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Abstract

In Nigeria, there have been shift over the decades, from investing in the establishment of National Agricultural Research Systems (NARS), to a two-step system of having a NARS and complemented by a state run agricultural system to a current thinking that a pluralistic private sector led agricultural system could provide most efficient and sustainable ways of mainstreaming science and technology in agriculture. Value Chain Innovation Platforms tend to combine the value chain and innovation system concepts to bring stakeholders to join and find novel ways of solving problems by combining indigenous knowledge, business interest and organizational skills by jointly interacting to identify problems and opportunities, seek and apply solutions, learn, reflect and source more solutions for the innovation process to continue. This paper tends to explore the importance of farmers participation in Innovation Platforms formed along a commodity value chain as the Agricultural Transformation Agenda Support Programme Phase 1 is championing in Nigeria. This has associated benefits such as the farmers having closer interactions with other key stakeholders such as financial service providers, fabricators, input agencies and marketers; it supports commercialization objectives because of its emphasis on economic efficiency; has stronger potential to act collectively on policy and advocacy or influence other key actors; facilitates collective bargaining among members. This paper concludes that Value Chain Innovation Platforms can be at the centre of innovation system to implement research and development activities in other to improve farm productivity and marketing efficiency, members also participate in field testing of new technologies and dissemination of successful innovations. The establishment of Innovation Platforms all over the country needs to be adopted in the National agricultural policy, shifted focus from farmers production activities alone to farmers been part of a system that solves problems within the value chain for optimum economic development is advocated.
Introduction.

Over the years the most enduring questions in agriculture has been achieving higher farm yields, post-harvest economic efficiency, and diversification of agro-based products to meet human needs. Responding to these questions involves finding new ideas on how to improve economic practices, farm yield, and post-harvest economic activities (including handling, storage, processing, agro-allied manufacturing, distribution and marketing and marketing). Once such ideas are found, the next challenge involves finding effective mechanisms for communicating and mainstreaming such idea into economic practices.

Governments in various countries are seeking effective ways of mainstreaming agricultural research in the economic arena. In Nigeria, just like in every other African country, there have been policy shift, over the decades, from investing in the establishment of National Agricultural Research Systems (NARS), to a two-step system of having a NARS complemented by a state run agricultural extension delivery system, to current thinking that a pluralistic, private sector driven space could provide the most effective and sustainable for mainstreaming science and technology in agriculture.

Innovation platforms involve stakeholders joining to find novel ways of solving problems by combining indigenous knowledge, business interests and organization skills. The stakeholders interact to jointly identify problems and opportunities, seek and apply solutions, learn, reflect and source more solutions for the innovation process to continue (Adekunle et al., 2010).

Purpose of the Study

Despite the benefits of Value Chain Innovation Platforms especially in transforming different agricultural value chains, not much is done on farmers’ willingness to participate in this regard in Nigeria. It is critical to identify the potentials of farmers’ participation as farmers are not taking full advantage of the benefits of VCIPs.

Methodology

This paper is based on review of the existing Value Chain Innovation Platforms in Nigeria and that being established by the Agricultural Transformation Agenda Support Program (ATASP-1) some state in Nigeria which includes Niger, Kano, Jigawa, Sokoto, Kebbi, Enugu and Anambra states. The main work which is an MSc work is on the determinants of farmers’ willingness to participate in Sorghum Value Chain Innovation Platform (VCIP) of the Agricultural Transformation Agenda Support Programme Phase 1 (ATASP-1) in Kano and Niger States.
Primary data will be collected from registered ATASP-1 farmers in the communities in the local government areas where the ATASP-1 assisted Sorghum VCIPs have been established using systematic random sampling procedure. This study will employ both descriptive and econometric methods of data analysis. The results of the descriptive studies will be presented in tabular and descriptive formats, while the Heckman's probit model will be used to test the willingness of farmer to participate in ATASP-1 assisted VCIP. Probit model are specified as:

$$Y_i = X_i \beta_i + \varepsilon_i, \ i = 1, 2, \ldots, n$$

$$Y^* = \begin{cases} 1 & \text{if } Y^* > Y \\ 0 & \text{if } Y^* \leq 0 \end{cases}$$

Then the probability of participation will be modelled by Maximum Likelihood Probit, from which the inverse Mill's ratios will be estimated.

1.0 Discussions

The value chain concept

The value chain concept entails the addition of value as the product progresses from input suppliers, to producers, to consumers. At each stage in the value chain, the product changes hands through chain actors, transaction cost are incurred, and generally some form of value is added. Value addition results from diverse activities, including bulking, cleaning, grading, packaging, transportation, storing, and processing. The approaches and practices that encompass the full range of activities and services of market actors required to bring a product or service from its conception to its end use and beyond is termed a value chain (Markelova et al., 2009). An agricultural value chain, therefore, can be considered an economic unit of analysis of a particular commodity (for example, rice) or a group of commodities (for example, cereals) that encompasses a meaningful cluster of economic activities linked by market relationships. The emphasis is on the relationships between networks of input suppliers, producers, traders, processors, and distributors (UNCTAD 2000).

The innovation system concept

Innovations systems as a concept is the study of how societies generate, exchange, and use knowledge (Spielman 2006).

The Agricultural Innovation Systems framework maintains that improved interaction helps to forge stronger linkages between stakeholders which will result in better information exchange, and more ideas and opportunities. A common assumption behind the platforms is that actors need an initial push or
opportunity to break barriers against joint discussions, action, sharing and learning. Platforms can provide the space for such joint work and interaction (Anandajayasekeram, 2011).

**Why innovation platform in Agricultural research for development**

An agricultural innovation platform has been described by Adekunle *et al.*, (2012) as “a physical or virtual forum of relevant economic actors, established to facilitate interaction, learning, and joint actions relating to a commodity value chain, leading to participatory diagnosis of problems, joint exploration opportunities, and solutions aimed at enhancing the generation and diffusion of agricultural innovations to achieve increased productivity, and direct or indirect economic benefits to the parties and the larger economy (both national and regional)”.

The above definition implies that an Innovation platform (IP) is a ‘mechanism’ for achieving specific objectives, guided by defined principles. Such principles may include (i) the focus on innovation rather than on production, where innovation is seen as the application of knowledge to specific desired outcomes; (ii) collaborative, interactive learning; (iii) allowance for diversity of stakeholders and actors; (iv) policies supportive of the objective of the IP members; (v) consideration of demand side or ‘consumer’ preference; (vi) the role of cross-cutting services; (vii) consideration of responsive dynamism (Nederlof *et al.*, 2011). Innovation platforms involve stakeholders joining forces to find novel ways to solve problems by combing indigenous knowledge, business interests and organizational skills.

Kilelu, Klerkx, & Leeuwis, (2013) view innovations platforms as the result of a realization that innovation occurs through collective interplay among actors and is influenced by policies, rules, regulations, infrastructure, technology, and cultural norms.

Innovation platforms perform varied functions that include:

- **Information brokering:** through innovation platforms, actors are able to identify information needs of the different actors and facilitate its gathering from different sources, synthesis and dissemination.

- **Address institutional failures:** through advocacy and interaction with regulatory bodies, innovation platforms institute policy changes and attract institutional support.

- **Capacity building:** enables the improvement in knowledge and skills of platform actors while nurturing and strengthening new organizational frameworks.

- **Demand articulation:** innovation platform stakeholders are able to identify opportunities and challenges affecting their value chains through visioning, and assessment of their needs. At times, these needs include information, finances, or technologies (Kilelu, Klerkx, Leeuwis, & Hall, 2011).

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There is easier coordination of the innovation process under innovation platforms. This is because of facilitated negotiation and ability to learn from varied stakeholders acting jointly through innovation platforms.

**Principles, Dynamics and Challenges of Innovation Platforms**

Innovation Platform is a research mechanism. Its primary aim is to facilitate activities that accumulate, evaluate and communicate evidence on effective ways through which agricultural research and its utilization can contribute to innovation and development. Innovation platforms are tools that help stakeholders to interact in a concerted manner. In literature, the concept of innovation platform refers to a set of stakeholders bound together by their individual interests in a shared issue, challenge or opportunity, intending to improve livelihoods, enterprises and/or other interests. It is made up of various actors who co-operate, communicate and share tasks to carry out activities needed for innovation to take place (FARA, 2007). It provides a physical or virtual forum for exploring opportunities to address those common issues, and investigating and implementing joint solutions. Stakeholders have a shared objective in coming together, which needs to be clear to all participants, and translates into a commitment to co-operate. This objective has to be tangible, realistic and achievable. An innovation platform has boundaries which can be thematic, geographic, sectoral or value chain-related. It can be either formal or informal in character, though it always has a number of clear ground rules. These rules define, for example, how decisions are made; how conflicts are dealt with and how new organisations can enter the platform. The existence of ground rules does not mean that the platform is static. On the contrary, a platform is dynamic, with organisations joining and leaving and roles of actors changing over time. The focus of the platform itself may change over time, which may well lead to changes in platform membership (Ugbe, 2010).

Innovation platforms can be formed at different levels (local, national) and in different sectors (dairy, horticulture, etc), and as such will have different objectives. They are often set up as a result of common problems found in a specific sector or sub-sector for which solutions depend on more than one actor. Actors may have different interests yet share a common objective and depend on one another. Innovation platforms are therefore tailored to respond to the challenges and opportunities encountered.

At the local level, innovation platforms tend to focus on improving practices through joint experimentation and linking of farmers to markets and other stakeholders. At the national or international level, innovation platforms tend to have a policy development orientation, often on the basis of findings from activities taking place at the local level (Ugbe, 2010)

**Value chain innovation platforms**
Value chain innovation platforms are innovation platforms formed along a commodity value chains. It brings together actors that play along a particular value chain.

**Value Chain Innovation Platforms in Nigeria**

Value chain innovation platforms are becoming common in Nigeria. Many projects are currently using the platforms to promote agricultural innovations. Examples are provided below:

The Research into use (RIU) programme funded by the United Kingdom’s department for International Development (DFID) implemented three innovation platforms in Nigeria between 2006 to 2011.

The West Africa Agricultural Productivity Programme (WAAPP) since 2013, has sponsored the formation of Value Chain Innovation Platforms (VCIPs) in Nigeria in seven priority commodity subsectors, namely, Aquaculture, Cassava, Maize, Mango, Rice, Sorghum, and Yam. The goal of the innovation platforms is to assist farmers’ groups and other stakeholders to attain increased productivity, income, and economic opportunities of farming systems.

The International Institute of Tropical Agriculture (IITA) is increasingly using innovation platforms as a scaling-out mechanisms or newly developed and existing agricultural technologies and to strengthen multi-stakeholder collaboration in its research programs and projects, such as the Humid tropics program.

The Sub Saharan Africa Challenge Program (SSA-CP), which was coordinated by FARA, used Innovation Platforms (IPs) as its operational frame to engage stakeholders in a network configuration to undertake multidisciplinary and participatory research.

The Agricultural Transformation Agenda Support Programme Phase-1 (ATASP-1) is utilizing the Value Chain Innovation Platform approach to bring different value chain players together, to be able to solve their problems within their capacity.
Agricultural Transformation Agenda Support Programmes Phase-1 (ATASP-1)

The Federal Government of Nigeria (FGN) in the effort to attract private sector investment in agriculture, reduce post-harvest losses, add value to local agricultural produce, develop rural infrastructure and enhance access of farmers and other value chain actors to financial services and markets. The African Development Bank in collaboration with Federal Ministry of Agriculture and Rural Development (FMARD) developed the Agricultural Transformation Agenda Support Program Phase-1 (ATASP-1), which is being funded by the AfDB as its implemented in 5 years (2015-2020) and is estimated to cost UA113.54 million (USD174.85 million), with UA98.78 million (USD152.12 million and UA0.25 million (USD0.385 million) financed from ADF loan and grant resources, respectively, in four Staple Crops Processing Zones (SCPZs) of Adani-Omor, Bida-Badeggi, Kano-Jigawa and Kebbi-Sokoto. (ADF, 2013)

Figure 1: Map of Nigeria showing ATASP-1 participating States (Adapted from ATASP-1 2016 Annual Report)

The Agricultural Transformation Agenda Support Programme Phase-1 (ATASP-1) is utilizing the Value Chain Innovation Platform approach to bring different value chain players together, to be able to solve their problems within their capacity. ATASP-1 which is constituted based on Staple Crop Processing Zones (SCPZs) as a pilot project focusing on three commodities (Rice, Cassava and Sorghum) has four SCPZs which are (i) Adani-Omor SCPZ comprising of Anambra and Enugu States; (ii) Bida-Badeggi SCPZ comprising of Niger State; (iii) Kano-Jigawa SCPZ comprising of Kano and Jigawa States; and (iv) Kebbi-Sokoto SCPZ comprising of Kebbi and Sokoto States. (ADF, 2013). Value Chain Innovation platforms has been established in all the ATASP-1 SCPZs.
Benefits of Value Chain Innovation Platforms

According to Ugbe (2010), the potential benefits of Value Chain Innovation Platforms are as follows:

(i) Farmer organizations have closer interactions with other key stakeholders, such as financial service providers, technology fabricators, input agencies and marketers;
(ii) VCIPs can support commercialization objectives because of its emphasis on economic efficiency;
(iii) VCIPs have stronger potential to act collectively on policy and advocacy or influence other key sectors;
(iv) VCIPs facilitate collective bargaining among members.
(v) Value chain innovation platforms improve markets by: (a) improving institutions related to the marketplace which will ensure organized, transparent markets and grading systems; (b) improving infrastructure including facilities, transport, improving access to markets which will improve physical access as well as removing institutional and policy-related barriers; (c) improving information flow which promotes participation and confidence in markets Providing access to credible information by vetting it before dissemination through alternative pathways of information exchange.
(vi) Value chain innovation platforms improve productivity by: (a) identifying and promoting technologies that will improve production at the household level and address both quantity and quality of products; (b) aligning the requirements of production and demand to develop strategies that bring producers closer to market demands.
(vii) Value chain innovation platforms improve policy by: (a) engaging policy makers at local and national levels to increase understanding of issues; (b) identifying shortcomings of existing policies and proposing new ones; (c) monitoring impact, evaluation and adaption as stakeholders’ experience first-hand the impact of interventions or changes in strategies, it is in their interest to adapt, improve and re-evaluate.
(viii) The iterative nature of the Value chain innovation platform provides an ideal opportunity to participate, monitor and evaluate impact and share success.

Sorghum Technology Adoption Using the Innovation Platform

Even though high yielding improved varieties of sorghum are available, the adoption rates are not high. (Mbulwe, 2015). This low adoption rate has been attributed to factors such as seed companies tasked with the responsibility of handling government released varieties failing to leave up to expectation stating that low demand and high cost of distribution of seeds in far areas is the problem.

The agricultural sector needs to employ a wide range of evolving technologies and farm
practices to meet varieties of changes and heterogeneous demands from consumers and the public for food, fibre and other goods and services provided by agriculture (ATASP-1, 2017). Most farmers know the nature of their problems in the field, however the absence of knowledge of external their socio-economic conditions and limited access to technology, finance and market stop them from adopting technologies and pursuing technological solutions to their problems (ATASP-1, 2017). Several Linear approaches of Extension methods such as the T&V, farming systems have been used in the past, but the participatory Research and Extension Approach (PREA) which has the formation of the Innovation Platforms as key to its success is a key component in promoting technologies adoption by considering the viewpoint of farmers and other stakeholders. Participatory methodologies are widely utilised in making sure that farmers are involved in the technology adoption process by making sure that they themselves saw the need to adopt the technologies for their own social-economic empowerment. (Mbulwe, 2015).

In PREA, farmers and other stakeholders are involved in all stages of research and development; local technical knowledge is utilized as appropriate; farmers are motivated to participate and opened up to new ideas; technologies are better compared and adapted to local conditions; farmers are empowered as diagnostic problem-solvers in the future; farmer-to-farmer exchanges and technology dissemination is stimulated; other actors and especially markets to make agriculture a business are brought together (ATASP-1, 2017).

In PREA, farmers change from passive recipients of message to active participants in their own development process, they also contribute the knowledge of their own natural, financial, economic and social environment; the Extension agents on the other hand change from provider of messages to facilitators of learning processes and contribute their facilitation skills; while the researchers change from detached scientist to facilitators and participants in on-farm research and contribute their experimental design knowledge. (ATASP-1, 2017) The ATASP-1 sorghum value chain in its Extension strategy employed the use of Participatory Research and Extension Approach which involves four stages of: (1) Situation analysis and Social Mobilization, (2) Action Planning, (3) Farmer Experimentation and (4) Participatory Monitoring and Evaluation (ATASP-1, 2017)

Benefits of Participatory Research and Extension Approach

Farmers and other stakeholders are involved in all stages of research and development to:

- Ensures that local technical knowledge is utilized as appropriate
- Motivates farmer participation and opens them to new ideas
- Allows technologies to be better compared and adapted to local conditions
Conclusion and Recommendations

Value Chain Innovation Platforms can be at the centre of innovation system to implement research and development activities in order to improve farm productivity and marketing efficiency, members also participate in field testing of new technologies and dissemination of successful innovations. There is need for the establishment of Value Chain Innovation Platforms across all commodities all over the country and it needs to be adopted in the National agricultural policy. There is also a need for a shift of focus from farmers production activities alone to farmers been part of a system that solves their problems within the value chain for optimum economic development.

The establishment of Innovation Platforms all over the country needs to be adopted in the National agricultural policy, and the need for a paradigm shift of focus from farmers production activities alone to farmers been part of a system that solves their problems within the value chain for optimum economic development is advocated.

References


