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Risks Mitigation Strategies in Cassava Value Chain under Anchor Borrowers' Programme in Akwa Ibom State, Nigeria

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Abstract:
Cassava value chain is associated with biological and natural phenomenon and as an agribusiness is susceptible to changes of nature. The agribusiness is exposed to arrays of hazards which include pest infestation, diseases infection, yields variability and price fluctuation thereby culminating to risks. The study examined the adopted risk mitigation strategies under Anchor Borrowers' Programme in the value chain in Akwa Ibom State. Qualitative research designs which incorporated personal interview, in-depth interview and focussed group discussions were used in collecting information from the committed participants purposively drawn from the list of stakeholders. Risk identified in the value chain included production, market price, environmental/climate change and government policy while the risks mitigation strategies adopted by stakeholders included loan process monitoring, confirmation of prepaid insurance premium, equity contributions by farmers, adoption of best agricultural practices, certification of inputs supplied and financial capacity of anchors. Results also showed that adopted risk mitigation strategies incorporated risks transfer and coping remediation activities which might provide an efficient economic option for increased return on investment. Monitoring the loan processes and confirming prepaid insurance coupled with appropriate farmers' identity management as well as timely cash disbursements would minimize credit risk thereby encouraging increased bank participation in financing investments in the value chain.

Keywords: *Risks, Mitigation, Rice, Value chain, Strategies*

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I. Introduction

In many of the developing economies such as Pakistan, Guyana, Thailand, Mexico, Iran, Kenya, Ghana and Nigeria, agriculture plays vital roles in their economies (Umoren, Akpan and Ebong, 2016).These roles include: provision of food, income, employment, raw materials for industries, foreign earnings that support the nation's external reserves and many others (Izuchukwu, 2011). Prior to the discovery of crude oil in Nigeria, agriculture was the mainstay of the economy (Olayide, Akinlade and Tijani, 2012) However, from 1970 to 2000, these contributions gradually deteriorated due to a shift in emphasis from agriculture to petroleum sub-sector (Nwangwu, 2019). The recent decline in earnings from the petroleum products due to drastic fall in prices of these products necessitates urgent diversification of the economy. In Nigeria, huge investments in massive production with value addition across the sub-sectors of agriculture should not only be a necessary but a sufficient condition for the sector to drive growth.

The Anchor Borrowers' Programme (ABP)

Prior to the introduction of Anchor Borrowers' Programme (ABP) by the Central Bank of Nigeria (CBN) in the last quarter of 2015, Nigerian food imports was quite alarming because of the huge amount that was used in financing import bills. The import bills for staple food such as rice and wheat were estimated at ₦428billion and ₦307billion in 2013 and 2014 respectively (CBN-ABP, 2015). The trend had devastated effect on employment of our youths who would have been engaged in the production of these commodities in Nigeria, coupled with depletion of foreign reserves and allocation of foreign exchange used in importation of foreign foodstuff (ABP, 2015). The CBN stimulated the production of these staple food commodities locally by the introduction of ABP which has yielded the desired results as evidenced in reduction in import bills due to increased production of these staple food commodities in the country.

In spite of the pivotal roles of the agricultural sector in the Nigerian economy, the sector was neglected due to misplacement of focus. Financing of agricultural production activities was a major challenge. Plethora of financial interventions was introduced to spur growth in agricultural sector but with less credit purveyance to the smallholders who constitute the dominant of the production base of the national economy. In an effort to deepen

credit access and improve production techniques of farmers, the CBN introduced targeted interventions (Umoren, Akpan, and Ebong, 2015). These include: Agricultural Credit Guarantee Scheme,(ACGSF in1977), Commercial Agricultural Credit Scheme (CACS in 2009), Micro-Small Medium Enterprise Development Fund (MSMEDF, in 2013), Nigeria Incentive for Risk Sharing in Agricultural Lending (NIRSAL), Agriculture, Small Medium Enterprise Investment Scheme (AGSMEIS) and many others.

According to CBN-ABP (2015), in reducing the nation's huge import bills and conserving external reserves, various engagements between the key stakeholders in agricultural value chain actors were conducted. Commitments in implementing the programme were obtained through collaboration, sharing and joint responsibilities. The key objectives of ABP include: create ecosystem to link out-growers to local processors, increase banks funding to the agricultural sector; increase capacity utilisation of anchor companies engaged in production of cassava, increase in productivity and incomes of the out-growers; reduce importation; encourage the emergence of new generation of agripreneurs and reduce level of poverty among micro- small holder farmers (CBN-ABP, 2015). ABP was introduced to facilitate massive cassava production, add value and export the derivatives thus conserving the nation's external reserve. Though many criticisms have painted the ABP model of credit purveyance as a political tool with less sustainability yet the impact which the programme has created with series of innovations has made the ABP model a veritable tool in inclusive growth of the Nigerian economy with emphasis on economic diversification.

The Concept of Farm Risk and Cassava Value Chain

Ambarawati,Wijaya and Budiasa (2018) observed that risks were chances of failure or loss that the actual return from holding an asset or investment would change from expected return over time, and maintained that agricultural value chain was susceptible to failure due to inherent risks associated with biological and natural phenomenon. They noted risks as uncertain events or phenomena which could have the probability of causing losses and this assertion was upheld by Apata (2019). In a study on unravelling risk structures in Nigerian cassava supply chains by Adeosun and Opata (2016), their findings confirms that agricultural production was exposed to many risks which affected the farmers/operators and stakeholders in the cassava value chain. The study unravelled the various risks faced by farmers in cassava business and outlined the mitigation strategies adopted in order to control these risks. They concluded that production, processing and storage risks were vital stages in value chain. In evaluating output variability, another study by Ambarawati,Wijaya and Budiasa (2018) maintained that farm cultivation was affected by harvest loss due to uncertainty correlated with factors associated with natural disaster of flood, drought, pest and diseases infection. Furthermore, Ahaneku (2018) identified all possible sources of risk potentials affecting agricultural value chains. These included weather, market policy and institution, production risks caused by flood, scarcity of water for irrigation or excess water at harvest, paddy bug, blast infestation, market risks are caused by volatility in output prices, increase in prices of inputs, increase in transport cost, delayed payments, market accesses preferred by suppliers (Bach,Phum and Vo,(2016). Johl and Kapoor (2015) maintained that biological nature of farm enterprises portend some uncertainties in their production and prices in addition to uncertainties of inputs availability. They concluded that the measurable degree of uncertainty was classified as agribusiness risks which could be adjustable. Agribusiness risks in the value chain could be adjusted through the production process, resources combination, price fluctuation and yield variability of farm inputs and outputs over time. Product and price uncertainty as well as price fluctuation could directly affect the return from enterprise as out growers might have control over price and yield's uncertainty.

The concept of value chain was introduced by Michael Porter in 1985. He used the term to indicate the extent in which organizations could achieve what he referred to as competitive advantage through adding value within the organization (Porter, 1998). The concept became popularised for agricultural development purposes. The concept spread beyond individual firms to the whole industry such as agriculture (Bach,Phum and Vo,2016). Cassava value chain are made up of input suppliers, farmers/out-growers/cooperatives/associations, millers, traders, shops/store-owners and final consumers. Value chain may be conceptualised as sequential linkages through input or raw materials which are transformed into finished outputs for markets and final household consumption (Ambarawati,Wijaya and Budiasa, 2018). The emergence of agriculture value chain has provided catalyst for enhanced transformation in the landscape of arrays of investments and trade with significant results on government as well as enterprises (Gurria, 2012). Agricultural value chain is a concept that identifies a set of actors either private or public, service providers and other set of activities that bring agriculture output from the production in the farms to the families or industrial end-users for final consumption (Gurria, 2012). At each stage of the node or linkage, each segment has backward and forward linkages. Thus, agricultural value chain is integrated framework with various segments comprising production, financing, processing, service provision, marketing and consumption (Rani and Roy, 2018 and Tinsley 2012).At each segment, value addition is enhanced. From specific enterprise level, Cassava value chain is filled with arrays of activities needed in bringing products or services from initial point through stages such as production, financing,

processing, packaging, marketing, transportation and consumption through various actors. Through the cassava value chain, producers/farmers have access to the buyers and vice versa. Therefore, an efficient functioning of the value chain facilitates effective linkages of activities thereby minimizing market risks and increase farmers' incomes; create more employment opportunities and sustainable wealth in agricultural sector. Cassava value chains actors/players consist of farmers, village buyers, traders/transporters, processors, transporters, wholesale markets, retail markets stores keepers and consumers (Umoren 2019).

Anchor Borrowers' Programme and Cassava Production Risk in Akwa Ibom State

Akwa Ibom State is an important cassava production belt in Nigeria. Ajoma, Ezihe and Odoemenem, (2016) observed that cassava production is mainly carried out by the small-scale out growers. The enterprise is typified with arrays of smallholders-based production techniques in which the farm-families own on the average of one hectare of farmland. Cassava production depends on biological processes which are vulnerable to natural phenomena such as weather, pests and diseases. Consequent upon these, the production is risky and investors/actors in the value chains are susceptible to risk and uncertainty in making agribusiness decisions on daily basis (Johl and Kapoor, 2015). Therefore, as observed by Ahaneku (2018) and Apata (2019), agricultural value chain activities are embedded with arrays of risk and uncertainty associated with challenges arising from unstable consumer purchases behaviours, farmers' output , product competition, delays in obtaining farm inputs, changes in climate and health of the operators. Communal and environmental crises also contribute to the risk profiles of the agricultural value chain. These influence the value chain operations and decision-making behavioural patterns. Though cassava producers have been operating under risky environment over the years yet market liberalization and globalization have increasingly made the value chain more risky (Apata 2019). Many activities are adopted to adjust agricultural business risks. These include hedging and forward contracts. In Nigeria, various strategies have been put in many of the credit schemes to manage the anticipated risks. Their impacts have been evaluated by different agencies. More so, the issue of risks mitigation strategies have been raised and debated at several stakeholders' engagements. At many of these fora, several operational questions have always been raised such as: To what extent has the adopted risk mitigation strategies assist in minimizing stakeholders' risks in their investments in the chosen value chain under the Anchor Borrowers' Programme in Akwa Ibom State, Nigeria?

Objective of the study

The purpose of the study was to identify and examine the risk mitigation strategies adopted by the stakeholders in cassava value chain of 2018/2019 farming year in the State under ABP.

II. Methodology

The Study area

The study was conducted in Akwa Ibom State which is located in the coastal south-south region of Nigeria. The State is in the Niger Delta Region which is rich crude Oil. The state is located between latitude $4^{'}32''$ 'and $5^{'}33''$ North and Longitude $7^{'}5''$ and $8^{'}25''$ East. It has a total land area of 7,246km^2.It is bounded on the east by Cross River State on the west by River and Abia State and on the south by Atlantic Ocean. The State is made up of 31 local government areas. In the State, there are two seasons; dry and wet seasons with the average annual temperature range of 24 to 37 degree Celsius. Average rainfall is 2.16mm per annum The state has a population of about 5,451,000 (NPC 2016). The State is basically agrarian society. Soil is mainly alluvial loamy. The major Crops cultivated includes: maize, cassava, yam, and rice. Cocoa and oil palm, rubber are the major cash crops. Akwa lbom State is agriculturally dichotomized into six farming zones namely; Uyo, Eket, Oron, Etinan, Abak and Ikot Ekpene, Akwa Ibom State. The State is one of the major producing States for cassava in Nigeria. The State is made up of 31 local government areas. In the State, there are two seasons; dry and wet seasons with the average annual temperature range of 24 to 37 degree Celsius.

Sampling Methods and Data Collection

Multi stage sampling techniques was used to select respondents needed for the study. The first stage was the purposive selection of 60 participants who were stakeholders in ABP in the study area. The list of the stakeholders was obtained from ABP records in Development Finance Office in Uyo. The second stage involved the random selection of 50 beneficiaries in ABP cassava value chain activities in 2018/019 farming period. Structures questions were framed and used in the interview and Focussed group discussion. Qualitative data were obtained from the beneficiaries by means of interview and focused group discussions. Data collected from the study were from primary and secondary sources.

III. Results and Discussion

Identified Risks in Cassava **Value Chain in Akwa Ibom State, Nigeria**

The results of the personal and in-depth interviews as well as focussed group discussions on the risks management which incorporated mitigation tools by the selected major stakeholders in the value chain in Akwa Ibom State are presented below. Table 1 presents the various identified risks in the value chain and their corresponding mitigation strategies in Cross River State, Nigeria. The identified risks were: loan defaults, flood, drought, disease, pest, production risk, poor yield, heft/spoilage transport cost, poor road networks, theft/spoilage transport cost, poor road networks, poor quality of inputs; poor yield, late input supplies, side-selling, vagaries of price of output. The results of the interviews and focused group discussions indicated that the risk mitigation strategies adopted by each stakeholder were designed to minimize the expected risk. The result finding is in support of previous study conducted by Ibeagwu et al (2019) which stated that cassava farmers in the study area were susceptible to various risks and these adversely affected profit horizons. The cassava farmers' ability to adopt a certain risk mitigation strategy in their farms contributes to increase farm income and welfare. It could be inferred that the level of risk mitigation strategies adopted by the stakeholders may encourage other investors to continue to leverage on the minimal risks profile so as to expand their value chain activities in the State in order to reap from the agribusiness opportunities in the value chain windows. CBN-ABP risks mitigation templates provided that expected risk of price variation is mitigated by the provision of guaranteed minimum price by the Federal Ministry of Agriculture and Rural Development while the risk of poor farm technique with concomitant low yield and technical assistances were remedied by the provision of best agricultural practices. Cassava ethanol and Ultra-modern Cassava processing facilities have been established in Ukana by the Government to create enabling environment for investors in the cassava value chain. This creates assured market for the off-take of the cassava tubers

Besides, loan default being a major expected risk by the participating financial institutions were minimized by effective monitoring of the loan process, provision of adequate and realisable collateral or guarantee, adherent to ABP guidelines, conducting know your customer and business (KYCB), certification of inputs supplies, anchor's capacity certification, and monitoring of field performance and harvests.

Table1: Identified Risks in Cassava Value Chain in Akwa Ibom State, Nigeria

S/No	Stakeholders	Identified Risks	Risk Mitigation strategies
1	PFIs	Loan Defaults	Monitor loan process always, collateral or guarantee, adhere to ABP Guidelines, KYCB Certification of inputs supplies, anchor capacity certification, monitor performance and harvest
2	NAIC	Flood, drought, Disease, Pest	Visit project site for suitability, timely planting, monitor performance, project insured
3	RIFAN	Production risk, Poor yield,	Equity contribution, supply of correct data by farmers, BVN, price of output, off-taker assured. Certification of inputs supplies
4	INPUT SUPPLIERS	Theft/spoilage transport cost, poor road networks	Well secured stores, proximity to project sites
5	ABP/HDFO	Farmers' identity	Bank verification number creation(BVN)
6	Farmers	Production risk, Poor quality; poor yield , late input supply	Assured guaranteed minimum price, timely supply of inputs ,use of certified inputs, keep off rodents/birds, adopt best agricultural practices/adopt modern technologies
7	ANCHOR	Side-selling, vagaries of price of output. poor yield	Insist on the adoption of the best Agricultural practices by farmers

Source: Compiled by Authors, May 2020. (Where PFI means Participating financial institution, NAIC means Nigerian Agricultural Insurance Corporation, RIFAN means Rice Farmers' Association of Nigeria, BVN means Bank Verification Number)

Risks Severity's Impacts of Cassava value chain in Akwa Ibom State, Nigeria.

The potential severity of risks impact on cassava value chain was evaluated during the in-depth and focussed group discussions and the results are presented in Table 2. The table shows the risks severity and probability in the value chain in Akwa Ibom State, Nigeria. The potential severity of the risks impact on the value chain/enterprise is rated from low, moderate, considerable and critical as indicated in Table 2.

Table 2: Risks Severity and Probability in Cassava value chain in Akwa Ibom State, Nigeria

		Potential severity of Impact		
		Low to Moderate	**Considerable**	**Critical**
Probability of event	Highly Probable	Price of inputs, delayed cash disbursed	grass-cutter attack, rodents, termites	Flood and climate change
	Probable	Market price risk and access roads		
	Occasional	Increase of transport, heavy rainfall		
	Remote		Government policy taxes/levy Cassava mosaic disease	
	Improbable			

Source: Compiled by Authors, May 2020.

Table 2 summarises the risk severity and probability of occurrence in the State during the period under review. The highly probable risky events with moderate potential impacts were price of inputs and output coupled with delayed in cash disbursements to beneficiaries in the cassava value chain in the State. Market price risks and access to road network were probable in occurrence and the potential severity of impact was moderate. However, climate change as witnessed by excessive rainfall that caused flood in cassava fields was critical during the study period. Though the Nigerian Agricultural Insurance Corporation remediated the impacts of the occurrence yet out growers maintained the benefits were not enough to fully plough farmers back. Timely distribution of planting inputs by the project management team (PMT) as well as planting according to approved technical specifications as infused to the out growers by the State Agency was some of the strategies to mitigate poor yield at harvest. There was a remote probability of risk occurrence for Akwa Ibom State policy/regulation in imposing taxes or levy on cassava value chain activities.

Risks Mitigation Strategies for Cassava **Value Chain in Akwa Ibom State**

The risks mitigation strategies adopted by the stakeholders in the value chain in the State were assessed during the in-depth and focussed group discussions and the results are presented in Table 3. The various risks mitigation tools or strategies adopted by the stakeholders were specific for the type of identified risks. The Participating financial institutions (PFIs) adopted timely loan monitoring till repayment as to minimize increasing credit risks which may crystalize to non-performing loans that could lead to systemic crisis in the banking sub-sector of the economy. Risks transfer strategy was adopted by CBN. In event of loan defaults by the beneficiaries CBN provided 50% guarantee cover to every loan exposure granted under ABP. In mitigating the occurrence of flood, drought, weather forecast and confirmation of prepaid insurance premium were provided by Nigerian Agricultural Insurance Corporation. National Emergence Management Agency was engaged in risk coping strategy in the State during the period of the study.

Table 3: Risks Mitigation Profile for the Cassava Value Chain in Akwa Ibom State

Identified risks	**Risks mitigation adopted**	**Risk transfer strategy adopted**	**Risk coping strategy adopted**
Loan defaults	Monitor loan process till repayment	50% guarantee by CBN	
Floods/climate change	Weather forecast	Confirmed Insurance premium prepaid	National emergency/Flood management
Weeds, diseases ,pests, and Rodents/ grass cutters	A best agric. practices. Extension services employed		Adopt improved technologies, effective use of extension services
Scarcity of water during dry season	Invest in irrigation facility	Rice insurance premium prepaid	

Source: Compiled by Authors, May, 2020.

Table 3 as shown above presents the risk management strategies adopted by stakeholders in the cassava value chain in the State. As observed in the table, managing risks in cassava value chain could be risk transfer activities, depending on the nature and their forms. Therefore risk mitigation which incorporates transfer and coping remediation activities may provide an efficient economic option for increased return on investment. This

is in tandem with the findings obtained by Ahameku (2018). He found that cassava value chain is a risky agribusiness and actors adopt various risk mitigation strategies to maximise their returns Monitoring the loan process and confirming prepaid insurance would minimize credit risk thereby encouraging more bank participation in financing investment in cassava value chain in the State.

IV. Conclusion and Recommendations

Identified risks in cassava value chain in Akwa Ibom State included production, market price, environmental/climate change and government policy while the risks mitigation strategies adopted by stakeholders in cassava value chain under ABP included loan process monitoring, confirmation of prepaid insurance premium, equity contributions by farmers, adoption of best agronomic practices and irrigation facilities, certification of inputs supplied and financial capacity of anchors. The results of the study showed that risks mitigation which incorporated transfer and coping remediation activities may provide an efficient economic option for increased return on investment. The study concluded that increased adoption of appropriate risk mitigation strategies would minimize vulnerability of the risks in the cassava value chain in the State. This would spur more core investors to increase their portfolio of investments in the State. This would also enhance value addition to the capacity of the State in cassava production quota in the national aggregate production in the sector.

Improvement in loan officer's ratio to loan beneficiary could ensure efficient monitoring of the loan process. Furthermore, confirmation of prepaid insurance by the Insurance institution coupled with appropriate farmers' identity management as well as timely inputs supply/distribution and cash disbursements would minimize credit risk thereby encouraging increased bank participation in financing cassava value investments. These would increase outreach of beneficiaries in cassava value chain in the State. These would enhance financial inclusion thereby aggravating more value addition to Nigerian gross domestic product.

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