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National Extension Policy and State Level Implementation

The Case of Niger State in Nigeria

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ABSTRACT

The aim of Nigeria's extension reform and transformation agenda through its new national extension policy (NEP) is to put in place a legislated, pluralistic, farmer-responsive, and market-oriented extension system. The reformed extension system aims at an assured and regular source of funding and a well-trained and motivated staff, effectively catering for a variety of actors along targeted value chains. It also aims at effective integration of the complex innovation processes in the agricultural and food system transformation in Nigeria. Implementation of the NEP at the state level remains a major challenge.

This paper documents issues, challenges, constraints, and potential solutions and opportunities in implementing NEP at the state level using Niger State as a case study. We use a qualitative method in the context of inclusive consultative process with a focus on the multi-stakeholder participatory model. We found that strengthening actors' capacities for innovation by considering the complexity of agricultural innovation system is very critical to effective and successful implementation of national agricultural policies in Niger State. We confirm from our study that "networking, partnership facilitation, and collaboration" functions are crucial cross-cutting measures across the agricultural innovation system for operative and systematic implementation of the NEP in Niger State. Based on our findings in Niger State, even if we make effort to draw generic lessons for Nigeria, the case studies show that understanding the dynamics of efficiently and productively implementing the National Extension Policy remain case-specific, and no 'silver bullet' can be provided to support agricultural innovation system due to the complex federal governance system in Nigeria. Therefore, a state-level or case-specific is highly recommended for operational implementation process in Nigeria.

Keywords: Nigeria, Extension Policy, Multi-stakeholders Consultation, Qualitative approach, Decentralization, Implementation

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ACRONYMS

ADPs	Agricultural Development Projects
AETA	Agricultural Extension Transformation Agenda
AKIM	Agricultural Knowledge and Information Management
ARES	Agricultural research and extension systems
ATA	Agricultural Transformation Agenda
CA	Capacity Analysis
FDAE	Federal Department of Agricultural Extension
FMARD	Federal Ministry of Agriculture and Rural Development
GDP	Gross Domestic Product
IA	Institutional Analysis
ICT	Information and Communication Technology
MSP	Multi-Stakeholder Process
MTSS	Medium Term Sector Strategy
NAMDA	Niger State Agricultural and Mechanization Development Authority.
NEP	National Extension Policy
NL&FI	Niger State Livestock and Fisheries Institute
PEA	Political Economy Analysis
PPA	Policy Process Analysis
SSA	Sub- Saharan Africa
UAES	Unified Agricultural Extension Services
USAID	United States Agency for International Development

1 INTRODUCTION

Agriculture plays significant role in Nigeria's economy with over 75% of its population depending on agriculture as a source of livelihood (Nwanka, 2017; Ghebru et al., 2018) and contributed 21.2 % to the gross domestic product (GDP) in 2018 (National Bureau of Statistics, 2018). The productivity of agricultural production systems is lower than the potential shown by the research. Poor institutional development and delivery of agricultural extension services is often resulting in low adoption of improved agricultural practices by smallholder farmers. In order to revamp the agricultural extension system in Nigeria, in 2017, the Federal Ministry of Agriculture and Rural Development (FMARD) has developed a National Extension Policy (NEP). The policy contains 11 strategic elements that have been discussed at various forums and workshops over the past several years. Yet, the adoption of these strategic elements as part of the extension service implementation at the state level has been slow. National workshops and consultations point to the need for state level multistakeholder consultation to translate NEP in the state level investment and action plans. This paper documents the process and the outcomes of such a multistakeholder consultation implemented in Niger State to develop operation strategies for state level implementation of NEP.

In the context of translating NEP into implementation strategies, the Niger State Agricultural and Mechanization Development Authority (NAMDA) along with the Niger State Livestock and Fisheries Institute (NL&FI) are the two major agricultural institutes in Niger State. Similarly, the two ministries associated with the agricultural sector in Niger state are the Ministry of Agriculture and Rural Development and the Ministry of Livestock and Fisheries Development. These ministries and institutions oversee the agricultural activities and performance and are also responsible for the formulation and implementation of agricultural policies in the state (Merem et al., 2017). Despite the existence of relevant institutions in the state, evidences persist that the agricultural sector of the state has been facing several challenges over the years (Bitagi and Akor, 2011; Merem et al., 2017) such as low access to inputs, weak access to market, and most importantly, low access to agricultural related information through agricultural extension services. Meanwhile, several studies (Tologbonse et al., 2008; Farinde et al., 2009; Farinde et al., 2010; Ibrahim et al., 2014) have noted that weak agricultural extension system contributes to low agricultural productivity in the state. Studies (Farinde et al., 2010; Ibrahim et al., 2014; Ndagana and Buba, 2016) have shown that many farmers do not receive expected impact of agricultural innovations, as they have no access to information on such innovation due to weak agricultural extension services in the state.

Additionally, Merem et al., (2017) noted that one of the major constraints that the Niger State agricultural sector faces is the unavailability and inaccessibility of trained and qualified agricultural extension agents to provide farmers with needed agricultural information. It is largely a reflection of the capacity gap that is prevalent in several state level institutions (Adebayo, Babu, & Rhoe, 2009; Sanyal and Babu, 2010). Meanwhile, Farinde and Atteh (2009) highlighted even a decade ago that the funding for public agricultural extension in Niger State has been on a steady decline over the years. The study suggested the involvement of private sector in providing agricultural extension services to the farmers and further brought to light the farmers' willingness to pay for these agricultural extension services. It is important to mention that the major drivers of agricultural extension activities at the state level are the state Agricultural Development

Projects (ADPs). The ADPs are one of the major avenues through which agricultural extension programs are carried out at the individual states in Nigeria. According to Iwuchukwu and Igbokwe (2012), the essential feature of the programmes/projects is the reliance on the rural farmers as the primary agents for increasing food production and enhancing agricultural productivity. Another characteristic of the state ADPs is that they operate through a feedback information mechanism, whereby farmers can contribute their perceptions on incentives, subsidies, and new agricultural technologies through a decentralized process of decision-making (Iwuchukwu & Igbokwe, 2012). In order to address these challenges in a holistic manner, the Federal Ministry of Agriculture and Rural Development (FMARD) through the Federal Department of Agricultural Extension (FDAE) has developed a National Extension Policy. It aims at putting in place a legislated, pluralistic, responsive, and market-oriented extension system with an assured and regular source of funding. It also envisages a system of extension at the State level that capacitated with well-trained and motivated staff, effectively catering to a variety of actors along targeted value chains that are of national interest.

In principle, understanding the best approaches towards effective implementation of the national agricultural extension policy at the state-level is a logical next step. The process of translating the national policy into state level operational strategies has to be identified and streamlined. In this paper, using Niger state as a case study, we show that development of this process will have implications for the development of the agricultural extension programs at the state levels. Multi-stakeholder processes (MSP) are increasingly seen as a promising vehicle for agricultural innovation and operative implementation of national policies at the state level in developing countries (Hemmati et al., 2002; Adekunle and Fatunbi 2012; Schut et al. 2015; Bisseleua et al., 2018). Public sector, private sector, civil society, researchers and the other developmental stakeholders need each other to achieve the expected and desired impact at scale (Schut et al. 2015; Bisseleua et al., 2018). However, the collaboration between relevant stakeholders in agriculture extension system has been insufficient so far in Nigeria. The Niger State is a good example and reflect the national problem agricultural extension. Therefore, learning from state level implementation challenges and sharing experiences is very important to give adequate recommendations and suggestions on the implementation strategies at the state level. Such efforts relating to information generation and evidence gathering through client and actors' consultations can help in designing a better intervention strategy to implement NEP. The objective of this paper is therefore to document the challenges, constraints, and potential solutions and opportunities in implementing NEP at the state level.

The rest of this paper is organized as follows. Section 2 presents a brief review of literature on agricultural extension policies in the context of Nigeria and Niger state. Section 3 describes the conceptual framework using the Kaleidoscope model to analyze capacity for NEP implementation at the systems level. The methodologies used for the study are presented in section 4. We present in section 5, some key lessons from multi-stakeholder consultations in Niger state. We present the strategies for implementation of the policies in section 6. Section 7 reports the implications and goals for the national extension policy at the national and other state levels. We conclude the paper in the last section.

2. Context and literature review

Agricultural extension policies are put in place to guide and influence major decisions, including investments, actions and activities in agricultural extension. There have been several agricultural policies

implemented by consecutive governments to promote agricultural extension in Nigeria. Most of these policies are introduced and backed up by various agricultural projects and programs. One of the earliest of such projects is the Agricultural Development Projects (ADPs). Prior to the establishment of the ADPs, there was hardly any deliberate and effective agricultural extension policy in place (Taye, 2013; Naswem & Ejembi, 2017; Oyelami et al., 2018). The ADP was jointly established and funded by the World Bank, the Federal Government and the States in 1975 due to the slump in agricultural productivity during the oil-boom era (Okwoche et al., 2012; Taye, 2013; Naswem & Ejembi, 2017;Oyelami et al., 2018).

An agricultural extension policy was enacted about halfway through the ADP implementation in 1991 called the Unified Agricultural Extension Services (UAES). The policy authorized the delivery of agricultural extension services through an extension agent to the farmers (USAID, 2010). It was meant to assist ADPs in increasing the effectiveness and efficiency of extension services. It is important to note that the policy was unable to adequately tackle the coordination, institutional arrangements, collaboration, and funding for the agricultural extension services in Nigeria. The policy also failed to address the roles and responsibilities of each stakeholder until the establishment of the 2001 National Agricultural Policy (Naswem & Ejembi, 2017; Oyelami et al., 2018).

The 2001 Agricultural (Extension) Policy became one of the first policies to adequately tackle the issues of public agricultural extension services in Nigeria (Issa & Issa, 2013; Naswem & Ejembi, 2017; Oyelami et al., 2018). It was an improvement from the 1991 Policy, which was restricted by its premise on “self-sufficiency in food production”. According to the Federal Ministry of Agriculture and Rural Development (FMARD), policy objectives must move beyond merely aiming for self-sufficiency to include national food security. It was in a bid to attain the goal of food security that the 2001 Agricultural Policy designated roles and responsibilities to the private sector and the various tiers of government (Issa & Issa, 2013). The role of the state government in the implementation of agricultural extension policies, therefore, became more evident at this stage. The 2001 Agricultural Policy entrusted the state government with the advancement of primary agricultural production employing solid and operational extension services. The policy also assigned the state with the responsibilities of training and capacity development; enhancing access to credit by small-scale farmers through appropriate credit institutions and allowing a variable system of delivering agricultural extension (FMARD, 2012). This policy, however, has not been particularly productive at the state level as the states are still unable to implement the requirements of the policy in regards to finance and providing a more effective and efficient agricultural extension service at the state level (Issa & Issa, 2013).

A more recent agricultural extension policy is the Agricultural Extension Transformation Agenda (AETA), which was part of the Agricultural Transformation Agenda (ATA) developed in 2012. It was enacted to effectively drive the goals of ATA to move agriculture from a peasant activity to a modernized business. According to FMARD (2011), the AETA was meant to provide a clear road map to tackle the critical challenges of agricultural extension and advisory services in Nigeria. AETA aimed to transform Nigerian extension system into a participatory, demand-responsive, market-oriented and information and communication technology (ICT) driven service that provides the extension needs of all the actors along the agricultural commodity value chains of interest. It brought in a more pluralistic approach to agricultural extension and clearly defined the roles and responsibilities of each stakeholder, building on the 2001 Agricultural Policy (FMARD, 2011).

The main body in Niger State, which has been entrusted with the task of executing the AETA and other agricultural extension policies is the NAMDA. The NAMDA is meant to carry out this task by reviving and reinforcing its institution with sufficient staff to reach a ratio of at least one extension agent to 800 – 1000 farmers (1:800-1000) as stipulated by the Agricultural Extension Transformation Agenda (AETA). The Federal Ministry of Agricultural and Rural Development (FMARD) would also play their part in improving the quantity and quality of infrastructure and facilities needed to smoothly carry out agricultural extension activities. However, the states (including Niger State) are expected to foster and encourage the highlighted food value chains with higher potentials in the state for the successful implementation of the AETA.

Although Niger state does not have its own agricultural extension policy on the ground, the state has committed to promoting agricultural extension services through the Medium-Term Sector Strategy (MTSS) of the agricultural sector in Niger state. The MTSS of the Niger state's agricultural sector was initially prepared in 2013 and has been rolled over up until the second rollover known as the 2016 – 2018 MTSS (NSAS, 2015). The 2016 – 2018 MTSS includes practical approaches to be taken towards ensuring that the mandates of the agricultural sector are delivered and to ensure that its main stakeholders are optimally satisfied through effective and efficient service delivery. One of the major goals to be realized in the second MTSS rollover is to place a priority on agricultural institutions that provide extension services to the farmers to ensure that they give an efficient and cost-effective service to the farmers(NSAS, 2015). A key strategy of the MTSS is to boost the quality and quantity of agricultural extension workers and to expose them to innovative practices and new research findings.

With this background to the policy developments related to agricultural extension in Nigeria and Niger state, we present the Niger case study of translating the NEP into state level operational strategy in the next sections.

2 CONCEPTUAL FRAMEWORK

We used a framework based on the Kaleidoscope model of policy process (Resnick et al., 2018) to analyze capacities at the systems, organizational/institutional, and individual level to assess the prevailing gaps in the implementation of the National (Agricultural) Extension Policy at Niger State. To that end, the model provides a framework for formally testing what factors provoke the episodes of structural policy reform that punctuate effective implementation and long periods of policy inertia.

System capacity refers to the overall context in which changes are taking place (Baser and Morgan 2008). In other words, through this dimension, we assess whether (and to what extent) the current conditions promote capacity strengthening for agriculture extension services. As in the case shown in for Babu and Blom (2014), this includes the smooth functioning of different stages of the policy process (identification, research, strategy development, implementation, monitoring and evaluation, and strategy revision).

The *organizational/institutional capacity* is seen in this paper through the 5C approach (by Baser and Morgan (2008). The 5C approach, describes it as an *organization's capability as its ability to act and commit; deliver development objectives; adapt and self-renew; relate to external stakeholders; and achieve coherence* (Babu and Blom, 2014). Each of these capabilities is required for organizations and institutions.

Individual capacity is often thought of as one's knowledge, skills, and attitudes—that is, one's awareness and understanding of a particular situation, issue, or area; one's technical ability to react, predict, analyze, or solve in a critical way; and one's personal motivation to apply oneself to the task at hand. In the specific case of agriculture extension system, most studies (Faure et al., 2012; Kilelu et al, 2014; Anil et al, 2015; Ratan et al., 2016) on the dynamism of individual capacity establish that the education knowledge, skills, and attitudes of agricultural extension agents (or key stakeholders in dissemination of vital information) are significant factors in determining the success of the extension systems. They also explain the inter-farm, inter-region and inter-country differences in agricultural productivity and overall performance, along with the more conventional factors such as availabilities of land, water resources, inputs, and credit.

For the design and implementation of a specific set of interventions, such as agricultural extension services, we propose four sets of analytical tools. They are 1. Political Economy Analysis (PEA), 2. Policy Process Analysis (PPA), 3. Institutional Analysis (IA), and 4. Capacity Analysis (CA). These tools jointly help to understand the issues, constraints, challenges, opportunities, and risks for adopting a national policy on agriculture extension services at the decentralized levels. We begin with PEA as it provides the broader context on the nature of the political process which has serious implications for design and implementation of agriculture extension reforms both at the national and at the state levels. In this study, political economy analysis was explored through the lens of high-profile *closed room conversations/discussions* in order to adapt the depth, scope and structure of PEA to the purpose of NEP implementation gap in Niger State. This approach helps in sampling and systematizing tacit knowledge about power and politics among the multitude of relevant stakeholders in Niger State. Next, we look at the policy process to understand the actors and players of the policy system and their role in designing and implementing policies. One of the best approaches to achieve this is through *high level consultation* on policy thrust. This involve the engagement of specific power players and “game changers” in the state within the agricultural innovation

system in order to have longitudinal reflections on the process and procedures involved in implementing national policies at the state level. Both these analyses are conducted at the systems level. To address issues at the institutional level, we conduct an institutional analysis and at the individual level we conduct an individual capacity analysis. In order to produce coherent, integrated and efficient outcomes on the institutional analysis, we adopted the *multi-stakeholder consultation forum* as recommended by previous studies (Adekunle and Fatunbi 2012; Schut et al. 2015; Bisseleua et al., 2018). Multi-stakeholder institutional analysis mechanisms provide a venue for us to integrate pluralist inputs into policy formulation and implementation trajectories. We leveraged on the mechanism of multi-stakeholder that partnerships are based on principles of non-exclusivity and the comparative advantage that each participants of the workshop brings to the table. This helps in understanding the constraints, drivers of policy ineffectiveness, and guiding the process and decision of relevant interventions that will stimulate the successful implementation of the policy in the state. The individual level of the extension system was analyzed through the capacity analysis in the context of *roundtable feedback analysis*. Through a process of focused discussion, mutual systematic learning from high ranking government officials within the agricultural innovation system, information sharing on matter of the state and joint problem solving discussion, *roundtable feedback analysis* mechanisms can identify integrative solutions to some of the most complex and contentious problems facing extension system in the state based on some of the key takeaways from the multi-stakeholders' forum. Figure1 below presents a schematic overview of these levels and analyses.

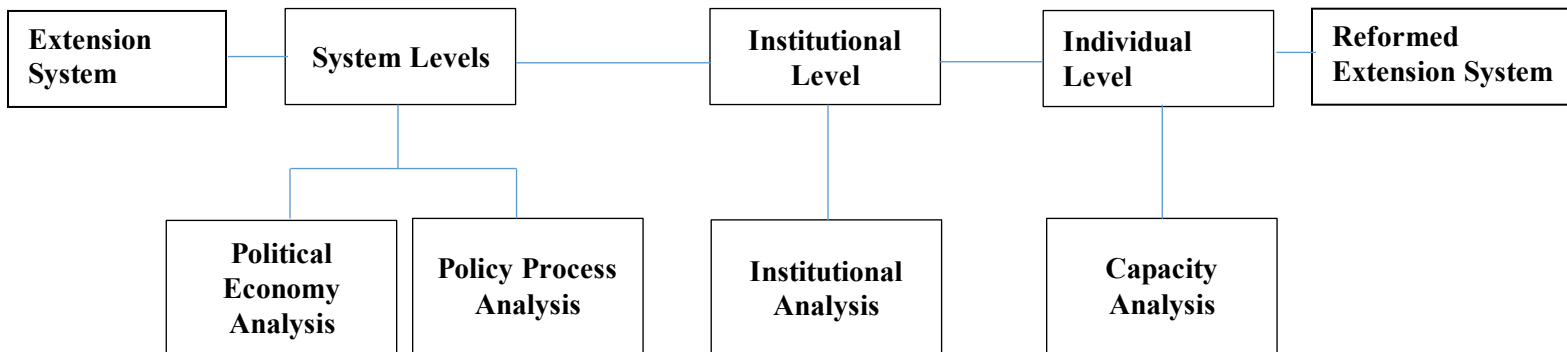


Figure 1: Schematic overview of capacity levels and analyses.

3 METHODOLOGY

The approach used for this case study is basically an “inclusive consultative process” where we engage different key stakeholders at different levels and space. This method allows us to collect relatively large volume of information in a relatively short time. This information contains different forms of cognition expressed by the groups on practical experiences, perceptions, insights and opinions emerging from diverse form of interactions with key actors in the agricultural extension system. We used four sets of analytical tools which are linked to four specific stages of “inclusive consultation process”. They are: 1. Political Economy Analysis (PEA), 2. Policy Process Analysis (PPA), 3. Institutional Analysis (IA), and 4. Capacity Analysis (CA). The field works were conducted in the month of May 2019. Specifically, this “inclusive consultation process” was done in 4 different stages. The following are the stages involved in this process:

- ***Closed room conversations/discussions:*** The 1st stage of the process includes closed room extensive discussion with the agricultural extension program managers in Niger State. This is a Political Economy Analysis (PEA) to understand the dynamics of extension system. A solid understanding of domestic political economy helps to produce information and promote policy outcomes that are more realistic, given the configurations of institutions and power, and therefore better adapted to State realities. The purpose of the meeting was to set the agenda right. The key issues discussed include the current situation of agricultural extension system in the state, opportunities and constraints within the system, key push and pull factors linking extension system to agricultural productivity in the states, role of private sectors and development partners and way forward. Additionally, we defined the purpose and objectives of the high-level consultation meeting and most importantly how to get the right people to the multi-stakeholder consultation that can give practical and inclusive voice to the debate.
- ***High level consultation on National Extension Policy:*** For the second stage of the process, we held a high-level consultation meeting specifically on the National Extension Policy (NEP) with policy makers and implementers. The high-level consultation approach is systematically linked to the Policy Process Analysis (PPA) within the agricultural innovation system. These constitute a delving deeper into the facilitating environment and include the analysis of policy environment for policy process, public sector institutions that facilitate the process of policymaking, the networks and associations of various actors, players, and beneficiaries of the policy process that determine the effectiveness of policy analysis, formulation, and implementation. We extensively discussed the role of public, private, and NGO sectors on the successful implementation of the policy. This gave moment of reflection on process and procedures involved in implementing national polices at the state level. We systemically identified likely constraints and capacity gaps in effective implementation of the NEP. Additionally, the policymakers’ input in this stage, pointed out the massive opportunities in the policy for different actors especially farmers.
- ***Multi-stakeholder consultation:*** We used the Multi-stakeholder consultation approach which is an action research system for the third stage of the process. This approach is considered as the main mechanism of executing the process. The Multi-stakeholder engagement is an institutional level analysis of the extension system. The process is sort of useful mechanisms at the state level to structure debate and forge consensus on implementing the more technical obligations and commitments under National Extension Policy. Multi-stakeholder engagement in the context of

this study is timely, open, transparent, informed, inclusive, and iterative. The Multi-stakeholder Consultation provided the opportunity to various key stakeholders to identify key achievements, gaps, and challenges in efforts to enhance the effective and efficient implementation of the National Extension Policy at the state level. Additionally, the Multi-stakeholder consultation participants have a mix of stakeholders drawn from diverse discipline and sectors (both the public and private sector stakeholders) such as subject matter experts, scientists, extension workers, representatives of farmers, farmers' associations, private firms, non-governmental organizations and government policy makers who communicate, cooperate and interact (often across sectorial and ministerial lines).

- **Roundtable Feedback Analysis:** The final stage of the methodology is a roundtable discussion where feedback from the multi-stakeholder consultation were discussed and analyzed by IFPRI team, representative of the Federal Department of Agriculture Extension (FDAE) and the few selected managers and directors from the Niger State Agricultural and Mechanization Development Authority (NAMDA) and Niger State Ministry of Agriculture. This is done in the light of operationalizing capacity analysis (CA) of the extension system. The feedback mechanism is to have a first shot capacity gap and analyze the key takeaways from the multi-stakeholder consultation event. It provides perspectives on how extension, capacity-building and resilience can be conceptually linked and includes an extension program in the State. In addition, the session accommodated a focused brainstorming on the next steps and the way forward.

4 NATIONAL EXTENSION POLICY AND STATE LEVEL IMPLEMENTATION: LESSONS FROM MULTISTAKEHOLDER CONSULTATIONS IN NIGER STATE

In this section we present the results of the multistakeholder consultations conducted at different stages described above. We begin with the broad sets of issues that provided the context for the NEP discussions, the changing role of research and extension in agricultural development and the need for reforms in the agricultural extension services in Nigeria.

Changing role of research and extension in agriculture development?

Agricultural research and extension systems (ARES) is a key element of the Agricultural Innovation System along with the agricultural education and the actors and players that link these entities to the policy environment and the institutional architecture in which these entities operate. These entities play a fundamental role in agricultural and rural transformation in the context of Nigeria, as agricultural research and extension systems, work together to realize the potential of agricultural innovation (Triomphe *et al* 2009; Adekunle et al., 2013). Inclusive agriculture innovation is an effective and efficient tool capable of addressing most of the challenges facing agriculture, food systems and natural resources management (McCown, 2001; Radhakrishna, 2009; Kilelu et al., 2014). However, as in many developing countries, Nigeria suffers from the low level integration of the research, extension and education system at all levels. This is partly due to the inadequate and unsustainable resources for supporting already low level of human capital available for agricultural innovation (Kilelu et al., 2014; Davis & Sulaiman, 2014; Ingram & Gaskell, 2018)). In summary, the expected tasks, responsibilities and activities of agricultural research and extension institutions are constantly weakened by limited funding and poor investments, as well as weak coordination in transfer of technology and innovations.

Under the conventional agricultural research and development paradigm, research, technology transfer and technology use have been treated as independent activities whereby research derived knowledge consisting of large prescriptive technology packages flows linearly from researchers to farmers through extension agents (Adekunle et al., 2013). The new approach to agricultural innovation system that is evolving in Nigeria should recognize this challenge and move towards holistic approach to solving technological, institutional and policy challenges of the farming sector. This further calls for the new system of agricultural extension services to address the challenges for the farmer in a locality specific manner that addresses the multitude of problems facing rural communities including low agricultural productivity, food insecurity, rural poverty, environmental degradation and sustainability of the food systems (Tologbonse et al., 2008; Triomphe *et al* 2009; Adekunle et al., 2013). In summary, failure in putting research and innovation output into effective use due to poor functioning agricultural extension systems can result in continued stagnation in the agricultural and food system transformation.

Why policy reforms in extension and advisory services?

Issues connecting sustainable policy reforms in agricultural extension and advisory services to agricultural transformation remain a global challenge with special concern in sub-Saharan African (SSA) countries (Farrington et al., 2002; Worth, 2006; Babu and Joshi, 2016; Faure et al., 2012; Kilelu et al, 2014; Anil et

al, 2015; Ratan et al., 2016; Babu and Joshi, 2019). Meanwhile, the urgent demand for and attention towards systemic policy reforms in the agricultural extension and advisory services cannot be disconnected from the consistent fluctuating economic scenario and the need to respond to both the traditional challenges and the emerging challenges. These challenges include low agricultural productivity leading to rising food prices while escalating food insecurity, increasing hunger and chronic malnutrition, poverty dominance, specializing market burdens, lean export opportunities, and environmental concerns in SSA (Farrington et al., 2002; Kilelu et al, 2014; Ratan et al., 2016).

Additionally, policy reforms in agricultural extension and advisory services are necessitated now in SSA due to the massive pressure mounting on public agricultural extension services to become accustomed to new funding constraints. This is becoming more prominent in the era of and paradigm shift of agricultural and food systems transformation that requires a wide range of extension services. (Rivera and Alex, 2004; Alexopoulos et al., 2009; Faure et al., 2011; Cristovao et al, 2012; Faure et al., 2012; Mukherjee and Maity, 2015). Over the last few decades, the global community has been moving from a public sector driven top down extension system to a multi-stakeholders platforms and multi-institutional linkages of knowledge and information support through an agricultural innovation system perspective for improving the livelihoods of rural people (Faure et al., 2012; Mukherjee and Maity, 2015; Knierim, 2017). Extension policy reform is important in order to operate agricultural sector and food system that is not just inclusively production-focused, but also institutionally flexible and decentralized. While policy reforms are expected to improve the government-funded extension systems at the national levels, they are also meant for bringing other actors and players together to get the extension services to village and community levels. This requires a holistic reappraisal of existing agricultural extension systems with a view to introduce policy, institutional, and technological changes that bring wide-scale privatization of extension and to remove elite capture of the extension system that use them for non-agricultural purposes.(Taye, 2013, Mukherjee and Maity, 2015; Ratan et al., 2016; Knierim, 2017; Oyelami et al, 2018).

Specifically, policy reforms in agricultural extension and advisory services is necessary in Nigeria because public sector extension has become less and less competent over the years to operate effectively to reach Nigeria's remote areas. This further signifies the importance for a reevaluation of the roles of the extension system and prioritizing the human and financial resources allocated to extension service provision. It also allows the systematic integration of public funding with private extension and advisory services delivery. Further, it helps to build upon the strengths of the public extension system and to reduce the weaknesses in extension provision at the village levels.

National Agricultural Extension Policy Objectives and Stakeholders Reactions and Suggestions in Niger State

In what follows, we document the reactions and suggestions of the key multi-stakeholders in several stages of consultations in response to the objectives stated in the NEP.

Objective 1: "To bridge the gap between research findings and actual farming activities, between the researcher or extension agent and the farmer, towards improved national productivity and standard of living for rural farmers"

Reaction and suggestion:

Access to timely and adequate information is a prerequisite for sustainable agricultural development. Hence, in the absence of consistent flow and exchange of information, no innovation would be able to spread to the intended beneficiaries or potential adopters. If this is a valid assertion, then weak information flow are direct impediments to agricultural development and need to be overcome with conscious efforts. The stakeholders opined that over the years, there has been tremendous fundamental gap between researchers, research institutions, extension agents, and farmers in Nigeria. It was further noted that collaboration of many partners working closely with rural communities is fundamental for knowledge to directly reach smallholder farmers and their knowledge reaches researchers in return.

Additionally, there was a general consensus that improved linkage between the extension agents and researchers is instrumental to increasing agricultural productivity in most value chain in developing countries. Meanwhile, several studies (McCown, 2001; Radhakrishna, 2009; Kilelu et al., 2014; Davis & Sulaiman, 2014; Ingram & Gaskell, 2018) have shown that when research is systematically and functionally linked to extension, there is improved pathways for information sharing, knowledge management, and effective utilization of research findings, which enhances the efficient dissemination of knowledge to farmers across the value chains.

It was recognized during the consultations that most extension agents are classified as low exposure agents, non-digitally inclined and have weak technical know-how to catch on with the information and communication technology (ICT) used by researchers. Therefore, it was recommended that the objective of digital extension can be achieved through investment in building the capacity of extension workers to improve their exposure to modern agricultural extension delivery tools such as ICT and other communication skills, which will upgrade and facilitate smooth interaction between the researchers and extension agents. Hence, the latter will in turn disseminate the new innovation to the farmers in a comprehensive manner which fosters adoption of innovations and improve productivity and wellbeing of the farmers. Needless to say, involvement of private sector in research and extension system and connecting them to farmers digitally can help in terms of alliances or teamwork would facilitate the linkages and facilitate the transfer of research and knowledge, including new technology updates through digital pathways.

Objective 2: “To provide an innovative platform for reaching out to the youths (through social media such as Facebook and twitter) with regard to farming activities and career opportunities in the agricultural sector”

Reaction and suggestion:

According to African Economic Outlook (2017), Africa (especially SSA) has the youngest population in the world in terms of average age. The report shows that almost 70% of the total population of Africa countries is below 30 years old (Ghebru et al, 2018; Yeboah and Jayne, 2018; Kwame et al., 2019). Meanwhile, most of the African youth live in rural areas and have limited opportunities for gainful employment (Allen et al., 2010; Ghebru et al, 2018; Yeboah and Jayne, 2018). However, they have untapped potential to transform the agricultural sector through innovation and agribusiness (Ghebru et al, 2018; Yami et al, 2019). Contributors to the discussion during the workshop said that agriculture is currently suffering from an “image problem” among youth in Nigeria and there is a need to showcase successful role models or references in agriculture which will attract young people to agriculture and encourage youth to stay or diversify into the sector.

The discussion on the objective-2 of the NEP during consultation process centered on how youth can be attracted to agriculture using an inclusive innovation system. Youth is the future of food and nutrition security and very key to improve wellbeing especially in the rural households. Yet in Nigeria, similar to what is obtainable in other African countries, a small number of young people perceive agriculture is the way forward or wish for a promising future in agriculture or in rural areas (Irungu et al, 2015; Kwame et al., 2019). The stakeholders argued that many youths in Nigeria have maintained that agriculture is less attractive due to several challenges facing the sector, less innovativeness in practice and traditional way of doing things within the sector. Against this backdrop, the stakeholders lamented the government is making less effort on understanding the dynamics of youth participation in agriculture in Nigeria. Hence, it was concluded that there is shortage of trajectories or evidences on what can work effectively well and what will not thrive to “entice” youth to agriculture. The shortage of such evidence has resulted in tedious effort to make evidence-based policy and design of interventions targeting youth in agribusiness. Participants that agreed the direction of objective-2 of the extension policy document is a welcome development as most youth will be encouraged to involve in agriculture if the use of innovation platforms such as social media (such as Facebook and Twitter) is adopted to reach out to potential youth recruit in agriculture. This approach in the objective-2 is definitely an “imaging rebranding” for agriculture in Nigeria through agricultural extension. Therefore, providing innovation platforms, perhaps through the digital generation phase, can attract youth back to agriculture and serves as brain gain rather than the trending brain drain.

Objective 3: “To build and maintain a comprehensive database of all Value Chain actors of the targeted value chains of interest to Government with regard to ICT use for the dissemination of agricultural innovations”

Reaction and suggestion:

Sustainable development in agriculture is principally dependent on information and data availability. Data availability allows government, donor agencies and development partners to learn from the current situation along the targeted value chains and work together so that they can strategically innovate development programs, projects and solutions to agricultural issues. Meanwhile, studies (Zhong et al., 2015; Irungu et al, 2015; Dhaka and Chayal, 2016; Tyrychtr and Vostrovsky, 2017; Kwame et al., 2019) have shown that the advent of information and communication technologies (ICTs) has advantageously opened new pathways and opportunities in agricultural knowledge management that could play significant roles in minimizing, perhaps eliminating the fundamental challenges related to sharing, exchanging and disseminating agricultural knowledge and technologies. Specifically, ICT-for-agriculture linkages can enhance farmers’ access to markets (both domestic and international), access to finance (formal and informal), tracking and traceability (T&T), information sharing, and information analytics in agriculture.

The participants suggested that over the years, lack of a comprehensive database along different value chain actors is one of the biggest problems facing agriculture in Nigeria. The Director of the Niger State Agriculture Development and Mechanization stated that “*many uninformed decisions have been made in the state regarding several issues (such as land, labor, livestock, capital, and management) due to lack of all-inclusive database along the value chains in the state.*” Another stakeholder from the private sector stated that “*Farmers’ database is not available and particularly those with no access to ICTs is even difficult to pin-point. Hence, as a start, the government can first generate a comprehensive database*

on those farmers with access to and using ICT. The database should be continually be upgraded, if possible monthly, in order to increase the effectiveness of the system.” The contributors highlighted that the process will be of tremendous benefit to the government and farmers. Hence, it was suggested that effort and investment should be consciously directed towards this objective as it plays fundamental role in the success of other objectives of the agricultural extension system at the state level and can be easily aggregated at the national level.

Objective 4. “To support the transformation from subsistence farming into agribusiness”

Reaction and suggestion:

In developing countries like Nigeria, majority of the people are employed in the agricultural industry, especially in a subsistence farming mode (Tyrychtr and Vostrovsky, 2017; Kwame et al., 2019), and they are smallholder farmers (Cervantes-Godoy, 2015; Ghebru et al, 2018; Yami et al, 2019). Agriculture transformation approaches focus on developing agricultural sector allowing farmers to conveniently exit from the subsistence level and participate sustainably in commercial intensive farming. Such transformation will have a significant impact on household welfare, reduce poverty, and contribute immensely to the agricultural gross domestic product (GDP).

The response from the Niger state participants indicated that if adequate extension support related to agribusiness can be given to farmers which encourages stepping up from subsistence farming to agribusiness, it will be undoubtedly considered as a pathway to reach prosperity and improve the livelihood of rural households. It was further reiterated that adequate investment on technology and innovation system in the agricultural sector, can facilitate the improvement in productivity enhancing technologies. One of the participants argued that it is not just about rendering a support to farmers but the levels and quality of support that matters. For example, nature of technical assistance given by government or non-government organizations matters a lot and can significantly speed up the process of agricultural transformation if specific opportunities are identified for converting subsistence farming to small scale agribusinesses that could be aggregated for input supply and output collection. This requires going beyond dissemination and adoption of new agricultural technology as key intervention of the agricultural extension system to incorporate locality specific strategies and investment support at the community and local levels. This should be followed by identifying knowledge base in the local context and problem specific for dissemination. This is particularly because, the local agro-ecologies are predominantly influenced by several factors such as variation in local resource bases, economic forces, social and institutional settings, and public policies.

Based on this backdrop, it was recommended that developing an agricultural transformation (subsistence to agribusiness) plan demands prioritization for the Niger state and agricultural extension system should play a key role in this process. One of the key strategies to achieve this objective is giving intense effort on prioritization of value chains that could convert the subsistence farming into business oriented farmer associations of smallholder farmers. It was suggested that attention should be given to the value chains that have most likelihood of succeeding with slight modifications and approaches in the system of production and connecting the farmers to the markets. Extension system that can address this challenge is most likely to help in kick-starting rural economic growth in Niger state. It was strongly recommended that support focusing on agricultural transformation process in Nigeria should focus on intensified value addition. \ For

speeding up the agricultural transformation process, the extension system should move away from emphasis on the productivity of monocrops of staple foods to high-value crops and livestock combined with downstream processing of these commodities .

Objective 5. “To provide a smooth platform for transparent distribution of farm inputs to farmers and other stakeholders, in line with government’s accountability agenda”

Reaction and suggestion:

The current system of extension has been extensively used for subsidized input distribution over the years. While such schemes are seen as rent seeking opportunities for the system at various levels, it has hindered farm inputs like agrochemicals, fertilizers and improved seeds to get to the target audience who are largely smallholder farmers. There is an urgent need for the government to get out of input distribution business which has not worked and has been detrimental to the development of the private sector in these opportunities. The government programs that supply inputs such as small tractors and power tillers need to have accountability and transparency, which is lacking in the current system.

Interestingly, the objective five of NEP seem to have a strong support among the stakeholders. The participants cited an example of previously implemented input distribution scheme in Nigeria. It was argued that despite several success stories emerging from the implementation of input subsidy scheme [Growth Enhancement Support scheme (GESS)], under the Agricultural Transformation Agenda of the former administration in Nigeria, there are still setbacks in the implementation process which many of the stakeholders tagged to be not transparent as it was portrayed. This further to justify the purpose of objective as a key to delivering a sustainable input distribution among farmers and relevant stakeholders. Therefore, it was recommended that the menace of rent seeking practices and the diversion of limited capacity of the extension system should be stopped both from the supply side and the demand side. On the supply side, it was suggested integrating principles of good governance i.e. control of corruption, rule of law, government effectiveness, voice and accountability, political stability, and regulatory quality to agriculture interventions will lead to improve and sustainable service delivery (such as farm inputs distribution) and enhance positive development outcomes (such as improved agriculture productivity, income generation, food and nutrition security). On the demand side, it was suggested that farmers need to be plain and pro-active to decline lobbying for inputs through unofficial means in order to improve transparency in the sector.

Objective 6. “To help farmers analyze their present and expected future farming and livelihood needs and situations. This will also help them become aware of problems which can arise from such an analysis”

Reaction and suggestion:

Small-scale farmers in Nigeria are confronted with numerous and diverse challenges on a daily basis on and off farm. Additionally, they have more than a few needs that, if satisfied, could assist in countering many of the present and expected future farming and livelihood challenges. Undoubtedly, smallholder farmers are the perfect target audience for agricultural extension agents due to the increasing number of farming and livelihood challenges combined with how constrained they to relevant resources. However, without an adequate understanding of the challenges and needs they face through need assessment and situational analysis, extension staff cannot provide effective and efficient perhaps impactful service to the smallholder farming audience.

The stakeholders stated that without systematic need assessment, situational analysis and due grassroots or rural level consultations, many policies, projects or interventions may be designed to fail from the beginning. The contributors opined that the farmers comprise of diverse array of individuals with varying needs possibly with diverse cultural inclinations. Hence, it was suggested that agricultural extension program designer need to consider configuring their programs and information sharing procedures into different compatible context to comply with the cultural, geographical, and agricultural needs of different parts of the state.

Objective 7. “To strengthen the link between agricultural development activities and the private sector, so that these organizations can provide a wide range of extension education and technical support services, as well as micro-credit financing and supply of essential inputs”

Reaction and suggestion:

The private sector has been recognized as a critical stakeholder and partner in agriculture transformation. Private sector plays vital role in agricultural income generation, on and off farm employment creation, and effective market access while ensuring that critical infrastructures for agriculture sector. Private sector can absorb rural youth both as entrepreneurs as well as employees to enhance rural lives and help them escape the poverty trap. Additionally, in the context of agricultural extension linkage between private sector and agricultural development activities provides critical capital (such as micro-credit financing and supply of essential inputs), knowledge sharing and management, and effective partnerships between innovation actors. Finally, private sector helps in managing risks and in catalyzing participation of other relevant stakeholders in the value chains. Thus, extension services of the private sector through their enterprises need to be nurtured and promoted as part of the extension reform process (Zhong and Babu, 2018)

Accordingly, the policymakers and other stakeholders in the consultative meeting suggested that implementation process of the national agricultural extension policy should allow structure that can leverage public sector investments with private sector capital and expertise in ways that they can assist in providing diverse range of agricultural extension capacity building and technical support services which can offer improved technical know-how, share risk, adaptive capacity, and generate greater returns than either sector could achieve independently.

Objective 8. “The database so generated from this platform can be used to solicit foreign aid and partners with regard to agricultural activities”

Reaction and suggestion:

As earlier indicated, availability of comprehensive database plays important role in developing agricultural sector in Nigeria. Unarguably, one of the challenges facing agricultural production along several value chains is access to adequate financial facilities. Studies (Dhaka and Chayal, 2016; Tyrychtr and Vostrovsky, 2017; Kwame et al., 2019) have supported that establishment of data and knowledge management platforms can help policy formulation and access to financial assistance from development partners’ and donors. Though, over the years, there is a continuous discussion over the likely impact of receiving foreign aid to the development of the receiving countries.

Consistently, there was a mixed reaction to this objective during the consultation meeting. The group within aid-dependence category, contend that foreign aid is very instrumental to funding various developmental

projects within the agricultural sector with the view of complementing insufficient domestic funds especially in states like Niger state where allocation to agriculture is less than 10% of total state budget. On the other hand, the group opposing aid acceptance (anti-aid) argued that many external funds inflow into agricultural sector in developing countries like Nigeria may hinder development because the funds are customarily re-directed to other non-agricultural projects. One of the participants specifically noted that the reason for such actions is that “most politicians’ belief that agricultural projects don’t yield impact immediately so most of them want to embark on projects that can easily earn them core and improve their political scorecard”. While there is truth in both argument, it was suggested that that the government should take full advantage of comprehensive database of farmers, specific value chains and other relevant indicators to generate funds for the dwindling fund access in agriculture in Niger state.

Objective 9. “To increase knowledge and develop insight into field and policy problems and help structure existing knowledge on such issues”

Reaction and suggestion:

The establishment of strong feedback mechanism is one of the important pathways to increase knowledge and develop insight on the trend and current status of field and policy issues. Of note, building up of regular flow of information through policy dialogue across relevant stakeholders within governments, private firms and development partners on lessons learnt and experience on various previous or existing intervention will guide on understanding what works effectively, what does not and avoid the possible risks associated to repetition of failed policy steps.

During the consultative meeting, it was advocated that the use of evidence in policy development is the main way to develop insight and increase knowledge on the issues affecting field and policy issues. It was therefore recommended that policymakers, think-tank and opinion leaders should be encouraged to learn to think and put field and policy issues in perspectives. Additionally, problems associated with field and policy issues should be solved primarily with making constant reference to the existing and comprehensive evidence generated by professional, scientific, and technical methods of inquiry.

Objective 10. “To help farmers, produce marketers, government officials and other stakeholders in the sector acquire specific knowledge related to certain problems and solutions and their consequences so they can act on possible alternatives. This will help them make responsible choices”

Reaction and suggestion:

Human development through the improvement of people's proficiencies and operational skills depends on various factors such as human resources, constraints, and capacity to make and implement considered choices. Meanwhile, effective exchange of knowledge in agriculture can be assumed when relevant stakeholders are creating, disseminating, sharing, and using knowledge and are effectively linked together with the view of identifying predominant problems and recommending options that will facilitate getting out of the problems. Farmers, produce marketers, government officials, agricultural research and the agricultural extension and advisory system must be linked together to enhance exchange of knowledge in order to bring about sustainable innovations in agriculture.

The participants suggested that investment in capacity development programs is key to acquiring useful knowledge and improving the technical know-how of the farmers, and agricultural extension and advisory agents for effective decision making. It was stressed that farmers and other agricultural value chain and commercial actors will directly benefit high productivity from improved knowledge but strong agricultural education and training systems are necessary to underpin such productivity gains. It was further suggested that creating opportunities among stakeholders for building institutional linkages, fostering information networks, and setting priorities in knowledge development are key for problem solving at the farm level.

Objective 11. “To help farmers, produce marketers, government officials and other stakeholders evaluate and improve their opinion-forming and decision-making skills”

Reaction and suggestion:

Opinion forming and decision-making is vital instrument to efficient and effective farm and agribusiness management. Each opinion formed and decision made by farmers, produce marketers, government officials and other stakeholders directly has an impact on the farm productivity, income generation and on the household livelihood outcomes. Knowledge shared through agricultural extension services help in improving the decision-making processes at all levels. However, when the farmer is aware of the decision-making processes and can successfully evaluate the decisions that can affect farm and household level outcomes, the farming is likely to be more profitable and sustainable.

The contributors to the multi-stakeholder consultations opined that developing the capacity and skills of agricultural value chain actors and other stakeholders in the state on opinion-forming and decision-making is crucial to achieving a highly productive agriculture sector in Niger state. It was added that if a farmer can analyze and diagnose the problems facing the production activity, he/she will be able to make a conscious effort on how to combat the challenges and possibly put up a preventive measure.

5 KEY APPROACHES TO THE IMPLEMENTATION OF NEP IN NIGER STATE

Based on the reactions and suggestions of the multi-stakeholders' consultation, we highlight specific approaches and mechanisms for implementing the NEP with particular reference to the Niger state.

a. Identification, linkage mapping, and analysis of the key actors in the agricultural extension and innovation system in Niger State

Implementing NEP should begin with prioritization of important annual activities and events through systematic identification, linkage mapping and analysis of the key actors in the agricultural extension and innovation system in Niger State. Agricultural institutions in Niger state such as Niger State Ministry of Agriculture and the Niger State Agricultural and Mechanization Development Authority (NAMDA) with the support from the Federal Department of Agricultural Extension must identify different actors (various individuals, groups and organizations) with mutual interest in agricultural extension system and that are directly and indirectly involved in the research – extension – farmer collaboration processes. This is essential for constructing a big picture of who and what is involved in getting the best from the agricultural extension in the state; establishing individual actors' perceptions and how these affect agricultural extension intervention approaches in Niger State; and highlighting various strategies and resources that actors mobilize to achieve their individual objectives. Identifying the actors and understanding individual actors' perceptions, strategies, resources and interactions are now acknowledged as critical for the perfect implementation of national policies at state level, and deconstruction of interventions emerging from the policies and rural development processes (Babu and Joshi, 2019). Additionally, linkage mapping is important to organize the state level capacity and to improve productivity of the extension system. This involves mapping and linking technology users to technology developers with further linkages to financial providers, extension service providers, university researchers, researchers of the state level institutions, input providers, policy makers and legislators, other relevant agencies. This is key to revitalizing the agricultural extension innovation process and partnership which will foster overall productivity in the agricultural sector in Niger State.

b. Identification of competency gaps and capacity strengthening needs of the key actors in the agricultural extension and innovation system in Niger State

It is necessary to have a well-articulated national agricultural extension policy but achieving the objectives NEP at the state-level goes beyond mere sharing of the document and sensitizing key state level officials. Effective implementation of the national agricultural extension policy at the state level requires the adequate competency of the actors in the state. This involves technical capabilities of the “forefront” actors to systematically understand new innovations or technologies, adapting them to the context of Niger State, adoption of those ones with high probability of increasing productivity of the priority value chains in the state, improving them based on the feedback received during on-farm trials, and efficient diffusion of the innovation and technologies. Hence, identification of competence gaps among the actors in the state is a fundamental first step to be taken by the Niger State Ministry of agriculture and the Niger State Agricultural and Mechanization Development Authority (NAMDA) with the support of development partners who has interest in Niger state. Multi-stakeholder consultation forum discussions revealed that there are many “struggling” extension agents in the state who do not have adequate access to technical know-how. Therefore, capacity strengthening activities for the key actors within the agricultural systems of Niger State is strategic to have well systematized implementation processes in the state. Strengthening the capacity of

the actors is also critical to create, operate and sustain competitiveness in actors within the agricultural extension and innovation system. Capacity development (CD) interventions from internal and external actors that are targeted at transforming and meeting the agricultural innovation system capacity needs of Niger State should be championed in order to successfully implementing the NEP in the state.

c. Improving governance quality and regulatory enforcement for effective public-private partnership in Niger State

Discussions on poor quality governance and weak regulatory framework in policy implementation in Niger State by the participants revealed the following. Achieving the objectives of NEP and its effective implementation may face “stern” resistance in the due to weak control of corruption among the actors in the agricultural extension system and poor regulatory quality in the state. Participants argued that the implementation NEP in Niger State requires “decontamination” of the system of “bad eggs” that will eventually jeopardize all the efforts and investment by the public and private stakeholders. Quality governance in Niger State should begin by recognizing the facts that all farmers including smallholders, tenant farmers, sharecroppers] should have equal opportunity to sustainably develop agriculture and food systems for their livelihoods, food and nutritional security and poverty-alleviation. Good governance in the state will enhance institutions and processes to serve all stakeholders without prejudice. Improving governance quality also mediates differing interests in order to reach broad consensus on the best interest of groups on policies and procedures. Therefore, Niger State Government with the support of Niger State Ministry of Agriculture must inaugurate a taskforce that will monitor the use of the six indicators for governance in the context of NEP implementation: control of corruption, rule of law, government effectiveness, voice and accountability, political stability, and regulatory quality to effectively backstop the agriculture interventions. Capacity building of the Niger State elected representatives (Niger State House of Representatives), extension professionals and innovative farmers should have a comprehensive and long-standing effect on improved governance, in the context of what they can contribute to agricultural extension development in the Niger State.

6 IMPLICATIONS FOR NATION-WIDE IMPLEMENTATION OF NATIONAL EXTENSION POLICY (NEP)

The case study of Niger state presented above provides four sets of implications for the National level guidance and support for the implementation of the NEP.

1. Sustainable Funding Options and guidance towards partial privatization:

Adequate support and guidance from national level for operations of agricultural extension system in the individual states such as Niger State definitely have some financial implications. Meanwhile, there is substantial opportunity for the public sector to diversify the sources of funding of agricultural extension through selective privatization, user contributions and the charging of fees. Alternatives for lessening financial limitations and burdens to the provision of agricultural extension services may be categorized into two clusters: those in which the private sector or private service providers may be enthusiastic to partake, or beneficiaries to pay; and those that improve the cost- effectiveness and cost-recovery of services that remain in the public sector. Complete or partial state withdrawal from the provision of agricultural extension services may occur through the privatization of existing facilities within the agricultural innovation system in a planned way, or simply by ceasing agricultural extension service provision in the expectation of a positive private sector response. The “substitution” (partial or complete) of private financing for the current lack of public funding will definitely upsurge inclusive efficiency. This is particularly true, if privatization offers efficiency gains in agricultural extension service delivery so that the limited public funds released are invested with extension regulatory activities that may have higher social rates of return. Meanwhile, moving towards a system of private agricultural extension services, funded by user contributions will increase efficiency. In addition, efficiency is likely to be increased where greater user (farmers) contributions are complemented with some more direct support of national level activities on regulation, information sharing, and broad policy guidance of collaboration of national and state level institutions in the agricultural innovation system. The possible roles of public and private sectors at the national and state levels should not be considered in isolation from their overall agricultural sector policy framework and the institutional capacities. A broad suggestion emerging from the Niger State discussion is that a public-private partnership strategy is needed for long term financial sustainability of the agricultural extension system.

2. National Monitoring, Evaluation, and Learning System (MELS)

The issue of monitoring, evaluation and learning system is critical and must be logically designed and addressed in all stages relating to agricultural extension programs. Planning an impressive agricultural extension programs may not be a problem in Nigeria, but poor implementation is a matter of concern. Hence, monitoring and evaluation should be incorporated into every stage of agricultural extension program implementation. It is essential that the national and the state level extension departments develop and implement a comprehensive monitoring, evaluation and learning system for all the processes, actions, and outputs involved in the various segments of the agricultural extension program. The time and effort for monitoring and evaluation should be well budgeted and made part and parcel of the program planning process. Systematic evaluation usually requires a greater expenditure of resources than normal, and hence it should be done when the resources are available, and the use of such evaluation generally justifies the cost. It is important to state that there was full consensus at the Niger state level consultations that poorly monitored agricultural extension projects or programs yield undesired results and may have no impact.

3. Agricultural Knowledge and Information Management (AKIM) in extension

The new face of agricultural extension has shifted from the traditional technology transfer paradigm to a broader phase of improving diverse channels of promoting communication links between key actors (i.e. stakeholders, farmers and extension agents) in agriculture, with the view developing knowledge and information sharing, learning, and ultimately a well-informed agricultural innovation system (Ingram and Morris, 2007; Ingram, 2008; Ward and Chapman, 2008; Sutherland et al., 2013; Klerkx, 2016). The type of knowledge and ideas emerging from the relevant players in the agricultural extension system differs significantly. Therefore, there is a need for developing a national level agricultural knowledge and information management systems for guiding the state level extension systems. The AKIM should be designed in such a way that a wide variety of knowledge can flow between the smallholder farmers, key stakeholders and extension workers and official in the agricultural innovation system by using an appropriate mix of different methods and communication media. Also, extension agents should also manage knowledge in such a way that they keep themselves up-to-date and deliver the best possible support to farmers. Therefore, it was recommended that it is appropriate that a well-functioning AKIM is established with national and state level research and extension systems fully connected for knowledge and information sharing.

4. Quality Control and Regulation

The objective of agricultural extension service delivery is to empower smallholder farmers to make insightful and strategic decisions for improving their agricultural practices with increased productivity and livelihood outcomes. Therefore, in order to achieve this objective, the quality of extension service delivery must to assessed towards its relevancy¹, understandability² and reliability³ (Kassem et al, 2019; Mur et al, 2016; Birner and Anderson, 2007). As noted by the stakeholders during the consultation meetings in Niger State, the central impediment in establishing a well-functioning pluralistic agricultural extension mechanism in the state is the absence of effective coordination to assess quality among various agencies involved in the delivery of agricultural extension services. Therefore, it is critical that the relevant government agencies, private sector and the NGOs providing extension services should take the responsibility of creating “task force” saddle with responsibility of coordinating, technically supervising and controlling quality. Components of quality control may include certification of extension practitioners’ who should meet specific eligibility criteria to be a qualified extension officer. Meanwhile, there should be continuous on-site and off-site capacity strengthening to increase quality of service delivery of the extension officers. To maintain quality of the content of extension delivery, the extension agents must realize that agriculture vis-à-vis farming system is a dynamic subject, with ever-changing processes involved in its practice. Further given the changes in the seasons and times specific operations, there is a need for regular and constant upgrading of the knowledge, skills and technical know-how of the extension agents and related officials. A strong national regulatory system for quality control was recommended as a next step.

¹ Relevancy of the extension delivery has to do with if it is addressing the specific farmer’s needs; how is applicable is the delivery to the farmers existing extension challenges; how affordable it is for the farmer; contextually, how easy it is if tailored to socio-economic and agro-ecological contexts, timely, and rendering itself to further experimentation and adaptation.

² Understandability of the extension delivery is important as it is expected to be clear, concise and void of vagueness in order convince farmers rather than confuse them.

³ Reliability of the extension delivery is linked to the accurate information, validated in the local context. Additionally, it is expected to be complete, consistent and transparent.

7 CONCLUDING REMARKS

Agricultural transformation in Nigeria crucially depends on the productivity increases in its smallholder sector. Productivity increases in turn depend of the knowledge access and its use by the smallholder farmers in their production process of various enterprises. Knowledge generation and dissemination in the agricultural sector depends on well-functioning extension system. In Nigeria, the extension systems driven primarily by the ADPs in the state have been in the decline for the past two decades. To revive the extension system and transform it into a demand driven and pluralistic system, a national extension policy has been developed. Implementation of the NEP has been a challenge as the state specific issues have to be addressed before the national policy could be translated state specific strategies. This study was carried out to document issues, challenges, constraints, and potential solutions and opportunities in implementing the National Extension Policy in Nigeria at the state level using a multi-stakeholder approach in the context of Niger State. In this study, we delve deeper to understand broader and more relevant issues such as the role and deficiency of institutions, drivers of (in)effective policy implementation process, the role and insufficiencies of actors within the agricultural innovation system based on the active participation of different stakeholders.

Several insights have been drawn from the multi-stakeholder consultation process. We identified some issues, challenges, and constraints that may likely affect the effective implementation of NEP in the State. It was found that there is lack of proficient, motivated and well-trained extension staff particularly at the State level. As a result, current extension services in Niger State is struggling to reach the target beneficiaries. There is high level of ineffective coordination and linkages between private and public sector service providers. Hence, this has led to lack of clarity on privatization; the Niger State Agricultural institutions are not clear on how to engage non-State actors both profit and non-profit organizations in extension. We also noted that there are inadequate mechanism/instruments in place for quality (monitoring, evaluation and learning system) control of extension service providers and also a lack of measurement criteria for their evaluation. Another important challenge we identified in State is the lack of clarity on decentralization: the aspects, components, and outcomes to be covered by FMARD, Niger State Government and ADPs at Local Government level in the context of pluralistic extension system.

Despite the issues, constraints, and challenges identified in the State, we identify potential and recommend solutions to some of the challenges. For instance, our multistakeholder engagement shows that during various phases of the development of a given agricultural innovation system, regular capacity development of actors is critical to effective and successful implementation of national agricultural policies in Niger State. Discussion with different service provision groups within Niger State shows that the actors are willing to support innovation within the agricultural extension system if they are provided with space to operate and resources to innovate. Another key takeaway was that implementing the NEP in a state context is necessary but may not be sufficient to achieve the expected results. However, service provision was highly recommended to be more standardized (quality control) especially from the private service providers. Several service activities need to be oriented to small-scale farmers in order to ensure the scaling and institutionalization of the agricultural innovation system in Niger State. Also, we recommend that change is needed in the extension delivery to move away from a top-down public dominated system with a high labor force and multiple levels of offices and administration, to a delivery system focused on measuring impact of extension when utilizing new and multiple delivery mechanisms such as contracting with private sector, development of Information and Communication Technologies (ICTs), and farmer led extension.

Essentially, short and long-term failures in the adoption of NEP in Niger state to avoided if the following precautions are observed. It is recommended that Niger state institutes a comprehensive evaluation of all the processes, actions, and products involved in the various segments of the agricultural extension program. Diversification of funding sources is also critical to the progressive implementation process. Finally, we confirm that “networking, partnership facilitation, and collaboration” functions are crucial to effective implementation of the NEP in Niger State. There are a variety of mechanisms to operationalize a perfect agricultural innovation system. Even if we attempt to draw generic lessons based on our analysis in Niger, the case study shows that the effective and successful implementation of the National Extension Policy remain case-specific, and no ‘silver bullet’ can be provided to support agricultural innovation system in a very diversified nation like Nigeria. Therefore, a state-level or case-specific approach is highly recommended for effective implementation process.

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