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Agricultural Value Chain Extension: A panacea for Agricultural Transformation in Nigeria

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Abstract

The study examined the effectiveness of value chain extension using some field activities among smallholder farmers in Nigeria and beyond and some farm projects that have adopted value chain extension approach. It revealed that the impact of a value chain extension approach if adopted include increased productivity, better post-harvest management, guaranteed and more remunerative market among others. The study also revealed that quite a number of problems constraining farmers from transforming into agribusiness could effectively be managed using the agricultural value chain extension approach. It was therefore recommended that agricultural value chain extension approach be piloted in selected states in Nigeria with a plan for gradual up-scale, as associated teething problems are being identified and appropriately managed to achieve desired outcomes.

Keywords: Agricultural Value Chain Extension; Agricultural Transformation, Anchor Borrowers' Programme.

Introduction

As at 1961, Nigeria was a leading exporter of groundnut with a world's share of 42%. She also exported 27% of the world's palm oil export, 18% of cocoa and 1.4% of cotton as the major West African cotton exporter (Agricultural Transformation Agenda, 2011). This glory however declined over years due to misplaced priority, hence Nigeria dominance in the export of groundnut was eclipsed by China, United States of America (USA) and Argentina. Indonesia and Malaysia took over in palm oil, Cote D'Ivoire and Ghana overtook in cocoa while Mali and Burkina Faso led cotton exports (Agricultural Transformation Agenda Report, 2014). Nigeria did not only loose out from the comity of agricultural commodity exporting nations, but she went further down the ladder to become a net-importer of food, having her food import bill hitting ₦1 trillion since 2005 (ATA, 2011,2011). Today, the only crop where Nigeria is leading globally is cassava with a total

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production of 45 million metric tons as at 2016 but in terms of global value added to trade in cassava-based products she is not yet reckoned with.

How did other competing nations get to overtake Nigeria in the agricultural global market? Essentially, these nations consistently invested in their agricultural commodity value chains without under-rating the role of agricultural extension. They then maintained their dominance by developing strong marketing organizations that linked their farmers to markets and provided support along commodity value chains in form of improved planting materials, fertilizers, credits and rural infrastructure (ATA, 2011). In the contrary, Nigeria jettisoned her commodity market structure instead of upgrading it for better efficiency and went for a substitute she was not prepared to manage effectively (Ortom, 2012).

This progressive set-back in agricultural performance has been of major concern to subsequent regimes in Nigeria leading to the establishment of various agricultural development programmes such as the Farm Settlement Scheme, the National Accelerated Food Production Programme (NAFPP), Operation Feed the Nation, the River Basin Development Authority Schemes (RBDAS), Green Revolution, the Directorate of Food, Roads and Rural Infrastructures (DFRRI), Root & Tuber Expansion Project (RTEP), the Presidential Initiatives on Agriculture for selected crops such as rice, oil palm, groundnut, soybean and cassava and the Agricultural Transformation Agenda. These did not deliver satisfactorily due to several constraints such as poor funding, unfavourable policy environment, high cost of farm inputs, limited farm credits, lack of modern farming tools and poor market linkage leading to poor remunerative prices for farmers' produce (Ladele, 2016).

A critical look at the problems facing agricultural development in Nigeria has revealed that these attendant challenges span through the entire value chain of several agricultural commodities from land preparation to marketing. Traditionally in Nigeria, agricultural extension system has been production-centred, as the more critical stages of post-harvest management and marketing are left to farmers to weather through. Once agricultural extension support moves farmers to achieve bumper harvest, it is believed it has delivered, forgetting that bumper harvest does not always translate to increased income for farmers, especially when market is unpredictable. Now that the reality is dawning on Nigeria to give agriculture the deserved priority, there is the need for a paradigm shift from a production-centred extension to a value chain extension approach. Under a value chain extension approach, extension support with appropriate linkages to relevant farm support services is timely provided to farmers for production efficiency all through the commodity value chain.

Drawing from authors several field experiences in agricultural value chain arrangement, the roles played by value chain extension workers are broadly categorized into three viz:

- i. technical empowerment/capacity building for farmers along all nodes of the value chain

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- ii. timely and appropriate farmers' linkage to relevant support services all through the value chain (backstopping) and
- iii. market sourcing at the domestic, regional and international domains.

Nigerian government is yet to proactively adopt the value chain extension approach in her public extension system; notwithstanding, she is beginning to place emphasis on a value chain approach to develop her agricultural sector. Meanwhile, a keen observation of agricultural field events in Nigeria and beyond showed that some private field project activities are already using this extension approach such as those carried out by British American Tobacco Company, Doreo Partners, Ekha-Agro, Psaltry Farms International, Kenya Tea Development Association (KTDA) and by development agencies such as USAID/MARKETS II, IFAD/VCDP and Anchor's Borrowers Programme. Private outfits often manifest exploitative tendencies once left unchecked while development agencies stand the risk of growing colder in intensity of activities along the value chain except this is guarded against. This paper therefore attempts to review some field activities where value chain extension approach has been deployed.

Objectives of the study

The main of the study was to examine the effectiveness of value chain extension using some field activities among smallholder farmers in Nigeria and beyond. The specific objectives of the study were to:

- i. describe the performance of value chain extension approach in selected field activities;
- ii. identify the challenges associated with the use of value chain extension approach; and
- iii. proffer way forward for implementation of value chain extension in Nigeria.

Methodology

Case study research approach of some field activities was used for the study. These field activities were carried out between 2002 and 2007 in three Oyo State Agricultural Development Project zones namely Saki, Oyo and Ogbomoso, as well as 2013 in one LGA (Yewa North) of Oyo and Ogun States of Nigeria respectively. Similar projects carried out locally and in other countries of the world were also briefly reviewed.

Results and Discussions

Performance of value chain extension approach in selected field activities

The agricultural commodities of interest in the field activities reviewed were soybean and maize as follows:

1. OYSADEP soybean value chain arrangement

Garnering essential pieces of information from Messrs. S.A. Adegebo, the then Program Manager of Oyo State Agricultural Development Programme (OYSADEP) as at the period of this soybean value chain arrangement, L.O. Oladapo, a Zonal Manager and O.S. Adesanya, a field staff from the Agricultural Media Resource and Extension Centre (AMREC) at the Federal University of Agriculture, Abeokuta, Ogun State, Nigeria, the value chain arrangement was said to have been initiated from an international workshop

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on soybean production and profitability attended by the then Oyo state's commissioner of agriculture in 1986, OYSADEP was saddled with the responsibility of introducing the crop (soybean) to Oyo State farmers and encouraging them to produce it on a commercial scale. Leveraging on their credibility among rural farmers, OYSADEP succeeded at persuading the farmers and within a short period of time got most of them to adopt the cultivation of soybean. Apparently, OYSADEP field personnel did follow up on farmers' field operations until the crop was harvested and post-harvest operations were carried out by farmers. But then, the unexpected happened; "no market was found for farmers' soybean produce" worst still there was then little or no knowledge on its domestic utility. Farmers then resorted back to their usual complaints "You have asked us to plant, we did and here is the produce, what do we do with it now?" Obviously, this experience dampened farmers' morale towards the cultivation of soybean. It came as a shocking challenge to OYSADEP who decided not to call it a quit after this unpalatable experience, instead the agency decided to explore all available avenues to proffer a concrete solution to farmers' plight on the production and marketing of soybean in the State. To this end OYSADEP started by collaborating with research institutes that had soybean as mandate crop, such as the International Institute of Tropical Agriculture (IITA), Ibadan, Oyo State, Nigeria, the Institute of Agricultural Research and Training (IAR&T), Moor Plantation, Ibadan, Oyo State, Nigeria and the Agricultural Media Resource and Extension Centre (AMREC) at the Federal University of Agriculture, Abeokuta, Ogun State, Nigeria among others. This partnership afforded OYSADEP members of staff the opportunity of receiving additional training on the cultivation and processing of soybean at household. The Women-in-agriculture department of OYSADEP packaged the household level processing of the crop into soy milk, soy cheese, soy gari, etc and disseminated this to rural women in the State so as to provide alternative utility for the crop in the society. Furthermore, efforts were made by the agency to source for a guaranteed market for farmers' soybean produce and this was obtained with Nestle Company Plc which uses soybean in large quantity. The next challenge was how farmers' soybean produce could meet quality standards required by Nestle Company. The agency's response to this started by leveraging on the World Bank loan available to her then to import multipurpose shelling machines which were distributed across ADP zones in the State for farmers' use at affordable cost. The agency further re-structured her seed processing unit to accommodate soybean produce from participating farmers such that once farmers harvest their soybean crop and thresh, subsequent post-harvest operations like cleaning, sorting, grading and storage were taken over by OYSADEP processing unit at affordable cost to farmers. This was done in a participatory and transparent manner that farmers felt satisfied. After completion of the post-harvest operations, the whole bulk of farmers' produce was stored until the right time to deliver to the off-taker (Nestle Company). The delivery process is likewise executed by OYSADEP, who also follow up with payment. Once payment is made, all accruing costs incurred by each participating farmer is calculated, reconciled with the farmer concerned and deducted from his/her revenue accordingly. The partnership with AMREC in particular afforded the arrangement the opportunity to leverage on one of AMREC's grant facility from SAFGRAD used as a

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revolving loan to finance the pre-season and post-harvest services rendered to farmers. The arrangement went on successfully from 2002 to 2007. The number of participating farmers kept increasing by the years as farmers remarked that “the soybean out grower revenue which comes around mid to late January appears like a yearly bonus to replenish their purses after much unavoidable festive spending”.

A critical look at the above related field experience revealed two forms of extension approaches; the first being the production-centred approach, under which farmers were visited, encouraged and followed up until they adopted the cultivation of soybean. Beyond this, extension worked closely with farmers until they were able to make good harvest from the newly adopted crop and then stopped. Beyond harvesting, the production-centred extension approach seems not to be bothered. However, also unveiled as the second, is the value chain extension approach which did not stop at harvesting stage but went the whole length of the value chain with farmers and ensured all potential areas of bottlenecks for farmers received appropriate extension support either in form of direct assistance or linkage to other relevant sources of assistance. The arrangement got disrupted when the state government adopted a centralized accounting/revenue system which disallowed government parastatals from operating any separate account. The fund used as revolving loan along the value chain was remitted into the government account as directed but could not be accessed as at when needed in the following season.

2. Golden Lad maize outsourcing project

Outsourcing maize through Commodity Alliance Model for Golden Lad Nigeria Limited among Smallholder farmers in Ayetoro LGA of Ogun State, Nigeria supported by Golden Lad Nigeria Limited, Ikorodu, Lagos, Nigeria. According to Ladele, Akinwale and Oyelami (2016), the project undertook activities as follows:

- Farmers were enlisted by Golden Lad Nigeria Limited
- Farmers were trained using Standard Package of Practice (POP) for Maize developed by Pricewell. Training items included in the POP are i. soil/farmland selection ii. land preparation iii. seed selection iv. planting practices v. soil fertility management vi. weed and pest management vii. maize harvesting practices viii. improved post-harvest practices including shelling, winnowing, sorting, grading and bagging and x. improved storage practices.
- Farmers were given regular extension visits,
- Demonstration plot was established to serve as a model for farmers to learn from,
- Full support was given to farmers as advances on land preparation, specified improved seed variety, agro-chemicals, fertilizers (both NPK and Urea), cash advance for all farm operations including weeding, fertilizer application, harvesting, shelling, bagging and transportation to off-taker’s factory.

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- Outcome

- Farmers technical capacity was improved
- They engaged in partial adoption as farmers were the laggard type who adopted improved

Practices slowly

- Farmers' yield improved from an average of 0.85tonne/ha to 1.03 tonne/ha while the demo plot

yield was 2.075 tonnes/ha (Ladele *et al.*, 2016)

- Improved post-harvest practices were fully adhered to
- Farmers' output fully met off-takers' specifications
- The process of delivery to off-taker was successful and itch-free
- Price offered for farmers' produce was remunerative enough
- Farmers bank accounts were credited by the off-taker latest within 48 hours after delivery.

Though not completely in line with a-priori expectation, the outcome still taught valuable lessons;

- i. Farmers selection is key to the success of this extension model
- ii. Change is not always instantaneous but often gradual

3. BabbanGona agricultural franchise model

BabbanGona ("Great Farm" in Hausa) is an agricultural franchise, developed by Doreo Partners with the ultimate goal of improving the livelihoods of Nigerian smallholder farmers. It is a model which essentially provides small holder farmers access to required investment capital, in addition to providing a comprehensive suite of agricultural and marketing services along the entire agricultural value chain (Kola, 2017). BabbanGona inspires and enables hardworking smallholder farmers reach their full potential by providing a private sector channel for cost effective delivery of enhanced agricultural technologies and end-to-end services that optimize yields and labor productivity, while simultaneously improving market access.

BabbanGona service delivery model provides four key services required for smallholder farmers to be successful (Alliance for a Green Revolution in Africa, 2016):

1. Financial service: Utilizing an innovative approach to de-risk members of the farmer groups, BabbanGona raises cost effective capital to finance the members of BabbanGona.
2. Agricultural input services: BabbanGona provides the appropriate balance of agricultural inputs, at the right time, applied in the right way, at highly competitive prices. This ensures that members of BabbanGona attain optimal levels of productivity and product quality, while minimizing negative environmental impacts.
3. Training and development: BabbanGona provides the required training and development to establish strong democratic farmer groups.
4. Marketing services: Members get access to BabbanGona market services that assure good warehousing practices, access to good markets and increased profits.

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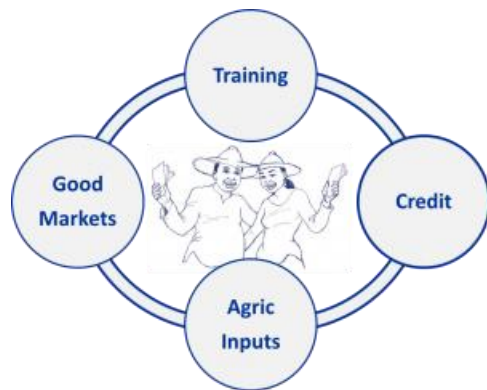


Fig.1: BabbanGona Service delivery model

BabbanGona comprises enterprising smallholder farmers located in Northern Nigeria. Members are committed to transitioning their farm operation, regardless of size, into commercial enterprises. Members working in partnership with BabbanGona utilize the newest agricultural technologies while adopting agricultural best practices. In addition, due to their access to continuous training and development they work on improving their leadership and managerial skills with the goal of improving their farm operations. These members have continued to achieve success due to a comprehensive suite of end to end services aimed at increasing agricultural productivity, yields, income, profit and livelihoods.

One of the senior member services supervisor, Samuel Oloko posited as follows “In 2012, when BabbanGona started it was working with 100 farmers, by 2015 this had grown to 2,500 farmers and in 2016 the Model is hoping to be working with 7500 farmers. As BabbanGona continues to grow, it spreads optimism and hope among smallholder farmers, and demonstrated that when given the right tools, knowledge, and support, smallholder agriculture can be an activity that helps people grow”. BabbanGona has the vision to improve the incomes and livelihoods of one million small-scale farmers by 2025 through transforming them from small-scale farmers to profitable commercial farmers (AGRA, 2016).

4. British American Tobacco out grower scheme

The company does not own tobacco farms or directly employ farmers but their approach to agriculture and working with farmers means that they have strong influence. They buy more than 400,000 tonnes of tobacco from around 90,000 directly contracted farmers and third party suppliers around the globe (UK bat.com, 2014). These are mainly in developing countries and emerging economies in Africa, Asia and Latin America. They invest more than £60 million each year in supporting contracted farmers by providing essential support services for their farming operations in advance. They have more than 1,000 BAT leaf technicians around the world who serve as important source of advice and support for

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these farmers, helping them to run successful, profitable and high-yielding farms (UK bat.com, 2014).

5. Birnin Kebbi Rice Anchor Borrower Programme

Months after its official launching, the Anchor Borrowers Scheme initiated by the Central Bank of Nigeria (CBN) recorded its first set of beneficiaries of 78,000 farmers (Leadership News, 2016). The Anchor Borrowers Scheme was conceived out of the CBN's resolve to achieve a strong and viable agricultural base with more integrated value chains, enhanced food security, fewer imports and higher productivity (Emefiele, 2016). At the flag off in Birni-Kebbi by 2015, the value of the programme to the nation's economic revival was underscored by President Muhammadu Buhari as having a potential of creating millions of jobs and lifting thousands of smallholder farmers out of poverty (Leadership News, 2016). According to Emefiele (2016), he believed the effort would close the gap between the levels of local rice production and domestic consumption as well as complement the Growth Enhancement Support (GES) Scheme of the Federal Ministry of Agriculture by graduating GES farmers from subsistence farming to commercial production.

The programme is designed to help local farmers increase production and supply of feedstock to processors, reduce importation and conserve Nigeria's external reserves. Under the Scheme, anchor serve as off-takers in recognition of their track record and experience in working with out-growers involved in production. The apex bank explained that the scheme involves a finance model whereby the anchor firms, CBN, Nigeria Incentive based Risk Sharing System for Agricultural Lending (NIRSAL) and state governments organise the out-growers and ensure that they comply with contractual terms thereby reducing the incidence of side-selling. The financing institutions will serve as veritable channels for delivering credit to the out-growers (Leadership News, 2016).

As a fall out from this arrangement, the governor of Kebbi State, who expressed satisfaction with the results of the state's collaboration with the Central Bank of Nigeria and the Bank of Industry in pushing the rice revolution agenda, disclosed that Kebbi State has been able to produce 1.4 million tonnes of rice in 2016. The governor said: "We have had very successful dry and wet rice farming seasons and as a result, farmers in Kebbi State have recorded at least 1.4 million tonnes of rice this year". The next stages in the value chain are those of post-harvest processing and marketing which informed the partnership with Lagos State that translated to the invention of LAKE rice (Vanguard News, 2016).

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6. The Kenyan Tea Development Authority (KTDA) contract farming project

Kenya has a large plantation sector co-existing with the largest and most effective smallholder sector in Africa. By the mid-1980s more than 230,000 households were involved in the contract production of tea, sugar, oilseeds, tobacco and horticulture (Baumann, 2000). About 15.5% of all Kenyan smallholders produce under contract accounting for 40% of tea, 50% of sugarcane, and 80% of tobacco production. The centre of the contract system, and the most renowned part of it is the sugar and tea sectors, both dominated by large parastatals. Tea was first planted in the 1920s on plantations. Since then the tea output has increased by 700% with a large part of it from smallholder contribution. For the last three decades this growth has been steered by KTDA which was established in 1964 (Commonwealth Development Corporations, 1989).

KTDA was set up in 1964 by the Government of Kenya, the CDC, OPEC and the EEC. In two decades, KTDA organised the planting of more than 57,000 hectares of tea by 151,000 smallholders. The smallholder sector accounts for 45% of annual tea exports, 87–90% of which is Grade I tea which commands premium prices in the world market. The success of KTDA has been attributed to effective control at all levels of the operation: the quality of planting material through control of nurseries; the quality of production through selective registration; the effectiveness of extension; the supervision of leaf quality; and critically, through the exercise of a buying monopoly. The KTDA has tried to restrict the average holding of its out growers to one hectare to ensure that plucking standards are maintained. This has contributed to the quality of smallholder tea which is consistently of a higher standard than estate tea. Farmers are registered and guaranteed purchase of output as well as technical assistance and credit. Payments to the growers are made throughout the year; one for quantity and another from the bonus received from quality. This provides an incentive for the out growers to maintain good management of their tea. Farmers are represented in policy-making and 8% of registered farmers are shareholders in tea factories. The reasons for KTDA success have been attributed to state support for the scheme, quality checks and incentives for quality tea, and a management structure which allows for farmer participation. Further, tea has been called the ultimate smallholder crop because it is labour intensive, requires labour throughout the year, and provides a regular income. Little and Watts (1994) have pointed out the success of KTDA cannot be explained by the role of any particular sector but by the particular constellation in which they operate. Contract growing involves a government parastatal which is responsible for marketing and input distribution; and a management and ownership structure which includes the government, donors, transnational capital and an extension system combining government and private support. Some observers have argued there are particular reasons for the success of KTDA which are not replicable, and further, the extent to which it is a success is debatable and has to be evaluated in a regional context. On the first issue, observers point out that KTDA benefited from exceptionally favourable ecological conditions for tea, a high degree of external autonomy, and the political influence of the growers. Tea exports were not subject to tax until 1982 and no price stabilization was attempted so the benefits of rising world prices went directly to the producers (Tiffen and Mortimore, 1990). On the second issue – the

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success of KTDA – observers point out the tea yield from smallholders is much lower than that produced from estates and the agronomic standards are highly uneven between farms. There has been an uneven flow of tea to factories; inputs have not been supplied on time; and fertilizer applications have been uneven. Further, extension personnel seconded from the ministry of agriculture are under motivated because they receive lower salaries than KTDA. More serious than the above is the claim that KTDA has concentrated resources in one area and concentrated on relatively prosperous smallholders. The income effects for the Kenyan tea smallholder are positive with above average standards of living in a normal year. The KTDA has drawn heavily on government resources and imposes direct costs on the government for salaries, which are not recovered from the tea growers. They are also able to draw on the best extension staff. Further, smallholder cash crop production may not be the best option for the rural poor. First, they cannot join if they do not have enough resources of land and secondly, the wages paid by smallholders are amongst the lowest in Kenya. Some commentators have pointed out that plantations are actually better for the rural poor because they are more productive and therefore more labour intensive.

Challenges Associated with Value Chain Extension Practice

From off-takers

Exploitative tendencies

From farmers

- i. Input diversion
- ii. Use of Cash advance for unintended purposes
- iii. Extra-contractual delivery and Extra-Contractual Sales (Side-selling).

Way Forward for Implementation of Value Chain Extension in Nigeria

Identified cases of value chain extension approach utilised under some contract farming or value chain farming system arrangements have revealed its potentialities, however, for a successful implementation of this extension approach to take place in Nigeria, the following steps are necessary:

1. Creation of a favourable agricultural business environment; whereby all necessary farm support services are readily available and accessible to all partners in the value chain,
2. Encouragement of formidable farmer cooperative associations to facilitate group actions against possible exploitative activities from off-takers,
3. Formulation of policies to establish agencies that will oversee arrangements between farmers and off-takers to checkmate possible excesses from either end.

Conclusion and Recommendations

The paper has revealed that value chain extension when deployed in connection with all other necessary support services will deliver the desired result. Furthermore, for our agricultural produce supply chain to transcend domestic consumption unto the industrial and export domain, value chain extension with active support services backstopping for smallholder farmers is essential. Formulation and implementation of policies that will

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encourage increase in the number of agro-allied industries and contract farming arrangement can facilitate engagement of smallholder farmers. However, right farmer selection is crucial to such arrangements that they may serve as models for the laggard ones. The paper therefore recommended that Nigerian government should implement a phased adoption of value chain extension approach with a plan for gradual up-scale, as associated teething challenges are being identified and appropriately managed.

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