



Explorative Studies of Value-Chain Actors under the Agricultural Transformation Agenda Staple Crop Processing Zone (SCPZ) Initiative in Nigeria

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Abstract

The study reviewed the proposed Staple Crop Processing Zone (SCPZ) strategy under the on-going Agricultural Transformation Agenda (ATA) in Nigeria, identified the intended stakeholders and their roles, assessed the value chain actors' perceptions on options for attracting agri-business investments to the SCPZs, ascertained their productivities, capacity utilization and returns on investments of key value chain actors. To reach its inferences, the study employed descriptive and stakeholder analyses, undertook productivity and net returns analysis on investments and assessment of capacity utilization of processing mills. The study concluded that the productivities, net returns and capacity utilization of intended value chain actors under the SCPZs are still below potentials and recommended amongst others, the enactment of enabling laws for effective implementation of SCPZ strategy, especially laws guiding agri-business engagements amongst value-chain actors; operationalize effective financial and insurance linkages as currently being proposed under Nigeria Incentive Based Risk Sharing for Agricultural Lending (NIRSAL); amend the Land Use Act No. 6 of 29th March, 1978 to allow for unfettered access to use of land within the targeted 15 zones.

Key words: Agribusiness; SCPZ; Value Addition; Agricultural Transformation Agenda and Nigeria.

Introduction

Nigeria is the second largest economy in Africa and 22nd in the world in terms of the magnitude of the Gross Domestic Product (GDP), which stands at \$USD 296 billion (World Economic Outlook, 2016). Its potential lies in its rich natural and human resources, with a population of 163 million people (National Bureau of Statistics, 2012). There is also huge domestic market that attracts many investors globally.

Agriculture is a huge contributor to its economy accounting for 23% of its GDP (NBS, 2014). However, despite these gains, competitiveness within the sector continued to be compromised by low productivity, profitability and high post harvest losses leading to cyclical household poverty. Thus, in spite of the oil boom era of 1960s, Nigeria has lost its glory in produce export and become a mono-economy, a situation that gradually eroded increasingly youth engagement in economic activities. The industries that depended on agricultural produces gradually folded up forcing the country to become a net importer of various commodities, which it has comparative advantage to produce. This self-denial to tap into its natural resources and expand rural and national economies resulted in many consequences including, reduction of investment to drive jobs leading to loss of jobs for youths, loss of foreign earning, lack of food security, limited range of value addition for household income to mention a few. Consequently, various social vices arose, including armed robbery, militancy, kidnapping for ransom and terrorism. Aside these, economic growth has not been accompanied by a structural change of the Nigeria economy, given that the economy lacks diversification and agricultural production falls short of modernization (African Development Bank, 2013). Currently its per capita GDP stands at \$2,688, thus placing it on 121st position in the world economy.

To restore the place of agriculture and remedy some of the social ills, the Federal Ministry of Agriculture and Rural Development came up with the concept of Agricultural Transformation Agenda (ATA). The four pillars of ATA are access to finance staple crop processing zones (SCPZ), commodity development (value chain development) and private sector participation. Among the pillars, SCPZ is among the front burner, given that it will drive the other pillars to give agriculture a business orientation. According to Okorie (2013), Staple Crop Processing Zones are areas where a combination of commercial and smallholder farmers are clustered for one or more crops and located close enough to potential processing plants and markets.

The Federal Ministry of Agriculture and Rural Development (2011) hinted that the

Federal Government of Nigeria is focusing on attracting private sector agribusinesses to set up processing plants in zones of high food production to process commodities into food production. It revealed that government will enable this by putting in place appropriate fiscal, investment and infrastructure policies for staple crop processing zones. These will include: tax breaks on import of agricultural processing equipment; tax holidays for food processors that locate in these zones; supportive infrastructure, especially complimentary investment by the government in roads, logistics, storage facilities and power. The source further revealed that infrastructure would focus on power, irrigation, flood control, roads, rail and air services while agricultural investment codes will be developed in partnership with Ministry of Finance, Ministry of Trade and Investment and the Central bank of Nigeria (CBN). These provisions were further reinforced by the 2013 fiscal budget of the country. FMARD (2011) revealed that the SCPZs are expected to cover 14 zones across the country and are intended to attract the private sector to set up food manufacturing plants in areas of high production, for import substitution. News Herald (2013) noted that the SCPZ initiative was allocated N1.22 billion in the 2012 fiscal budget and had attracted global financial institutions such as World Bank (WB), African Development Bank (AfDB), United States Agency and for International Development (USAID), International Fund for Agricultural Development (IFAD), Department for International Development (DFID), United Nations Development Programme (UNDP) and Bill and Melinda Gates Foundation, who are backing the scheme with commitments totaling \$2billion. This is in addition to Government receiving 23 Letters of Intent from indigenous and global private-sector investors with commitments worth N370 billion (\$2.3 billion). It however noted the need for the amendment of the Land Use Act for the strategy to succeed. In its work on tobacco and staple agriculture, Virginia Places (2012) argued that the focus on staple agriculture puts all of a region's economic eggs in one basket, in contrast to a diversified economy. The argument stems from the fact that when prices for the staple crop are low, or supplies diminished by a bad growing season, the entire region can suffer heavily.

According to the Doreo Institute (2013), the SCPZs will achieve a number of forms, namely (i) the 'business park' concept, in which, new SCPZs will achieve a reduction in transport and other utilities cost, to harness spillovers and the development of a specialized labour pool; and (ii) SCPZs could be developed around existing operations. This relates to (i) existing state-owned investments in agro-processing or agri-business that can be released to private operators for rehabilitation (if necessary) and operation; and (ii) existing private agribusinesses already being implemented and whose operations could be expanded, in

particular through linkages with small-holders, with complementary public investments. It further posited that aggregating demand from producers within close proximity to the SCPZs will increase economies of scale which improves input distribution channels, efficiency of supply chain and access to market. The SCPZ is designed to cut across the six geo-political regions and comprises production zones and processing zones with full complement of infrastructure to ensure competitiveness along the entire commodity chains. The objectives of the study therefore were to: (i) review the proposed SCPZ strategy under the on-going ATA. (ii) identify the key stakeholders of the SCPZs including their responsibilities; (iii) determine strategies necessary for attracting private sector led agribusiness investment into the SCPZs; (iv) ascertain the margins of sampled value chain actors under the SCPZs; (v) determine the current capacity utilization of agro-processors (potential SCPZ participants) within the study area. The justification for this study stems from the fact that it will provide the Federal Ministry of Agriculture & Rural Development and other relevant Stakeholders, particularly the development organizations critical input bordering on pragmatic framework, strategy and business model required for effective implementation of the SCPZ initiative in Nigeria. This study was carried out from June - August, 2013.

Methodology

Study Area

The study covered the 7 states under the proposed IFAD Assisted Community Based Agriculture and Rural Development Programme-II. The States include Kano, Katsina, Sokoto, Kebbi, Ondo, Delta and Edo. While Kano, Katsina, Sokoto and Kebbi fall under the North Western part of Nigeria, Ondo, Delta and Edo belonged to the Niger Delta Region. The North western part of Nigeria falls under the dry savannah agro-ecological zone of Nigeria, with an average rainfall range of 30-500mm in the Sahel and between 900 -1000 mm in the Northern Guinea Savannah (Ogungbile *et al*, 1999). Temperatures within the zone range from 21°C - 40°C. The relative humidity also vary from 40%-80%, with a favourable climate which supports both crop and livestock production. The vegetation of the zone comprises the northern guinea and Sudan Savannah. Agriculture is the main source of livelihood while the major crops grown in this zone are sorghum maize, millet, rice. Soya-beans, cotton, pepper amongst others. .

The Niger Delta agro ecological zone ranged from coastal plain to rain forest in the southern parts to derived savanna and highlands in the northern parts. The region has a

tropical humid climate characterized by distinct wet and dry seasons. The coastal region has about 9-10 months of wet season while the northern region has 7-8 months of wet season with the dry months having less than 60 mm of rainfall. The driest months have less than 29 mm of rainfall. The dry season starts in November and terminates by February. At this time, the wind becomes dry and dusty resulting in the harmattan haze which characterizes the period. There is very little or no rainfall with cooler nights, low relative humidity, less cloud cover and increased incipient solar radiation resulting in hotter days. The mean annual temperature of the region is between 21°C and 29°C on the Hilly and Plateau areas of the region.

The annual rainfall distribution varies throughout the region. It is lowest in the northern zone (less than 170 mm) and highest in the forest or coastal zone (above 3,000mm) (Community Based Natural Resource Management Programme, 2008). Generally, numerous thematic value chain actors are abound in the two zones, comprising agro-input dealers, farmers, processors, marketers, among others.

Sampling Technique and Sample Size

The multi-state technique was employed in the selection of respondents for the study. The first stage was the purposive selection of the 7 States initially targeted for intervention under the CBARDP-II. The second stage covered the random selection of 2 Local Government Areas per State, while the third stage involved the selection of 2 clusters from each Local Government Area selected. The final stage involved the selection of 10 respondents from each cluster, giving a total of 280 respondents. Respondents covered various value chain actors including agro-input dealers/companies, farmers and processors. Secondary Information was also sourced from the Community Development Associations, Local Government Councils, Corporate Affairs Commission, States' Ministry of Agriculture and Agricultural Development Programmes. .

Method of Data Collection

Data were collected through the use of interview schedule and focus group discussions (FGDs) with the targeted population. Data collected covered agro-input dealers, farmers, processors and marketers (wholesalers and Retailers) and other relevant stakeholders. Data were collected by the design team members assisted by the state personnel, especially the frontline staff.

Method of Data Analysis

Data obtained were analyzed using the: strength, weakness, opportunities threats (SWOT) analytical frame work to review the pros and cons of the proposed SCPZs strategic option; stakeholder matrix for the identification and delineation of roles; desk review for the identification of strategies, gross margin analysis to determine the returns of likely value chain actors within and around the SCPZs and capacity utilization model to ascertain the level of capacity utilization. Other analytical tools included descriptive statistics, and representation of tables.

Gross Margin Analysis

Olukosi and Erhabor (1988) defined the gross margin analysis as the difference between the Gross Farm Income and Total Variable Cost. The gross margin involves evaluating the efficiency of an individual enterprise. Its use for this study to determine profitability under the various value chains, in-spite of the diversity of the sampled value chain actors was based on time constraint, simplicity and ease of computation. The Model is specified below:

$$GM = GI - TVC \dots\dots\dots(1)$$

Where,

GM = Gross Margin (N/ha)

GI = Gross Income (N/ha)

TVC = Total Variable Costs (N)

Average Annual Capacity Utilization

Gona and Tanko (2006) defined capacity utilization as the ratio of operating capacity to the installed capacity multiplied by one hundred percent. The average capacity utilization of the milling machines per state was computed using the following equation

$$A_{ui} = \sum^N Tas / \sum^N PTs / n \times 100 \dots\dots\dots(2)$$

Where A_{ui} = Average Capacity Utilization (%) for the j^{th} state, ($j=1, 2, n$)

Tas = Tonnes of milled commodity by the j^{th} enterprise in the season

PTs = Installed capacity/potential tonnes of commodity mill-able

N = number of milled enterprises in the j^{th} state.

Results and Discussions

Review of SCPZ Strategic Option in Nigeria

The review of the SCPZs strategic option revealed that the strength of the strategy would lie in the enhanced participation of the private sector, increased competitiveness of the targeted value chains arising from increased productivity and profitability, reduced post harvest losses, infrastructural improvement, and development of investment code while weaknesses include security and political instability, weak enabling laws for agribusiness activities, climatic limitation amongst others (Table 1).

Identification of Key Stakeholders within Processing Zones and Likely Delineated Roles

Identification of the stakeholders and their roles followed a critical review of the mandates of the proposed stakeholders through focused group discussions with stakeholders. These stakeholders will include the private sector, including agro-input dealers, producers/farmers, agro-processor/agro-processing companies, marketers (wholesalers and retailers, financial and insurance institutions, service providers such as farmer agents, aggregators, among other. Identified roles covered facilitation of enabling environment such as putting in place favorable macro-economic policies including fiscal incentives, provision of services such as improved agro-inputs, extension support, capacity building, provision and maintenance of infrastructures, facilitation of output and financial linkage (Table 2).

Proposed Strategy for Attracting and Enhancing Private Sector Led Agribusiness Investments around and within the SCPZs

The outcome of the opinions of the respondents on suitable strategies for attracting private sector participation in the SCPZ revealed that about 54% perceived opportunities for linkage to credit and inputs as a key strategy that will enhance their participation, 18% reported linkage to credit and insurance while 12% perceived awareness raising and sensitization as necessary (Table 3).

Table 1: Strengths, weaknesses, opportunities and threats to the SCPZ strategy

Strengths	Weaknesses	Opportunities	Threats
Current research effort and information on the targeted crops will guide the project to more efficient resource use	A break down or malfunctioning of the holistic arrangement within the zones may limit achievement	Strategy will promote sustainable rural development, growth and economic development	Security issues and political upheaval particularly in the North
Wealth of farming communities (Value addition, reduction of post harvest losses mending of broken linkages in agricultural value chain)	Current level of technology transfer will limit performance and effectiveness	There will be increase in Foreign Direct Investment (FDI). Over \$USD2.0 billion has been disbursed in support of strategy and commitment worth \$USD2.0 billion. Zones will attract private sector investment to set up processing plants in areas of high production	Climatic change, pests and diseases incidences
Promotion of import substitution and wealth for the country	Inadequate land tenure arrangement	Poverty alleviation, job creation and women empowerment	Competition for resources from other sectors and economic activities
Competitiveness of agro – industrial production and job creation	Focus on staples detriment to the non-staples and other important economic commodities	Economics of scale, competitiveness of production in terms of efficiency and profitability	Rural-urban migration that is denying farming much of the needed labour
Ensure reduction of post harvest losses	Concept is relatively new to the country and may require heavy external expertise	Development of agribusiness investment and enjoyment of fiscal incentives and waivers, etc.	Globalization and regional cooperation and feed-back loop
Improvement of linkages with industries with respect to backward integration	Location of SCPZs will depend of support of the lower tiers of governance	Infrastructural development of the targeted areas for establishment of the power SCPZs-power, roads, rail and irrigation facilities.	Inadequate enabling laws to facilitate agribusiness activities
High possibility of increasing returns to scale within production and processing zones.			Changes in government policies. Non-staple crops will be neglected.

Source: Primary and Secondary Data, (2013)

Productivity and Net Returns Analysis of Potential SCPZ Participants

The productivity analysis revealed that current crop yield were still below the potential under the intended participants of the SCPZs. Average yield of rice ranged from between 1.0mt/ha to 2.1mt

Table 2: Targeted stakeholders of the SCPZs and their envisage roles and responsibilities

S/N	Stakeholders	Roles
1	Agro-Input Dealers	Provision of agro-input: training: and capacity building of farmers
2	Agro-Input Companies	Development and support for agro-Input dealers: training and capacity building of agro-dealers: extension support
3	Aggregators/Farmers Agent/Traders	Mobilizing farmers: aggregation of farm produce and linkage: facilitating agri-business/off-take arrangements
4	Small Scale Farmers (crop, livestock, etc)	Agricultural production
5	Women and Youth	Services Delivery: Agric production, processing, etc
6	Community Development Associations Agricultural Saving and Credit Association	Mobilizing groups: linking groups to SCPZs and finance Saving and Credit
7	(ASCAs)	
8	NGOs	Service Delivery and advocacy for SCPZ tenants
9	Small and Medium Scale Enterprises	Agro-inputs services: processing
10	Large-scale Processors/SCPZ Tenants	Processing
11	Manufacturers	Off-take Arrangement
12	FGN/State Governments/Local Government Councils	Provision of infrastructure-energy, road, rail, air, equipment, enabling policies
13	Central Bank of Nigeria (CBN)/Commercial Banks/Financial Service Association: Insurance Companies	Providing enabling environment for credit access, credit guarantee through NIRSAL, insurance etc.
14	Development partners (WB, IFAD, AFDB, FAO, USAID, DFID, etc)	Provision of resources: expertise and sharing of best practices.

Source: Field Survey and Secondary Data, (2013)

per hectare compared to a potential of 7.0 mt/ha. Cassava also varied from as low as 3.6 mt/ha in Sokoto to 22.6 mt/ha in Ondo placed against the potential of 28 mt/ha (Tables 4 and 5). The analysis of net returns further revealed that enterprise scale varied according to the type and scope of operation. For the arable crops for instance, production scale ranged from 1ha to 18ha (Companies while margins varied from N 72,700 per hectare of cassava per annum to N 7.3 m per annum on an 18ha improved yellow maize variety production. About N 12.0 m per annum was also obtained from a 12 tonnage per day groundnut oil processing (Table 4). The implications of these results are that productivities and net returns are still below expectations, especially for the small-holders and that proposed interventions under the SCPZs should incorporate technology related and productivity inducing strategies.

Table 3: Responses on Appropriate Strategies for Attracting Private Sector Participation into the SCPZs

Strategies	Frequency	Percentage
Subsidize usage of facilities and inputs	54	40.91
Awareness raising and mobilization	12	9.09
Full privatization of SCPZ	8	6.06
Encourage coordination and linkage arrangement among stakeholders extension, market etc	6	4.55
Value Chain selection should be based on the food security, productivity and profitability potentials	6	4.55
Encourage agri -business promotion support	7	5.3
Linkage of stakeholders to credit and insurance packages	18	13.64
Fast track off-take arrangement between agri-business and participants	7	5.3
Allow for sharing of facilities	6	4.55
Provide training and capacity building	8	6.06

Source: Field Survey, 2013

Capacity Utilization by Agro-Processors in the Study Areas

The result from the capacity utilization model as presented in Table 5 indicated that capacity utilization under the processing of cereals in the states covered under this analysis was still low while it varied from 18.68% in Kebbi state to 43.37% in Ondo State, with a mean 31.12% in the 6 states. This is an indication of the low productivity; competitiveness and profitability by would be SCPZ participants. This result compares closely with the outcome of the profitability and capacity utilization study on rice milling enterprise in North Western Nigeria by Gona and Tanko (2005), who obtained an average capacity utilization of 26.4%. Capacity utilization is a way of gauging slack in the economy and has implication for economic growth and by extension, economic development in the country.

Table 4: Average margins from selected value chain actors

Value Chain Actors	Location	Enterprise	Enterprise Scale	Margins(₦)/Annum
Large Scale Seed Company	Katsina State	Seed production-yellow maize (Direct)	18 Ha	7,281,400
		Maize (Out-grower)	20 Ha	7,528,000
		Rice Faro 44 (Out-grower)	5 Ha	5,184,000
		Rice L19 (Out-grower)	5 Ha	5,184,000
Community Development Associations (CDA)	Katsina State	Sorghum/Cowpea	1 Ha	72,700
Small Holder Farmers	Kebbi State	Rice	2 Ha	514,140
Small Holder Farmers	Edo State	Rice	1 Ha	95,600
Small Holder Farmers	Edo State	Cassava	0.86 Ha	78,500
Small Holder Farmers	Delta State	Cassava	1 Ha	100,000
Small Holder Farmers	Ondo State	Cassava	1 Ha	125,400
Small Holder Farmers	Sokoto State	Rice	1 Ha	125,400
Agro-processor	Kebbi State	G/Nut Oil	12 tons/Day	12,010,400

Source: Field Survey, 2013

Table 5: Estimated average current yield vs. potential yield (selected crops - mt/ha)

State	Rice	Sorghum	Millet	Cassava	Maize	Cowpea	G/nut
Potential yield	7	3.2	2.4	28.4	4	-	-
Katsina	1	1.1	1	9.5	1.3	0.5	0.8
Kebbi	1.6	1.1	1.2	7.2	2.4	0.5	1.3
Sokoto	1.2	-	1.1	3.5	1.1	-	1
Ondo	2.1	-	-	22.6	2.7	4.3	1
Delta	1.8	-	-	15.1	1.7	-	-
Edo	1.8	-	-	10.6	1.8	0.4	-

Source: Field Survey (2013) and Potential Yields from ReSAKSS (2009)

Table 6: Capacity utilization of milling machines under the 'likely value chain actors' in the covered states

State	Average Tonnage/Yr	Average Installed Capacity (Tones)Yr	Capacity Utilization
Delta	12,182.32	32,859.10	37.07
Edo	3,237.27	9,027.27	35.86
Kebbi	2,550	13,650	18.68
Katsina	80,275	325,053	24.7
Ondo	306.12	705.9	43.37
Sokoto	328.26	1,215.28	27.01
Mean	-	-	31.12

Source: Field Survey, 2013

*State figures varied with the number of responses received and the scale of agro-processors' operation

Conclusion and Recommendations

The study revealed that the productivity, profitability and capacity utilization of the would be agro-processors are still below par, but that perceived benefits from the SCPZ initiative will range from increased participation of the private sector, enjoyment of infrastructure such as roads, rail, air services, energy, processing equipment; economies of scale through cost reduction, enhancement of profitability; benefits from fiscal concessions such as tax breaks, tax holidays, implementation of duties and levies and most importantly, creation of jobs and enhancement in national growth. To enhance the contribution of the SCPZs to economic growth and development in Nigeria, there is the need to: facilitate the enactment of enabling laws for effective implementation of SCPZ strategy, especially laws guiding agri-business engagements amongst value chain actors; operationalize effective financial and insurance linkages as currently being undertaken by the Nigeria Incentive Based Risk Sharing for Agricultural Lending (NIRSAL); amend the Land Use Act No. 6 of 29th March, 1978 to allow for unfettered access to use of land within the targeted 15 zones; ensure that categorization of commodities for prioritization in the zones are based on the food security role of such commodities, competitiveness in terms of profitability, productivities and commercialization; put in place an effective agro-climatic prevention, resilience and adaptation strategies and ensure transparent implementation, given the enormous resources and commitments received in support of the strategy already. Security is also a major issue which has to be tackled before the effective take off of the SCPZs, particularly, in the North and the Niger Delta Region.

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