to pave way for the emergence of the private sector to fill the void created after Government withdrawal from crucial services such as artificial insemination, management of cattle dips and veterinary clinical services. However, since the private sector was not well developed, the reforms led to a decline in quality of these agricultural services as the private sector failed to adequately fill the gap created by reduced public sector involvement. Aspects of privatization reform include subcontracting, cost recovery, and commercialization. Extension and advisory service in Kenya has been historically considered public goods by virtue of the inability of subsistence farmers to pay for them individually.

The performance of the public extension service was negatively affected by reduced financing and extension manpower. These approaches were characterized by high demand for manpower, time and financial resources. Public extension system has been perceived to be top-down, paternalistic, uniform (one-size fits-all), inflexible, subject to bureaucratic inefficiencies and therefore unable to cope with the demand dynamics of modern agriculture. Based on lessons learnt from the approaches, the Government in collaboration with other stakeholders has in recent years embraced more participatory and demand-driven extension approaches.

To respond to these challenges, the then Ministry of Agriculture and Rural Development formulated the National Agricultural Extension Policy (NAEP) to guide improvements in delivery of extension services in 2001. The NAEP recognized the need to diversify, decentralize and strengthen the provision of extension services to increase their sustainability and relevance to farmers. The NAEP was meant to form the basis for all extension work within the government and in its interaction with other stakeholders in agricultural research and development. These was intended to tap farmer participation and private sector contribution in providing extension services. The policy was implemented

through among others the National Agriculture and Livestock Extension Programme (NALEP). The approaches that enhanced farmer participation included the focal area approach, farmer field schools (FFS), value chain approach, demand-driven approach among others.

NALEP was succeeded by the National Agricultural Sector Extension Policy 2012 that adopted a sector-wide approach to providing extension services. It provided a point of reference for service providers and other stakeholders on standards, ethics and approaches, and guided all players on how to strengthen coordination, partnership and collaboration. The Agriculture Sector Development Support Programme (ASDSP) that was developed pursuant to this policy and as a successor to NALEP, became operational at the onset of devolution in 2013. The programme's primary goal is to contribute to the transformation of crop, livestock and fisheries production into commercially oriented enterprises that ensure sustainable food and nutrition security by enhancing the capacity of different priority value chain actors at different levels.

Over the years, extension has emphasized on increasing production with little or no regard to value addition and marketing. However, it is now acknowledged that linking production with processing and marketing is a prerequisite in transforming agriculture from subsistence to a commercial enterprise.

1.1.4. Role of Extension and Advisory Services in the Agricultural Sector

Agricultural extension and advisory services can be defined broadly as a set of services and institutions that facilitate agricultural value chain actors to obtain information, skills and technologies to improve productivity, food and nutrition security and well-being². Extension and advisory services is an essential part of agricultural research and development. These are pertinent to effecting change and driving rural, urban and peri-urban agricultural development mainly through small-scale agricultural production. Across the world, agricultural extension forms one of the main conduits of agricultural development and transformation leading to rural poverty reduction and increased food security.

Extension and advisory services provide critical support to producers and other value chain actors in addressing matters relating to agriculture sector. These include rapid

² Danso-Abbeam, G.; Ehiakpor, D.S.; Aidoo, R. Agricultural Extension and its Effects on Farm Productivity and Income: Insight from Northern Ghana. *Agric. Food Secur.* 2018, 7, 1–10.

transformation in the global, regional and local food and agricultural system, growth in non-farm rural employment and agribusiness, deterioration of the natural resource base, climate change and constraints imposed by various health challenges.

Producers are among the value chain actors most vulnerable to climatic shocks and weather-related disasters that is compounded by market fluctuations, poor governance, conflicts and diseases. Extension and advisory services may provide an opportunity for strengthening the resilience of rural and farming households by increasing their access to resources such as agricultural knowledge and skills. Moreover, agricultural extension also provides a framework through which challenges constraining small-scale farmers can be identified for further investigation and for the development and modification of solution strategies and policies to guide the value chain actors.

Whereas research institutions focus on the technical aspects of generating useful technologies, the agricultural extension and advisory focuses on the transmission, acceptance and adoption of these technologies by farmers. Learning institutions such as universities, Technical and Vocational Education and Training Centres (TVETs), and agricultural sector training institutions also carry out research and outreach programmes.

Linkages between extension services, research and clientele feedback mechanisms have remained weak along commodity value chains. However, newer forms of innovation platforms that focus on market access and centre on specific value chains have shown a greater degree of linkages. As such there is need for a good agricultural extension policy to provide an institutional framework that supports sector coordination, collaboration and partnerships.

1.1.5. Justification for Kenya Agricultural Sector Extension Policy 2022

Agriculture remains a central contributor to overall national economic growth and development for the country. An effective and efficient agricultural extension is vital for steering and directing agricultural growth on a sustained development trajectory.

The Constitution of Kenya 2010, under Articles 6, 186(1) and 187(2) provides for a devolved system of government, the distinct and interdependent relationship between the two levels of government and the transfer of functions and powers between levels of government. Under Part 1 Section 29 and 30 of the Fourth Schedule, the Constitution of Kenya confers the power of agricultural and veterinary policies to national government

while Part 2 Section 1 provides for implementation of agricultural functions by County Governments.

The National Agricultural Sector Extension Policy 2012 did not sufficiently take into account the constitutional provisions underpinning devolution and the functions of the two levels of Government as relates to agricultural extension. In addition, with the creation of counties, there is need to have a policy that, while addressing national extension requirements, also provides a framework for addressing county specific priorities, takes into account county specific challenges and creates an effective framework for extension service coordination while fostering pluralism, partnerships and collaboration at both National and County levels. It is therefore necessary to review the National Agricultural Sector Extension Policy of 2012 to align with constitutional provisions on devolution.

Over the past years, the agricultural sector and in particular extension and advisory services provision have witnessed many changes. These changes include: the emergence of new extension approaches and methods; the rise of digitalization of processes; increased urbanization and urban farming; improved awareness, age dynamics and changing preferences of the extension clientele and the consumer of agricultural commodities; increased consumer attention to environmentally sustainable and good agricultural practices, animal welfare; food and nutrition security; food safety; farm to fork/value chain approaches to extension; social inclusivity; private sector participation and a host of other cross cutting issues that touch on extension.

The emergence of these changes in the extension space calls for a more focused extension policy that takes into account these new dynamics and global trends.

CHAPTER TWO: SITUATIONAL ANALYSIS

2.1 Capacity in Extension Service Delivery

2.1.1 Human Resource capacity

Agricultural extension service delivery to clients should ideally be prompt and appropriate for practical application of the information, knowledge and innovations being transferred. This will subsequently spur agricultural productivity, food and nutrition security, improve livelihoods, and promote agriculture as a pillar of households' economic. It is therefore imperative that adequate human resource capacity is required to make this achievable.

At the County level, public agriculture extension structure encompasses deployment of extension personnel to support the farmers at the sub-county and ward levels. The duties and responsibilities of extension personnel at the ward level include daily technical planning, supervision, monitoring and reporting of the field activities geared towards food and nutrition security attainment. At the sub-county level, the extension personnel are charged with administrative duties and coordination of all agricultural related activities in the wards. At the county level, the extension personnel are also deployed as Subject Matter Specialist (SMS) in the respective subsectors of crops, livestock, fisheries and cooperatives. Some of them are also attached to specific programs or projects at the county level.

Despite some counties employing extension personnel, the ratio of extension staff to farmer has continued to widen. To address this gap, the Government in the year, 2019 launched the Agriculture Sector Transformation and Growth Strategy (2019-2029) whose objective is to ensure that the country attains a ratio of one (1) extension personnel against six hundred (600) farmers by the year, 2029. This therefore calls for strengthening coordination among extension service providers for improved provision of agricultural extension and advisory services as well as utilization of Information and communication technology to realize this standard.

The private sector employs agricultural personnel who are inadequate to meet their staffing needs. As a result, they rely on public extension workers to deliver on their tasks. This reliance diverts public extension work force thus hampering the quality of extension services offered.

Requisite education and technical qualification for efficient extension service delivery is important. The role of extension in agricultural development is continuously evolving requiring new skill sets which the extension service personnel do not possess due to lack of programmes for continuous upgrading. Additionally, extension service personnel have inadequate range of specialized technical skills and scope of knowledge on extension delivery.

The average age of public extension workers is 50 years old (*Extension Staff Rapid Assessment Report, 2021*). It is notable that a significant proportion of staff is now nearing retirement age. The biggest concern is that it would take some time for the newly employed staff to gain the experience of those they would be succeeding.

The continued trend of low intake in the public and private training institutions in the country only exacerbates this situation. The declining intake in the agricultural related courses and subsequently careers is attributable to the unattractiveness of the agricultural sector and insufficient information regarding the agricultural career choices and mentorship programmes. It is imperative that matters of extension services are entrenched at the lower and secondary education levels as well as reviewing the extension services training curriculum to respond the emerging trends and innovations.

2.1.2 Infrastructure

The infrastructure supporting extension service provision are buildings and offices, transport facilities, ICT and laboratories found in institutions and facilities that undertake extension. These institutions and facilities include experimental and demonstration farms, agricultural training institutions, Agricultural Technology Development Centres (ATDCs), Agricultural Mechanization Stations (AMSs), Aquaculture Training Institutions, Hatcheries, Efficacy Trial Centres and Livestock Genetic Conservation Centres. Inadequate ICT and associated infrastructural development continue to affect the changing trends of adapting e-extension services. There is need for the public extension service providers to adapt to this emerging trends and innovations and therefore important that agricultural extension personnel are equipped with the necessary infrastructure fit for purpose to effectively deliver on their tasks. However, the existing infrastructure is inadequate in number with limited equipment and unevenly distributed across the country. Further, the utilization of existing infrastructure is insufficient thereby affecting delivery of extension services.

2.1.3 Funding

Extension service provision is mainly public funded. In most cases, the financing of the services is inadequate which necessitates the funding from strategic partners, NGOs and private sector. The strategic and development partners' funds are mostly channeled to development expenditures. However, the sustainability of such funds is usually uncertain and unstable due to the changing policies of the strategic and development partners. In the long term, this form of funding is not a sustainable strategy for agricultural extension services financing. The inadequacy of funds hampers the performance of extension services, especially in terms of meeting operational costs and sufficient staffing numbers.

Since 2013, County Governments have gradually increased funding to the agricultural sector. However, limited resources have been set aside to support the provision of the extension services hampering extension provision across the country. Therefore, there is need to increase funding for public extension services as well as ring-fence the funds at the county level and ensure access for the specific purposes of provision of extension services.

2.2 Knowledge Management

The process of collecting, creating, sharing, using and managing conventional and traditional /indigenous agricultural knowledge and information is critical for effective and efficient delivery of Agricultural extension and advisory services. Knowledge management is important for tracking implementation of policy, strategies and programs. In addition, enhanced knowledge management system supports concise decisions which are harmonized across the sector and the availability of data and information to all players within the agriculture sector. The current knowledge management system is fragmented. Various public and private actors in different ways generate, promote and share agricultural-related knowledge, skills and information. As a result of the actors operating in silos, the end users are unable to access and use information generated. Consequently, Stakeholders especially women and youth mostly rely on informal sources of information.

There are various digital platforms for knowledge management that are operational such as the Ministry website, County digital platforms, Big Data System domiciled at KALRO, Kenya Integrated Agricultural Marketing Information System (KIAMIS), Livestock Marketing Information System (LMIS), Kenya Agricultural Observatory Platform (KAOP) and Cooperative Management Information System (CMIS). Additionally, there are mechanisms for dissemination of information through private sector supported Disruptive Information System (DIS) innovations.

Institutional repositories in public, private and non-state sector space serve an important role in knowledge management for instance. Information and communication technology (ICT) platforms are key to the functioning of knowledge management systems. The alignment of this repositories and ICT platforms to the constitution, the Data Protection Act 2019, and other relevant laws is important in knowledge management. Further low network connectivity, low accessibility and prohibitive costs have resulted in low use of ICT. The rapid technological advances in the ICT arena demands continuous Human resource capacity development. The requisite competences in ICT such as computer programmers, software developers and among others that are necessary for development, maintenance and sustenance of the Agricultural knowledge management infrastructure in Agricultural Extension Service Providers (AESP) is inadequate.

2.3 Research-Extension-Clientele Linkages

Research and development of agricultural technologies that respond to client needs are important aspects in ensuring a vibrant agricultural sector. The research and technology development is mainly conducted by academic institutions, National and International agricultural research institutions. Additionally, some local and multi-national companies are also engaged in research.

These institutions that undertake agricultural research have accumulated numerous research and technological outputs that can greatly contribute to increased productivity. Research-extension-clientele linkages are the platforms that enable the interaction and exchange of agricultural research information from the researchers to the value chain actors through the extension service providers and vice versa.

Prior to enactment of the Kenya Agricultural and Livestock Research 2013 (KALR Act), there were structures which were organized and supported by the government through the Kenya Agricultural Research Institute (KARI) to enable linkages between research, extension and farmers. These structures which included Centre Research Advisory Committee (CRAC), Agricultural Technology and Information Response Initiative (ATIRI), and specific research-extension programmes within KARI and the then Ministry of Agriculture, brought together researchers, extension providers and private sector for planning and research agenda priority setting, exchange of agricultural technology and feedback. These structures remained largely dormant in the years leading to enactment of KALR Act. The KALR Act established the Kenya Agricultural and Livestock Research Organization (KALRO) which established institutes responsible for various aspects of agricultural value chains and subsector research. However, the KALR Act did not establish structures to support research-extension-farmer/clientele linkages.

There is therefore a growing gap between research and extension due to weak extension-research-clientele linkages. Consequently, resource allocation to research has not been informed by client priorities and demands. In addition, feedback from users of research outputs to inform further research and adaption of existing technologies have been constrained by poor linkages.

Although there have been efforts through the Intergovernmental Institutions such as Joint Agricultural Sector Steering Committee (JASSCOM) and County Agricultural Sector Steering Committee (CASSCOM) to strengthen the research extension linkages, these efforts have realized limited success due to inadequate resource allocations.

2.4. Partnership, Collaboration and Coordination

In a liberalized market and private sector driven economic environment, partnership, coordination and collaboration, are important aspects in the provision and delivery of extension services. The scope of providing extension and advisory services is beyond one single actor. Several actors in public and private sector (Research Organizations, Development partners, Non-Governmental Organizations (NGOs), Farmer Organizations (FOs), agricultural institutions and schools, and Community Based Organizations (CBOs) are increasingly providing extension services in Kenya.

2.4.1 Partnerships

Partnerships in delivery of agricultural extension services exist in different forms including those between the County Governments and private sector, private sector and farmer organizations, private sector and CBOs, donors and schools, among others. Partnerships between public and private sector extension and advisory services are essential to overcome the effects of limited resources, to meet the growing demand for food and sustain the natural resource base. Most are involved in input supply for assessing performance to track yields and uses a start to end approach. Other activities include capacity building, research, financing, technical advice, technology development and transfer.

These partnerships may involve signing of MoUs or other documents to facilitate their activities. Partnerships exist to share capital, skill and labour. However, there is limited monitoring to generate data and there are no guidelines on partnerships. With partnerships, there is a chance of a scale up if performance is good.

2.4.2 Collaboration

A number of different actors in AES collaborate to perform certain extension activities and may not necessarily have formal or structured arrangements. The collaboration may be for capacity building, value addition, marketing and inputs provision. Such collaborations exist in the Counties and may include extension service providers from the public, private sector and clientele. Such collaborations are usually weak and sometimes may not achieve the desired objectives as there are no binding agreements.

2.4.3 Coordination

The current situation with respect to coordination in extension and advisory service delivery only exists between partnering institutions. At the national level, JASSCOM exists as a coordination and cooperation mechanism between the two levels of Governments. The Research, Extension and Capacity Building, Sector Working (Agriculture) Group (SWAG) is one of the four SWAGs established by Joint Agriculture Sector Steering Committee (JASSCOM) to enhance the effectiveness of intergovernmental technical consultation with the mandate of facilitating capacity building of national and county bodies aimed at mainstreaming good intergovernmental governance, consultation and partnership practice. At the county level, CASSCOMs exist though are yet to be legalized, most are weak and currently there is limited coordination of AESP.

The existence of multiple extension service providers promote the adoption and application of technological innovations in agriculture. The multiplicity of extension service providers calls for coordination to ensure delivery of quality services, effectiveness and accountability.

In summary, the weak partnerships and collaboration, and the uncoordinated nature of agricultural extension service delivery by actors has resulted in duplication of efforts, conflict of interest, and wastage of resources and disintegrated service delivery to the clientele.

2.5 Policy, Legal, Regulatory and Institutional Framework

2.5.1. Policies

Agricultural Policy, 2021

The Agriculture Policy 2021 was developed to address identified challenges in the agriculture sector and outlined suitable guidelines to National and County Governments to address them. It specified the different roles of the governments towards ensuring household and national food and nutrition security; food safety; increasing agricultural productivity through use of appropriate good quality and affordable farm inputs; facilitating access to premium, domestic, regional and international markets; and reducing postharvest losses while promoting agribusiness, value

addition and product development. The policy included guidelines relating to the promotion of demand-driven research and timely dissemination of research findings in the agricultural sector.

The Agriculture Policy 2021 recognizes agriculture extension and advisory services as an important avenue of sharing knowledge, technologies, and agricultural information and as a link between producers and other actors in the economy. According to the policy, there is increasing demand for extension services due to a rapidly growing youthful population that has a limited knowledge for investment in agricultural activities. Further, it notes that regulation of both the public and private sector extension services has been mostly ineffective. The objective of the Agricultural Policy on extension is to promote appropriate, cost effective and affordable extension services for different agro-ecological zones through strengthening research-extension-farmer liaisons, regulation and quality assurance, enhancing private sector engagement and provision of adequate resources towards the delivery of extension services among others.

Agriculture Sector Transformation and growth Strategy (ASTGS 2019-2029).

In order to transform and modernize agriculture to ensure food and nutrition security and provision of raw materials to the manufacturing sector, the Government has developed nine Flagships through a ten-year Agriculture Sector Transformation and growth Strategy (ASTGS). The strategy identifies agriculture as the leading productive sector for economic recovery and recognizes revival of agricultural institutions and investment in agricultural research and extension as critical and essential for sustainable economic growth.

The ASTGS takes an evidence-based approach, as well as a sharp focus on implementation and delivery with the Counties playing a key role. This approach is the basis for realizing the objectives specified in the strategy which are: increasing incomes for small-scale farmers, pastoralists and fisher folk; increasing agricultural output and value addition and improving household food resilience. The strategy has specific targets to be achieved within the first five year relating to extension which include building technical and management skills in the field for 200 National and County Government transformation leaders, 1000 farmer-facing SMEs, and 3000 extension agents among others. In addition, the strategy integrates the use of the e-voucher system for input provision, extension services to inform farmers of soil needs among other strategies aimed at promoting the provisions of extension services across the country.

National Agricultural Sector Extension Policy 2012

The Policy sought to promote and guide the realization of demand-driven, sustainable and effective pluralistic extension system. It envisioned that the extension clientele would demand and access appropriate quality extension services from the best providers and attain higher productivity, increased incomes and improved standard of living. The Policy did not take into account the constitutional provisions underpinning devolution; the functions of the two levels of Government as relates to agricultural extension were not clearly defined. The policy recognized the need for pluralism in extension service provision but this has remained uncoordinated and lacks a framework to ensure standards and quality in extension service delivery. There is therefore the need for a framework for extension service coordination while fostering pluralism, partnerships and collaboration at both county and national levels. On data and knowledge management the policy lacked clear direction on integrated data and knowledge management systems that would ensure efficiency knowledge management in the agricultural sector.

National Livestock Policy, 2020

The policy advocates for strong research and extension institutions that are key for enhancing competitiveness in the livestock industry and increasing livestock productivity. The policy proposes various intervention measures to address the main constraints in extension service delivery within the livestock sub-sector which include: low investment in livestock extension, inadequate content in extension packages, minimal collaboration among various extension service providers and insufficient attention to socio-economic factors that affect livestock production and marketing.

Veterinary Policy, 2019

The policy recognizes that low animal productivity is due to challenges such as poor genetics, inadequate uptake of modern breeding technologies, a weak infrastructure for animal production, animal diseases and inadequate extension services.

National Food and Nutrition Security Policy, 2011

The policy proposes establishment of expanded and purposefully linked agricultural and nutritional research and strengthened extension that are needed to better develop and disseminate suitable technologies to sustainably address food security and nutrition. The policy is alive to the fact that low extension worker to farmer ratios, limited capacity to analyze data and low frequency of agricultural censuses and surveys, raise general concerns over data reliability impacting negatively on extension service provision.

National Agricultural Research Policy, 2012

The policy recognizes that the ingredients of achieving its objectives are the linking of research products to markets while organizing producers and providing effective extension services throughout the value chain continuum. The policy recognizes that many technologies for enhancing productivity and product development exist but have remained on the shelves. The situation is exacerbated by the growing gap between research and extension due to poor research-extension clientele linkage, inadequate appropriate extension methodologies and functional mechanisms.

National Environment Policy, 2014

The policy recognizes formal education as important to increase awareness, improve extension services, sensitize people on environmental issues and build institutional capacities.

National Land Policy Sessional Paper No 3, 2009

The policy states one of its principles as creating an enabling environment for agriculture and livestock development as well as other uses, including research, extension services, finance and infrastructure, marketing, agro-processing, rural electrification and training of farmers.

Sessional Paper No. 5 of 2016 on National Climate Change Framework Policy

The policy provides for incorporation of climate change knowledge into government implemented public awareness initiatives including civic education and extension programmes.

National Information, Communications and Technology (ICT) Policy, 2019

The policy predicts that, by the year 2030, Kenya will have an estimated population of 66M, with over 200M devices and sensors connected to the internet. It further states that, all aspects of lives including money, security, governance, agriculture, tourism, education and health will be fully and seamlessly integrated into the digital economy.

National Aquaculture Policy, 2011

The policy recognizes that Government will strengthen pluralistic approach extension, research-extension linkages to enhance technology development, packaging, dissemination and adoption. The Government will encourage privatization, decentralization and diversification of extension services in areas/enterprises that attract private sector operations.

National Oceans and Fisheries Policy, 2008

The policy recognizes that, over the years, the production from aquaculture has been hampered by lack of appropriate technologies, fish feed, fish seeds and weak extension services. The policy then advocates for the reform and improvement of the current extension services to enhance efficiency and effectiveness through private public partnerships in line with the National Agriculture Extension Strategy by building the capacity of staff, fishers' groups and fish farmers.

2.5.2. Legal and Regulatory framework

(a) The Constitution of Kenya

The Constitution of Kenya has assigned functions to the National and County Governments under the Fourth Schedule. The National Government has been assigned the function of development of national extension policy, standards and guidelines for extension and advisory services, capacity building and technical assistance to the Counties in all matters provision of extension services.

On the other hand, the County Governments are responsible for agriculture, including— crop and animal husbandry, livestock sale yards, county abattoirs, plant and animal disease control, fisheries, veterinary services cooperative development. This therefore means that the County Governments are responsible for provision of extension and advisory services and farmer advisory service in crops, livestock fisheries and cooperative development subsectors.

b) Relevant legal frameworks

The country has enacted various laws which provides for extension services and farmer advisory services such as the Crops Act No. 16 of 2013, the Fisheries Management and Development Act, 2016, Veterinary Surgeons and Para professions Act No.29 of 2011, Animal Diseases Act, cooperative societies Act, 2012 among other legislation. These pieces of legislation mandate various National Government institutions such as the Agriculture and Food Authority, Kenya Fisheries Service to put in place programmes for ensuring the provision of the technical support including research and extension services to growers and dealers as well as provide a national framework of extension and training services.

Although regulatory initiatives and strategies mentioned above aimed at ensuring improved extension and advisory services, the non-conformity of the national policy framework to the Constitution means that the implementation of these strategies has been limited to the varied and subjective interpretations by stakeholders. The extension and advisory service providers (EASPs), have limited formal guidelines, governing code of ethics and working standards. The practice therefore, is for every EASPs to apply what they regard as appropriate. Consequently, some providers venture into extension services without adequately trained personnel and/or the pre-requisite extension working tools, thereby adversely affecting the quality of services offered. Thus, extension and advisory services in Kenya remain unregulated.

2.5.3 Institutional frameworks

Currently there exist a number of institutions involved in agricultural extension. These institutions the National and County Governments, academic and research institutions, development partners, non-state actors and the private sector.

2.5.4 Professional Associations

There exist professional associations such as the, Kenya Livestock Technician Association (KLTA), Kenya Forum for Agricultural Advisory Services (KEFAAS), East African Soil Science Society (EASS) Animal Production Society of Kenya (APSK), Society of Crop Agribusiness Advisors of Kenya (SOCAA) and Kenya Veterinary Association (KVA) which mostly deal with welfare issues of their members. These associations provide information, capacity building and some regulate their professionals in terms of quality and standards.

2.6 Extension Standards and Quality Assurance

Agricultural Extension Service (AES) is defined as systems that facilitate and support the access of farmers, their organizations and other value chain actors to knowledge, information and technologies. Standards are authoritative principle or rule that usually implies a model or pattern for guidance whereas quality assurance is the maintenance of a desired level of excellence in a service or product, especially by means of attention to every stage of the process of delivery or production.

The current situation on capacity building of AES is that institutions develop their own curriculum and certification and lack structured and harmonized qualification assessment framework that produces hands on sector specific skills.

Some extension service providers engage in extension services without requisite extension qualification. Many extension service providers develop their own messages which they disseminate to clients through digital platform, print and electronic media, and other Information Education Communication (IEC) materials. These agricultural extension messages are usually not verified or censored and they vary in standards and quality. This leads to erroneous, inaccurate, incomplete and biased information thus confusing the farmers. Currently there exist no credible certification and accreditation institution for agricultural extension.

Standards and guidelines for agricultural extension and advisory services were developed in 2017 by the MOALF&C in consultation with the county governments and other stakeholders. This was aimed at maintaining professionalism, harmony and consistency in the AES delivery

targeting all agricultural sector stakeholders. However, due to absence of legal framework for enforcement the envisaged standards and quality are yet to be achieved.

2.7 Extension and Advisory Approaches and Methods

There are various extension and advisory approaches and methods currently in use.

2.7.1 Extension Approaches

Different extension providers use different extension approaches which include Demand Driven, Common Interest Group (CIG), Lead Farmer, Focal Area, Farmer Field Schools, plant and veterinary clinics value chains, schools and institutional approach such as Agricultural/Pastoral Training Centers (ATCs/PTCs), 4KClubs, Farmers' Cooperative societies and Young Farmers Clubs, market-oriented extension, Small Holder Horticulture Empowerment Promotion(SHEP), village based advisors, cost-sharing approach and Learning visits/tours.

Approaches such as the FFS, focal area and CIG are participatory in nature and more effective as these approaches move along the entire value chain. However, they have to be well facilitated and supported. Globally, market-oriented extension has frequently and appropriately become an integral part of extension activities. However, capacities and information to provide market-oriented extension are inadequate. Cost-sharing is mainly used where the public or private sector provides an input subsidy to the farmers though the approach was not sustainable.

In some cases, there has been a tendency to replicate a particular approach across different agro-ecological zones and farming systems even in instances where they do not apply. The demand driven approach for instance ensures that a specific service requested by the client is provided, the clients are more receptive and organized. However, this approach bases on the assumption that the client knows what he needs while this may not be the case. It is often uncoordinated because of the varied demands and therefore time consuming for the extension officer who has to serve the various clients.

Similarly, inadequate multi-skilled extension service providers and low funding has led to piece-meal extension service delivery to clientele usually faced with multiple problems. Additionally, non-state service providers have come up with innovative methods that are attractive to farmers and especially the youth which combine credit, technology, good agricultural practices and social cohesion among the beneficiaries to ensure effective application of technology for increased farm productivity and sustainability.

However, the cost of some technology is relatively high in regard to access to internet, availability of electricity and complexity of utilization of ICT tools. It is also hampered by lack of a compatible gadget and low literacy levels of farmers.

The lead farmer approach enhances social cohesion among the farmers within the catchment areas although it is sometimes derailed by sociocultural factors which hinder access to information from lead farmer. The farmer-to-farmer approach is readily available to the fellow peers, cost effective and promotes creativity and personalized attention to specific need. The approach is not without constraints though as it locks out participation of wider stakeholder. It also results in replication of value chains without considering good agricultural practices. In certain instances, it results to spread of pests and disease from one crop to another due to lack of information on good management and practices.

The group approach has ability to mobilize different persons with common interest. On the contrary, it often fails to realize expected results due to management challenges, resource mobilization constraints and competing interests. The farmer field schools, is characterized by participatory engagement, defined content, well scheduled interactions and practical implementation of skills learnt. In spite of all these benefits, only a few farmers benefit at a time. Besides this, the value chain approach promotes establishment of farmer organizations, enhances partnerships, collaboration and stakeholder engagement. It also creates direct links among the different value chain actors. However, it is often characterized by weak linkages and networking among the players. In addition, resource constraints arising from high cost of inputs, lengthy certification process and maintenance of high-quality standards weigh down the value chain actors. Climate change interferes with the production node while inadequate infrastructure affects marketing and value addition.

Field days approach brings several players together, is cost-effective since several technologies are disseminated at one point and many clients are reached. The demerits include high cost of organizing, they are time consuming and characterized by low attendance in the advent of pandemics.

Plant clinics respond to farmers' needs in good time, allows one on one engagement between the farmer and extension worker, results in safe use of pesticides and leads to reduction of pre harvest losses. On the other hand, are riddled with high cost of technology implementation, emergence of new strains of diseases, limited coverage and inadequate personnel besides being costly and time consuming.

In an attempt to skill the youth the ATVET approach has been adopted. It offers specific technical skills; curriculum can be customized to meet the industry demands. However, there are few registered TVET institutions due to the lengthy accreditation process. Most of the institutions have inadequate facilities and facilitators, in-extensive curricula and high cost of training.

The Village-Based Advisors (VBA) approach focuses on training clientele on yield-enhancing technologies including Good Agronomic Practices (GAP) with the majority of the VBAs graduating to become agri-entrepreneurs, either becoming agro-dealers, agents of agro-dealers/seed companies or agents of off takers. The advisors deliver critical extension services, underlying their crucial role of directly improving the productivity and livelihoods of smallholder farmers. The advisors generate own income from different business lines including sale of inputs, and also as Agents of aggregation for farmers' produce. Apart from creating rural self-employment opportunities, VBAs help producers sustainably access technologies and services at the last-mile thereby reducing the distance farmers have to travel to purchase yield-enhancing inputs. The impact of the approach can be improved if VBAs have a forum for providing constant input in their achievements, challenges and vision.

Challenges facing VBA approach include lack of access to finance to expand businesses, as well as with transport to reach farmers. As a result, many VBAs are forced to reduce the number of farmers they can mobilize for training, meaning they have to make more visits to reach individual farmers.

The SHEP approach was based on two conceptual pillars that address issues related to promoting farming as a business, and empowering and motivating farmers. It had two pillars that included one on promoting farming as a business and the other on empowering and motivating producers. The approach was developed as market orientated extension methodology. It enhanced the linkage between smallholder farmers and market. Success of SHEP in Kenya was shared with other countries and SHEP Approach has since expanded to other countries.

2.7.2 Extension Methods

In Kenya, the current extension methodologies used by different AESPs include;

- i. Individual methods such as farm visits, office visits, farmer to farmer, on-farm demonstrations, e-extension, adaptive on-farm trials, agricultural information desks, technology and agro-dealer shops.

- ii. Group methods include exhibitions, tours, exchange visits, trade fairs, shows, field days, e-extension, agricultural information desks and mobile training units.
- iii. Mass media methods include videos, radio, television, e-extension and bulk SMSs.

Group methods such as field days, exhibitions and demonstrations are widely used while the use of lead farmers and e-extension is growing. Mass media methods have a larger outreach and audience especially in rural areas though they lack the practical aspects required for the necessary learning and adoption of technology by the target clientele. In addition, they are expensive and may not be interactive in nature.

Other shortcomings arise from application of unsustainable approaches and methods such as use of handouts disguised as empowerment tools by some service providers, leading to the creation of dependency syndrome and limited client participation. Some of these approaches and methods have been fairly static, emphasizing increasing production with little regard for value addition and marketing, which are critical in transforming agriculture from subsistence to commercial enterprise.

Further, some of the approaches and methods are weak in addressing crucial issues such as governance in farmer organizations, mainstreaming cross-cutting issues, and fail to target marginalized groups. Some approaches and methods have also tended to ignore the importance of indigenous knowledge in their extension and advisory messages.

The choice of an appropriate dynamic and holistic approaches must consider client socio-economic environment, value chain, market demand, cost effectiveness, agro-ecological diversity, client resourcefulness, and that mainstream relevant cross-cutting issues.

2.8 Cross-cutting Issues in Delivery of Agricultural Extension Services

Extension services are impacted by cross-cutting issues that contribute to the development of holistic environment for agricultural communities. Some of the cross-cutting issues includes: pandemics like Covid-19; social inclusivity of gender, youth and persons living with disabilities; drug and substance abuse and climate change.

Pandemics have affected extension service delivery by limiting mobility where certain extension methods such as face to face would be more effective. Inclusivity is a challenge in extension service in that women, youth and persons living with disabilities have not been given sufficient consideration. Women play a pivotal role in agricultural production yet their access to agricultural information and resources is limited. Youth involvement in agriculture is low due to

limited knowledge and resources for investment in agricultural activities. In addition, the extension approaches and methods used are not youth friendly.

Farmers face significant losses in the current environment as a result of hazards and shocks such as floods, drought, locust invasion, animal and crop pests and diseases. Mitigation efforts in the aftermath of such disasters have been reactive rather than proactive. In most cases provision of extension services has not put emphasis on environmental conservation as a key component of production. In the current scenario, environmental concerns are mainly integrated in specific donor-funded programmes which lead to limited interventions that mitigate against climate change effects on agricultural productivity.

Drug and substance abuse by some extension workers and targeted clientele affects extension service delivery and agricultural production. It affects the work place and make workers unable to carry out their duties. In addition, it is related to petty crime where victims become corrupt and steal in order to access money for buying drugs.

CHAPTER THREE: POLICY OBJECTIVES AND INTERVENTIONS

3.2. Agricultural Extension Policy Focus

3.2.1. Overall Objective

The broad objective is to increase efficiency and effectiveness of extension services for increased productivity of the entire food system and improve yields, income and welfare of value chain actors.

3.2.2. Specific Objectives

The specific objectives of the policy are to:

- i. Establish a framework for developing and managing human resources, and infrastructure to facilitate efficient capacity utilization in agricultural extension provision
- ii. Enhance knowledge management system for efficient and effective extension service delivery
- iii. Strengthen research-extension-clientele linkages in agricultural sector
- iv. Ensure a pluralistic and coordinated approach for the provision of extension and advisory services by public, private and non-profit organizations
- v. Create a conducive legal, regulatory and institutional framework that facilitates coordination and regulation of agricultural extension services
- vi. Promote professionalism and ensure quality in the delivery of Agricultural Extension Services.
- vii. Ensure effective, efficient and sustainable technology transfer to agricultural extension to meet the needs of clientele in order to improve production and productivity
- viii. Mainstream cross-cutting issues in provision of extension services

3.2.3 Core Guiding Principles

- i. Productivity and income generation
- ii. Social inclusivity and equity
- iii. Pluralism and integration of extension approaches
- iv. Demand driven and market-oriented extension
- v. Coordination, collaboration and partnership
- vi. Foster sustainability

3.3. Challenges and Policy Interventions

3.3.1. Capacity in Extension Service Delivery

To address the issues of capacity in extension service delivery, this Policy will look at the challenges in human resource capacity, infrastructure and funding and provide the strategic policy interventions to adequately address the challenges.

a. Human Resource Capacity Challenges

- i. Low staffing levels in both public and private extension service providers resulting in a high extension staff to farmer ratio;
- ii. Low levels of specialized skills and scope of knowledge for extension delivery
- iii. Inadequate institutional capacity to train personnel (extension providers and researchers) on important emerging issues such as organic farming, biotechnology, and the characterization and selection of indigenous plants and animals of socio-economic importance.
- iv. Low enrollment by the youth to agriculture related courses.

Policy interventions

The National Government will:

- i. Provide technical assistance and capacity building to the County Governments and private sector for effective extension provision
- ii. Support institutions in extension curriculum review to meet emerging trends, technology and innovations.
- iii. Strengthen capacity of public institutions to offer continuous training on extension.
- iv. Develop training and learning materials

The County Governments will:

- i. Support in-service trainings and other incentives for staff professional development.
- ii. Support recruitment of extension officers for enhanced extension service delivery.
- iii. Provide an enabling environment for provision of extension by the private sector and non-state actors.
- iv. Promote innovative agricultural extension service provision.

b. Infrastructure

Challenges.

- i. Outdated or unserviceable infrastructure
- ii. Inadequate infrastructure such as buildings and offices, equipment, transport facilities and ICT.

- iii. Insufficient utilization of existing infrastructure

Policy Interventions

The National Government will:

- i. Promote development of agricultural extension infrastructure
- ii. Develop programmes that support the development of extension service infrastructure in the Counties.
- iii. Support provision of ICT infrastructure and equipment.

The County Government will:

- i. Acquire, modernize and maintain agricultural extension infrastructure
- ii. Support private sector engagement in upgrading of infrastructure

c. Funding

Challenges

- i. Inadequate investment in agricultural extension service.

Policy Interventions

The National Governments will:

- i. Promote cost sharing and commercialization of extension services for value chains and actors able to pay for the services.
- ii. Ensure that national programmes have an extension component
- iii. Provide conditional grants to the Counties to enhance extension service provision
- iv. Support funding of public extension and advisory service targeting the vulnerable.
- v. Promote private investment in agricultural extension.

The County Governments will:

- i. Implement cost sharing and commercialization of extension services.
- ii. Increase resources allocation and disbursement to public extension services.
- iii. Support private sector investment in agricultural extension
- iv. Put in place mechanisms for cascading down the funding of extension services up to the ward levels.

3.4. Knowledge management

Enhanced knowledge management system improves the quality of management decisions making by ensuring reliable and secure knowledge, information and data availability across the sector. It also enables service providers to be more efficient and improve quality of service

provided. Below are the main challenges and policy interventions to enhance knowledge management in the agriculture sector.

Challenges;

- i. Uncoordinated and fragmented data management system in the agriculture sector.
- ii. Weak institutional mechanisms for knowledge management among institutional actors
- iii. Inadequate use of innovative and digital-based knowledge management

Policy Interventions

The National Government will

- i. Establish a National framework for a coordinated and integrated data and knowledge management system
- ii. Strengthen institutional framework for knowledge management among sector actors

The County Government will;

- i. Operationalize the framework for a coordinating and integrating data and knowledge management at the County level

The National and County Government will;

- i. Promote innovative and digital-based knowledge management systems

3.5. Research-Extension-Client Linkages

Research-extension-client-linkages provide the required interaction and exchange of agricultural research information and feedback from clients /end users. The challenges and interventions in these linkages are as follows;

Challenges;

- (i) Inadequate interaction and exchange of agricultural research information and feedback
- (ii) Absence of a national institutional frameworks for research-extension-client linkages.
- (iii) Weak regional institutional frameworks for research extension client linkages.

Policy Intervention

The National Government will;

- (i) Create an enabling environment to facilitate research-extension-client linkages by both public and private sector
- (ii) Institutionalize and strengthen National and County frameworks for research-extension-clientele linkages

The County Governments will;

- (i) Support priority research agenda setting and coordinate feedback for county

3.6. Partnership, Collaboration and Coordination Challenges

- i. Inadequate coordination of actors in Advisory Extension Service Delivery
- ii. Inadequate capacity in the institutions that coordinate advisory and extension Service delivery
- iii. Lack of a framework for partnerships and collaboration

Policy Interventions

Both the National and County Governments will;

- i. Strengthen the institutional mechanisms for partnership, collaboration and coordination
- ii. Build capacity for AES coordinating institutions
- iii. Legalize the County coordination and cooperation mechanism

3.7. Policy, Legal, Regulatory and Institutional framework for Extension and advisory Services

Challenges

- i. Inadequate legal and institutional frameworks to guide ESPs in the provision of extension services

Policy Intervention

The National and County Governments will:

- i. Establish a legal and institutional framework that guide in the provision of extension services

3.8. Extension Standards and Quality Assurance Challenges;

- i. The services rendered vary in quality and do not conform to the set standards.
- ii. Inadequate accreditation and certification of agriculture extension service providers.
- iii. Lack of formal guidelines governing code of ethics for extension service provision

Policy Intervention

The National Government will:

- i. Establish mechanisms that will set standards and enforce standards and quality assurance for extension service providers, improve professionalism, certify, accredit and monitor performance

The County Governments will:

- i. Enforce standards and monitor performance of extension service providers

3.9. Extension and Advisory Approaches and Methods Challenges

- i. Inadequate integration extension approaches and methodology
- ii. Limited access to ICT hardware, software and skills for e-extension.
- iii. Inappropriate deployment of agricultural extension approaches and methods.

Policy Interventions

The National and County governments will:

- i. Promote an integration extension approaches and methodologies and extension methods in AES
- ii. Support the development of digital extension in public and private sector

The County Governments will:

- i. Promote sustainable extension approaches and methods taking into consideration specific County context
- ii. Support access to ICT hardware and software for agricultural extension
- iii. Develop a mechanism that addresses the extension needs of various clientele

3.10 Cross-cutting Issues in Delivery of Agricultural Extension Services

Cross-cutting issues encompass on aspects that impact on the delivery of extension services directly or indirectly. The interventions will aim at mainstreaming and dissemination of knowledge on cross-cutting issues in agricultural extension.

3.10.1 Pandemics

Challenges

- i. Limited mobility where certain extension methods such as face to face would be more effective.

Policy Intervention

The National Government will:

- i. Develop framework for management of pandemics affecting agricultural extension
- ii. Promote research on impacts of pandemics on agricultural extension
- iii. Mainstream pandemic prevention and control information in extension messaging
- iv. Establish affirmative programmes for persons affected by pandemics

The County Government will:

- i. Support implementation of social inclusivity in agricultural extension
- ii. Implement affirmative programmes for persons affected by pandemic

3.10.2 Social Inclusivity

Challenges

- i. Limited inclusivity in gender, youth and persons living with disabilities
- ii. The youth have limited access to agricultural production factors such as land, information and financial resources
- iii. Limited gender sensitive technologies and interventions in extension approaches and methods

Policy Interventions

The National Government will:

- i. Promote social inclusivity in agricultural extension
- ii. Promote access to factors of production to the youth

- iii. Influence development and dissemination of gender-sensitive technologies and interventions.

The County Government will:

- i. Support implementation of social inclusivity in agricultural extension
- ii. Support youth to access to factors of production
- iii. Facilitate the development and dissemination of gender-sensitive technologies

3.10.3 Drug and Substances abuse

Challenges

- i. Limit productivity of the agricultural extension work force
- ii. Limit the adoption of the extension information

Policy Intervention

The National Government will:

- i. Promote awareness creation and sensitization programmes on drug and substance abuse
- ii. Promote rehabilitation of agricultural sector workforce affected by drugs and substance

The County Government will:

- i. Support implementation of awareness and sensitization programmes on drug and substance abuse
- ii. Support the rehabilitation of agricultural sector workforce affected by drugs and substance

3.10.4 Climate Change

Challenges

- i. Unpredictable impact of climate change limits extension information
- ii. Hinder timely delivery of extension services in case of physical extension approaches
- iii. Limits the adoption of technologies

Policy Intervention

The National Government will:

- i. Promote development and dissemination of information on early warning signs and disaster preparedness
- ii. Promote innovative ways of extension information delivery
- iii. Promote climate change initiatives

The County Government will:

- i. Support development and dissemination of information on early warning signs and disaster preparedness
- ii. Implement innovative extension information delivery
- iii. Promote Climate Smart technologies

CHAPTER FOUR: POLICY IMPLEMENTATION AND COORDINATION

The implementation framework of the KASEP Policy will incorporate an integrated approach, joint planning and regular joint reviews of progress. A five –year strategy will be developed to implement the policy. The policy provides for a coordination mechanism through establishment coordination structure.

4.1 KASEP Implementation Coordination Mechanism

4.1.1 National Level

The coordination of implementation of this policy will be based on current and existing sectoral implementation and coordination structures with an apex being policy organs. This policy recognizes that extension provision is a devolved function while policy, capacity building and technical advice to the counties remain national government responsibilities. The principal actors for the achievement of the policy objectives are national institutions, representation from the county governments, other statutory bodies, agricultural sector education and training institutions, national producer organizations, non-state actors and the private sector.

The policy implementation process will be phased in short, medium and long term implementation plans. Short term plans will focus on immediate interventions required to support the agriculture sector through extension and advisory services while the medium and long term implementation will focus on advising the counties on suggested interventions to transform the current structure of the extension system to address shortcomings identified through the policy analysis and development process.

4.1.2 County Level

Extension and advisory provision coordination forums will be established at the County level in consultation with relevant stakeholders to bring together all extension and advisory service providers in a coherent grouping in addition to producer associations. The forums will articulate priorities, outline the co-ordination of policy implementation planning and action with regard to the provision of extension and advisory services in the designated geographic area. This will help local interest groups secure advice and support from other levels. The creation of these policy implementation and coordination forums will be county specific but shall have linkage to the coordination mechanism for the agricultural sector at the County level.

4.2 Financing and Investments for Agricultural Extension

To implement the Kenya Agricultural Extension Policy, the funding by the National and County governments through the exchequer will be provided to the relevant Ministries, Departments and Agencies (MDAs). Mobilization of technical and financial support from development partners to realize the objectives of this policy will also be done. Direct financing and investments by the private sector will be critical to the successful implementation of the Kenya Agricultural Extension Policy. The National and County governments will create conducive environments to facilitate participation of the private sector in the agriculture sector extension.

4.3 Monitoring, Evaluation and Review of Policy

An effective policy implementation tracking framework will be developed to monitor implementation of the policy and assess timely delivery of policy objectives to ensure that they are achieved in a cost effective, coordinated and harmonized manner at all levels. The policy implementation tracking framework will employ participatory approaches including mutual accountability systems to determine progress towards implementation of agreed and prioritized policy interventions and the realization of policy objectives based on the policy implementation matrix provided in (annex 1) of the policy. The policy implementation matrix will be unbundled to develop annual rolling work plans and intervention tracking matrices for the various thematic areas targeted for implementation.

The data and information emanating from the policy implementation tracking matrix and the yearly work plans will constitute evidence for policy review and decision making. Based on implementation progress, the policy will be reviewed periodically to address emerging issues and policy implementation challenges. The policy implementation tracking framework is expected to have clear terms of reference for relevant stakeholders in data collection and reporting at all levels.

4.4 Communication Strategy

For the successful implementation of the policy a well-structured and executed communication strategy and plan is required. Communication will enable an effective information flow between the National and County governments, within the National government, among County governments, between both levels of government and the private sector, non-state actors, farmers, the public, media and other actors in the ecosystem.

A well-structured and executed communication framework will also provide opportunities for public dialogue and knowledge sharing for decision making and evidence-based planning at all levels. A communication framework for implementation of the policy will be developed in collaboration with the relevant stakeholders in the Extension and Advisory services system. The communication strategy will be reviewed from time to time in order to improve its efficiency and effectiveness.

ANNEX 1: IMPLEMENTATION FRAMEWORK

| Thematic Area 1: Capacity in Delivery of Extension Services | | | | |
|--|---|---|---|--|
| Specific Policy Objective | | | | |
| Establish a framework for developing and managing human resources, and infrastructure to facilitate efficient capacity utilization in agricultural extension provision | | | | |
| a. Human Resource Capacity | | | | |
| Policy Interventions | Expected Outputs | Expected Outcomes | Lead/Key Responsible Institutions | Timeline |
| | | | | Short-term (≤ 2 years) Medium-term (2-5 years) Long-term (> 5) Continuous |
| i. Provide technical assistance and capacity building to the County Governments for effective extension provision | Technical assistance and capacity building provided | County Governments technical expertise enhanced | National Government Relevant public and private agricultural training institutions | Medium term to Long term |

| | | | | | |
|------|--|---|--|--|---------------------------|
| ii. | Support institutions in extension curriculum review to meet emerging trends, technology and innovations. | Extension curriculum supported | Relevant curriculum developed | National Government Relevant stakeholders | Short-Term to Medium Term |
| iii. | Strengthen capacity of public institutions to offer continuous training on extension | capacity of public institutions strengthened | Efficient and continuous training on extension | National Government KALRO, NRF, NACOSTI | Short Term to Medium term |
| iv. | Develop training and learning materials and guidelines | Training and learning material and guidelines developed | Updated training content and syllabus | National Government KICD Commission for University Education (CUE) | Medium to long term |
| v. | Support in-service trainings and other incentives for effective extension provision at the county | In-service trainings and other incentives provided | Effective extension provision at the County | County Government Relevant stakeholder | Medium to Long term |

| | | | | | |
|-------------------|---|---|--|--|----------------------|
| vi. | Support the recruitment of extension officers and specialized skills personnel for enhanced extension service delivery | recruitment of extension officers and specialized skills personnel enhanced | Enhanced extension service delivery | County Government Relevant stakeholder | Medium to Long term |
| vii. | Provide an enabling environment for provision of extension by the private sector and other actors | enabling environment for provision of extension created | Enhanced extension service delivery | County Government Relevant stakeholder | Medium to Long term |
| b. Funding | | | | | |
| i. | Promote cost sharing and commercialization of extension services for value chains and actors able to pay for the services | Increased facilitation for provision of extension services | Extension services improved | National Government Relevant stakeholder | Medium to Long term |
| ii. | Support funding of public extension and advisory service targeting the vulnerable | Funding of public extension and advisory service availed | public extension and advisory service targeting the vulnerable supported | National Government Relevant stakeholder | Medium to Long term |
| iii. | Promote private investment in agricultural extension. | Agricultural extension service | Effective and efficient Agricultural | National Government Relevant stakeholders | Short to medium term |

| | | | | | |
|--------------------------|---|--|---|-------------------|---------------------|
| | | funds available and accessible | extension service delivered | | |
| iv. | Implement cost sharing and commercialization of extension services | cost sharing and commercialization of extension services Implemented | Agricultural extension service enhanced | County Government | Medium to Long term |
| v. | Increase resources allocation and disbursement to public extension services | public extension services increase | public extension services enhanced | County Government | Medium to Long term |
| vi. | Support private sector investment in agricultural extension | Private sector investments supported | Increase private sector involvement in agricultural extension | County Government | Medium to Long term |
| vii. | Put in place mechanisms for cascading down the funding of extension services up to the ward levels. | Mechanisms for cascading down the funding of extension developed | Funds availed at the ward level | County Government | Medium to Long term |
| c. Infrastructure | | | | | |
| i. | Establish a mechanism for maintenance of agricultural extension infrastructure and equipment. | Maintenance mechanisms of agricultural infrastructure put in place | Agricultural infrastructure and equipment maintained. | County Government | Medium to Long term |

| | | | | | |
|------|---|---|--|---|---------------------|
| | | | | | |
| ii. | Promote development of agricultural extension infrastructure | agricultural extension infrastructure developed | Efficient and effective delivery of extension services | National Government Relevant stakeholders. | Medium to Long term |
| iii. | Develop programmes that support the development of extension service infrastructure in the Counties | programmes that support the development of extension service infrastructure in the Counties developed | extension service infrastructure availed | National Government Relevant stakeholders. | Medium to Long term |
| iv. | Support the provision of ICT infrastructure and equipment. | ICT infrastructure and equipment availed | Digital extension promoted | National Government Relevant stakeholders. | Medium to Long term |
| v. | Acquire, modernize and maintain agricultural extension infrastructure | agricultural extension infrastructure acquired, modernized and maintained | Improved infrastructure for extension service | County Government Relevant stakeholders. | Medium to Long term |
| vi. | Support private sector extension infrastructure development. | Private sector involved in extension infrastructure development | Improved infrastructure for extension service delivery | County Government Relevant stakeholders. | Medium to Long term |

Thematic Area 2: Knowledge Management

| Specific Policy Objective | | | | |
|--|---|--|--|---|
| Enhance knowledge management system for efficient and effective extension service delivery | | | | |
| Policy Interventions | Expected Outputs | Expected Outcomes | Lead/Key Responsible Institutions | Timeline |
| | | | | Short-term (≤ 2 years) Medium-term (2-5 years) Long-term (> 5 years) Continuous |
| i. Establish a National framework for a coordinated and integrated data and knowledge management system | National framework for a coordinated and integrated data and knowledge management system developed | Enhanced coordination and integration of data and knowledge using a system | National Government Relevant stakeholders | Long-term |
| ii. Strengthen institutional mechanisms for knowledge management among sector actors | A Coordinated and integrated knowledge management in use Platform on integrated knowledge management established | Efficient and effective knowledge management systems | National Government Ministry responsible for Agriculture, Livestock, Fisheries and Cooperatives | Long - term |
| iii. Operationalize the framework for a coordinating and integrating data and knowledge management at the County level | Framework for coordination and integration of data and knowledge management operationalized | Coordinated and integrated data and knowledge management system | National Government Relevant stakeholders | Short to medium term |

| | | | | | |
|-----|---|---|--|---|----------------------|
| iv. | Promote innovative and digital-based knowledge management systems | Innovative and digital-based knowledge management systems developed | Enhanced use of digital-based knowledge management | National Government and County Government | Short to medium term |
|-----|---|---|--|---|----------------------|

| Thematic Area 3: Research-Extension Producer Linkages | | | | |
|--|---|--|---|--|
| Specific Policy Objective | | | | |
| Strengthen Research Extension Client Linkages in agricultural sector | | | | |
| Policy Interventions | Expected Outputs | Expected Outcomes | Lead/Key Responsible Institutions | Timeline |
| | | | | Short-term (≤ 2 years) Medium-term (2-5 years) Long-term (>5 years) Continuous |
| i. Create an enabling environment to facilitate research-extension-client linkages by both public and private sector | Research extension linkage coordination system strengthened | Enhanced research dissemination and feedback | National Government JASCCOM Council of Governors CASSCOM | Medium - term |

| | | | | | |
|------|--|---|---|--|------------|
| | | | Private and Public Researchers Universities Other relevant stakeholders | | |
| ii. | Establish and strengthen institutional frameworks for research-extension-client linkages | Inclusive, Participatory and consultative mechanism of research client linkages established | Demand driven research and appropriate technology developed Timely and relevant market information | National Government JASCCOM Council of Governors CASSCOM Private and Public Researchers Universities Other relevant stakeholders | Short term |
| iii. | Support priority research agenda setting and coordinate feedback for county | | | County Government | Short term |

Thematic Area 4: Partnership, Collaboration and Coordination

Specific Policy Objective

Ensure a pluralistic and coordinated approach for the provision of extension and advisory services by public, private and non-profit organizations

| Policy Interventions | Expected Outputs | Expected Outcomes | Lead/Key Responsible Institutions | Timeline |
|--|---|--|---|------------|
| i. Strengthen the institutional mechanisms for partnership, collaboration and coordination | A framework for partnership, collaboration and coordination developed | Partnership, collaboration and coordination enhanced | National and County Governments Other stakeholders | Short Term |
| ii. Build capacity for AES coordinating institutions | Capacity for AES coordinating institutions enhanced | Efficiency in the AES coordinating institutions enhanced | National and County Governments Other stakeholders | Continuous |

| | | | | |
|---|--|--|---|-------------|
| iii. Legalize the County coordination and cooperation mechanism | A framework for coordination and cooperation at the county level legalized | Coordination and collaboration at the county level enhanced Enhanced efficiency in resource utilization | National and County Governments Other stakeholders | Medium-term |
|---|--|--|---|-------------|

| Thematic Area 5: Policy, Legal, Regulatory and Institutional Framework | | | | |
|---|-------------------------|--------------------------|--|---|
| Specific Policy Objective To create a conducive legal, regulatory and institutional framework that facilitates coordination and regulation of agricultural extension services | | | | |
| Policy Interventions | Expected Outputs | Expected Outcomes | Lead/Key Responsible Institutions | Timeline |
| | | | | Short-term (≤ 2 years) Medium-term (2-5 years) Long-term (> 5 years) Continuous |

| | | | | |
|--|-----------------------|--|--|------------|
| i. Establish a legal and institutional framework that guide in the provision of extension services | Extension Act enacted | A well-coordinated and regulated and extension service | 1.National Government 2.County Government 3.Stakeholders | Short-term |
|--|-----------------------|--|--|------------|

| Thematic Area 6: Extension Standards and Quality Assurance | | | | |
|---|---|---|--|--|
| Specific Policy Objective | | | | |
| Promote professionalism and ensure quality in the delivery of Agricultural Extension Services | | | | |
| Policy Interventions | Expected Outputs | Expected Outcomes | Lead/Key Responsible Institutions | Timeline Short-term (≤ 2 years) Medium-term (2-5 years) Long-term (> 5) Continous |
| i. Establish mechanisms that will set standards and enforce standards and quality assurance for ESPs, improve professionalism, certify, accredit and monitor performance. | A mechanism that sets and enforce standards and quality assurance for ESPs established. Updated guidelines on standards and quality assurance in place | Professionalism, harmony and consistency in the AES delivery maintained | National Government County Government Office of the Attorney General | Medium-term |

Thematic Area 7: Extension and Advisory Approaches and Methods

Specific Policy Objective

To ensure effective, efficient and sustainable technology transfer to agriculture extension to meet the needs of clientele in order to improve agricultural production and productivity

| Policy Interventions | Expected Outputs | Expected Outcomes | Lead/Key Responsible Institutions | Timeline Short-term (≤ 2 years) Medium-term (2-5 years) Long-term (> 5) Continuous |
|---|---|--|---|--|
| i. Promote an integrated approach and extension methods in AES | A critical mass of AES end user reached | Improved efficiency and effectiveness of extension and advisory services | National and County Governments Other stakeholders | Medium-term |
| ii. Support the development of digital extension in public and private sector | Digital extension platforms established Access to agricultural information and | Enhanced knowledge and skills | National Government Other stakeholders | Medium-term |

| | | | | | |
|------|---|---|-------------------------------------|--|----------------------|
| | technology to end users enhanced | | | | |
| iii. | Provide for sustainable approaches taking consideration specific County context | Access to agricultural information and technology increased | Enhanced knowledge and skills | County Governments Other stakeholders | Continuous |
| iv. | Support access to ICT hardware and software | Use of ICT in extension supported | Enhanced access to ICT and software | County Governments Other stakeholders | Short to medium term |

| | | | | |
|--|-------------------------|--------------------------|--|-----------------------|
| Thematic Area 8: Cross-Cutting Issues | | | | |
| Specific Policy Objective | | | | |
| Mainstream cross-cutting issues in provision of extension services | | | | |
| Policy Interventions | Expected Outputs | Expected Outcomes | Lead/Key Responsible Institutions | Timeline |
| | | | | Short-term (≤2 years) |

| | | | | |
|---------------------------|---|---|---|---|
| | | | | Medium-term (2-5 years) Long-term (>5) Continuous |
| Pandemics | | | | |
| i. | Promote research on pandemics | research on pandemics promoted | Cross cuttings issues mainstreamed in extension | National Government Continuous |
| ii. | Develop framework for agricultural extension | framework for agricultural extension developed | Cross cuttings issues mainstreamed in extension | National Government Continuous |
| iii. | Establish affirmative programmes for persons affected by diseases | Affirmative programmes for persons affected by diseases developed | Cross cuttings issues mainstreamed in extension | National Government Continuous |
| iv. | Implement affirmative programmes for persons affected by diseases | Affirmative programmes for persons affected by diseases implemented | Cross cuttings issues mainstreamed in extension | County Governments Continuous |
| Social Inclusivity | | | | |

| | | | | | |
|----------------------------------|--|--|---|---------------------|------------|
| i. | Promote social inclusivity in agricultural extension | social inclusivity in agricultural extension | Cross cuttings issues mainstreamed in extension | National Government | Continuous |
| ii. | Promote access to factors of production to the youth | Youths access to factors encouraged | Cross cuttings issues mainstreamed in extension | National Government | Continuous |
| iii. | Influence development and dissemination of gender-sensitive technologies and interventions | gender-sensitive technologies and interventions developed | Cross cuttings issues mainstreamed in extension | National Government | Continuous |
| iv. | Support implementation of social inclusivity in agricultural extension | social inclusivity in agricultural extension enhanced | Cross cuttings issues mainstreamed in extension | County Governments | Continuous |
| v. | Support youth to access to factors of production | Youths access to factors encouraged | Cross cuttings issues mainstreamed in extension | County Governments | Continuous |
| vi. | Facilitate the development and dissemination of gender-sensitive technologies | gender-sensitive technologies and interventions disseminated | Cross cuttings issues mainstreamed in extension | County Governments | Continuous |
| Drug and Substances abuse | | | | | |

| | | | | | |
|-----------------------|---|--|---|---------------------|------------|
| i. | Promote awareness creation and sensitization programmes on drug and substance abuse | Awareness and sensitization programmes on drug and substance abuse promoted | Cross cuttings issues mainstreamed in extension | National Government | Continuous |
| ii. | Promote rehabilitation of agricultural sector workforce affected by drugs and substance | agricultural sector workforce affected by drugs and substance rehabilitated | Cross cuttings issues mainstreamed in extension | National Government | Continuous |
| iii. | Support implementation of awareness and sensitization programmes on drug and substance abuse | Awareness and sensitization programmes on drug and substance abuse implemented | Cross cuttings issues mainstreamed in extension | County Governments | Continuous |
| iv. | Support the rehabilitation of agricultural sector workforce affected by drugs and substance | agricultural sector workforce affected by drugs and substance rehabilitated | Cross cuttings issues mainstreamed in extension | County Governments | Continuous |
| Climate Change | | | | | |
| i. | Promote development and dissemination of information on early warning signs and disaster preparedness | Information on early warning signs and disaster preparedness developed | Cross cuttings issues mainstreamed in extension | National Government | Continuous |

| | | | | | |
|------|---|--|---|---------------------|------------|
| ii. | Promote innovative ways of extension information delivery | innovative ways of extension information delivery promoted | Cross cuttings issues mainstreamed in extension | National Government | Continuous |
| iii. | Promote climate change initiatives | climate change initiatives promoted | Cross cuttings issues mainstreamed in extension | National Government | Continuous |
| iv. | Support development and dissemination of information on early warning signs and disaster preparedness | information on early warning signs and disaster preparedness developed | Cross cuttings issues mainstreamed in extension | County Governments | Continuous |
| v. | Implement innovative extension information delivery | Innovative extension information delivery implemented | Cross cuttings issues mainstreamed in extension | County Governments | Continuous |
| vi. | Promote Climate Smart technologies | Climate Smart technologies promoted | Cross cuttings issues mainstreamed in extension | County Governments | Continuous |

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