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Processors' Acquisition of Productive Assets under National Fadama Development Project III in Southwest, Nigeria

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Abstract

An inquiry into the determinants of sustained acquisition of productive asset by processors under NFDP III in South West Nigeria was conducted. Deploying a multi-stage sampling procedure a total of 126, 120 and 90 cassava, palm oil and palm kernel processors were sampled respectively. An interview schedule was used to elicit information from sample subjects and analysed using both descriptive statistics (frequency, percentage and mean) and inferential statistics (multiple regression analysis). Respondents' adherence to the sustainability component of the project was low for both cassava (71.4%) and palm kernel (72.2%) processors but was high (64.2%) for oil palm processors. Sustained acquisition of productive assets was low 75.0%, 60.0% and 86.7% of cassava, oil palm and palm kernel processors, respectively. The determinant of sustained acquisition of productive assets across the enterprises was adherence to the sustainability component of the project, with (β = 0.284), (β =3.397) and (β = - 1.473) for cassava, oil palm and palm kernel processors respectively. The study recommends the use of groups in the execution of interventions however their cohesiveness is key. It is also recommended that project benefits are given in tranches or phased out, with associated verifiable performance indicators as criterion for assessing the benefits.

Keywords: National Fadama Development Project III, processors, productive assets and sustained acquisition.

Introduction

Recently, development practitioners and policymakers have broadened their attention of agricultural development to include agribusiness or agro-industries. This attention covers post-harvest activities involving transforming, preparing and preserving agricultural products for intermediary or final consumption (Wilkinson and Rocha, 2018). In Nigeria, like most other developing nations, deliberate attempts to develop strategies that will add value to farm products to increase their shelf life, reduce post-harvest losses and store up excess produce to meet the food needs of the people is ongoing. It is noted that small-scale agro-processing enterprises are important sources of potential employment (Hobb's, 2020) among other potential gains. Interventions have also adopted the provision of assets and other laudable components in attaining its objective. Assets are stocks of financial, physical, natural or social resources that can be acquired, developed, improved and transferred across generations. They generate flows, as well as additional stocks (Ford Foundation, 2022). Assets also

generate returns that generally increase lifetime consumption and improve a family's well-being over several generations (Chowa and Masa, 2021).

The enhancement of rural development and poverty reduction has been traced to the potent role of farmer groups. Other activities linked to the role played by farmer groups are their facilitation of productive gains and food security through effective and efficient smallholder participation in agrifood value chains. (Ainembabazi et al., 2017). Also, another potent benefit of the farmers group is the potential to improve smallholder farmers performance (Ahmed & Mesfin, 2017). Furthermore, farmer groups play a significant role in business relationships as both inputs and technical backstopping services are provided during the cropping season. This business plan allows the associated costs of these services to be charged against the final produce of the farmers. (Chagwiza et al., 2018). Agreeably, the deployment of groups in driving extension interventions has been considered a veritable tool for sustaining their development objective. The encouraging attributes of groups made the National Fadama Development Project (NFDP) III adopt it in the execution of its project development objective.

Ikotun (2020) queried that despite huge investments into implementing rural development programmes and the duplications of rural development agencies, the impacts of these are far from been felt. Furthermore, with pious pronouncements and declaration of official intentions as contained in their development plans, rural life remains significantly unchanged after appraising these efforts. Ugoh and Ukpere (2019) assessed the trend of policies on poverty alleviation programmes in Nigeria, beaming its searchlight in the strengths and weaknesses. The authors reflected poor targeting of programme beneficiaries, programme inconsistencies, weak implementation and corruption as threats to past programmes, hence threatening their sustainability.

The NFDP III spanned from 2008-2013, the project adopted a participatory approach. It comprised US$ 250 million from the World Bank through International Development Agency (IDA) credits and $200 million counterpart contribution from Nigeria's federal, state and local governments and beneficiaries (World Bank, 2008). Out of the six components of the project, asset acquisition for individual Fadama Users Groups (FUGs) / Economic Interests Groups (EIGs) was prioritized (42%). NFDP III project established standardized procedures and established platforms to guide its beneficiaries on how to take part in decision-making and effective participation. Capitalizing on the achievements and drawing lessons learned from the initial phases (NFDP I & II), the NFDP III was conceived as a follow-up phase to directly deliver its potential to its direct participants. The project development objective was to sustainably increase the incomes of the beneficiaries by empowering communities to take charge of their own development agenda through Community Driven Development (CDD) approach in project implementation in a socially inclusive manner.

Considering investments in the intervention programme, the non/low sustained acquisition of assets, poor sustenance of project deliverables and the shocking abandoning of project sites and assets after the official span of interventions call for worry. As sustainability is central to all rural development efforts, without it investments in any rural development efforts are short-lived and are of no effect. It is seen as the continued existence of programme dividends long after their establishment. Optimistic about its mode of delivery (the use of groups, the projects' sustainability component (Fadama Users Equity Fund "FUEF") and other complementary factors, it is envisaged that beneficiaries of NFDP III will sustainably acquire productive assets in a bid to achieve the project development objective. It is within this context that the research sought to establish the determinants of sustained acquisition of productive assets by processors under NFDP III in Southwest Nigeria. This was achieved through the following objectives:

1. examine the adherence of processors to operating the projects' sustainability component (FUEF) of NFDP III ;
2. identify the constraints associated with sustained acquisition of productive assets under NFDP III ;
3. identify the benefits derived from NFDP III;
4. determine the sustained acquisition of productive assets under NFDP III.

Methodology

South-West Nigeria is an area of about 191,843 square kilometres and lies between longitude 30°and 7°E and latitude 4°and 9°N. The study population includes processors (cassava, oil palm and palm kernel) that participated in the NFDP III. Multi-stage sampling procedure was deployed during sampling, the first phase was the random sampling of two states, Osun and Ogun states. The second stage involved the purposive sampling of Local Government Areas (LGAs) that have the highest combination of at least two of the Fadama User Groups (cassava processing, palm oil processing, palm kernel processing) each in their Fadama Community Associations' (FCAs). Eleven and ten local government areas were respectively sampled for Osun and Ogun states. A random sampling of 50% of the FCAs from the local government areas earlier sampled purposively was the third stage. Twenty-two and twenty FCAs were sampled from Ogun and Ogun states respectively. A stratified random sampling of 50% of the FUGs for each of the enterprises under the FCAs that were initially sampled was the fourth stage of the sampling procedure. This gave rise to sixty-two and sixty-three FUGs sampled in Osun and Ogun States respectively. The fifth and final stage involved the proportionate stratified random sampling of 30% of the group members from their respective FUGs for each of the enterprises. In all 126 cassava processors, 120 oil palm processors and 90 palm kernel processors were sampled. Cumulatively a total of 336 processors were sampled..

Adherence of processors to operating the projects' sustainability component (FUEF) was measured by presenting a set of items reflecting the operation of FUEF. They include payment of the replacement value of productive assets (exact amount), regular payment of replacement value of productive assets, meeting the timing of repayment agreed on (monthly or quarterly) and periodic reporting of FUEF account to FCA (Fadama Community Association). Their responses were verified by accessing their records. Non-adherence for non-operation, partial adherence for inconsistent operation and full adherence for consistent operation of FUEF were response options presented. An adherence index was generated and used mean for categorization. Constraints associated with the sustained acquisition of productive assets were determined by providing a set of constraints from which they rated them as not, mild or severe constraints. The weighted mean average was used to establish the severity of constraints. The benefits derived from the project were measured by presenting respondents with a set of benefits from which they adjudged as not, low, moderate and high benefit. The weighted mean average was used to isolate these benefits.

Sustained acquisition is proportional weight of the productive assets acquired from the proceeds made from the utilization of start-up assets to both the weight of productive assets acquired from the proceeds made from the utilization of start-up assets and the weight of start-up assets. The weight of an asset is the percentage proportion of its unit price to the total of unit price of the assets acquired, this includes both assets acquired from the proceeds made from the utilization of start-up assets and start-up assets for each processing enterprise from the inception of the project till date (2009-2021). The unit price of each asset is an average of the price of the asset from the inception of the project to date. The price of these assets was determined using the Central Bank of Nigeria inflation rate during the period of acquisition

(2009-2021). Each unit of asset is assigned weight separately under the respective processing enterprises.

Thus, sustained acquisition as used in this study is indicated as:

$$\text{Sustained acquisition} = \frac{\text{WAFPSA}}{\text{WSA} + \text{WAFPSA}}$$

WAFPSA: Weight of productive assets acquired from the proceeds made from the utilization of start-ups assets

WSA: Weight of start-ups assets.

A sustained acquisition index was obtained, and using a mean value of 50%, it was categorized as either high or low. The sustained acquisition index is used in order to assess the extent to which these assets have been used for income-generating activities and replicated. It is a measure of the sustainability of the intervention. Data were analysed using percentages, weighted mean, charts and multiple linear regression

Results and Discussions

Adherence of Processors to Operating the Projects' Sustainability Component (FUEF)

A notable proportion (64.2%) of the oil palm processors acted positively regarding adherence of processors to operating the projects' sustainability component (Figure 1). It is noted that this feat can be adduced to the attention paid to the operation of this component. Furthermore, the mutual understanding experienced among them is a plausible reason for this attainment. With this level of adherence, it is sufficient to state that the rationale for including FUEF in the project which includes enabling the FUGs to establish a savings scheme in order to ensure the sustainability of the investment activities and promote community-level capitalization was attained under this enterprise. Hence the project development objective of increasing the income of Fadama users on a sustainable basis was practicable. Figure 1, also shows that a significant proportion of cassava (71.4%) and palm kernel processors (72.2%) had low adherence to the sustainability component of the project. Low adherence as revealed depicts that the respondents did not key into FUEF which is meant to raise second-generation funds that would be re-invested into their enterprise. Suffice to say that they will find it challenging to sustainably acquire assets, thereby further threatening the achievement of the project development objective. It may be admitted that the low adherence recorded could be partly attributed to the constraints associated with the sustained acquisition of productive assets.

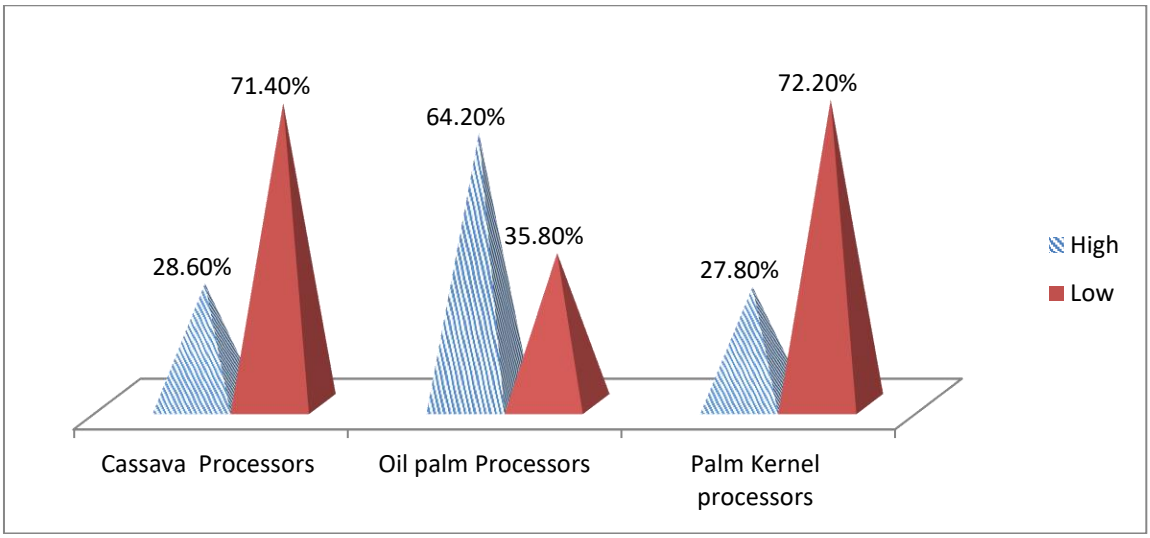

Figure 1: Adherence of processors to operating the projects' sustainability component (FUEF)

Source: Field data2021.

Constraints Associated with Sustained Acquisition of Productive Assets

Table 2 shows that cassava processors identified trivializing the role of FUEF by group members ($\bar{x}$=1.71), supply of low-grade-machines ($\bar{x}$=1.68), poor remuneration/low profit from enterprise ($\bar{x}$=1.44), high cost of productive assets ($\bar{x}$=1.07) and price fluctuation ($\bar{x}$=0.98) were most prominent among the constraints associated with the sustained acquisition of productive assets. Oil palm processors considered poor remuneration/low profit ($\bar{x}$=1.88), poor market information ($\bar{x}$=1.82), supply of low-grade machines ($\bar{x}$=1.73), high cost of raw materials ($\bar{x}$=1.72) and inadequate infrastructure at processing site ($\bar{x}$=1.65) as prominent while palm kernel processors attest to the high cost of raw materials ($\bar{x}$=1.93), price fluctuation of raw materials ($\bar{x}$= 1.87), trivializing the role of FUEF by group members ($\bar{x}$=1.86), poor remuneration/low profit ($\bar{x}$=1.74) and inadequate infrastructure at processing site ($\bar{x}$=1.61) as notable constraints associated with sustained acquisition of productive assets.

It is noted that the sustainability component is meant to sink funds from proceeds made from processing activities which will be used for project expansion, this is specifically designed to sustain the project, and trivializing this pivotal part of the project is a threat to its sustainability. The supply of low-grade machines will make processors spend financial resources fixing them. This will have also made them lose ample time before kick-starting the project in full scale. The poor remuneration/low profit from processing activities and price fluctuation of raw materials would have prevented processors from making remunerative income since their cost of production would have increased. It is observed that as a result of poor market information, processors will find it difficult to predict market forces (demand and supply of products), hence, they will be unable to take advantage of the information to make brisk income. All these are potent threats to attaining the project's development objective. This finding agrees with Mhaze et al. (2021) in a similar study reported that agro-processors in Zimbabwe faced numerous constraints including poor equipment, shortages and high cost of equipment /spare parts, limited access to information from extension services, limited access to appropriate packaging material for a processed product, lack of marketing skills, inadequate support services from training institutions, private sector consultants, small enterprise advisors, research institutions and engineering workshops, as well as erratic power supply and high cost of processing equipment.

Table 2: Constraints associated with sustained acquisition of productive assets

Constraints associated with sustained acquisition of productive assets	Severity of Constraints Cassava processors weighted Mean (n= 126)	Oil palm processors weighted mean (n= 120)	Palm kernel processors weighted mean (n= 90)
Supply of low-grade machines	1.68*	1.73*	1.57*
High cost of productive assets	1.07*	1.32*	1.59*
Poor equipment backup service	0.76*	0.85	1.12
Scarcity of spare parts	0.48	0.75	0.91
Costly spare parts	0.90*	0.72	0.91
Hugh cost of machine maintenance	0.90*	0.78	1.08
Inadequate labour to operate assets	0.71	0.57	0.68
Inadequate labour for processing activities	0.87*	0.53	0.68
Huge cost of labour	0.91*	0.55	0.68
Scarcity of raw materials	0.79*	1.42*	1.57*
Huge cost of raw materials	0.88*	1.72*	1.93*
Price fluctuation of raw materials	0.98*	1.62*	1.87*
Poor market information	0.58	0.77	0.72
Poor storage of processed products	0.34	0.12	0.49
Inadequate infrastructure at processing site	0.44	1.65*	1.61*
Poor remuneration/ low profit	1.44*	1.88*	1.74*
Group disharmony	0.44	0.98	1.28*
Poor group leadership	0.27	0.99	1.28*
Lack of commitment by group members	0.45	0.84	1.16*
Non payment of user fees by group members	0.27	1.04*	1.20
Non payment of user fees by non-group members	0.29	0.74	1.01
Inconsistent payment of user fees by group members	0.32	0.81	1.01
Inconsistent payment of user fees by non-group members	0.35	0.74	1.01
Mismanagement of proceeds made	0.29	0.63	0.73
Cartel problem	0.96*	0.47	0.56
Lack of understanding of the role of FUEF	0.36	0.97	0.66
Trivializing the role of FUEF by group members	1.71*	1.82*	1.86*

Source: Authors construct, 2021. *Constraints

Benefits Derived from NFDP III

Table 3 reveals that an increase in the quantity of processed products ($\bar{x}$=2.39), source of employment ($\bar{x}$=2.37), improved health of processors ($\bar{x}$=2.37), easy access to productive assets ($\bar{x}$=2.37) and increase in the quality of processed products ($\bar{x}$=2.25) were benefits derived most from the project by cassava processors. Oil palm processors attest that reduction

in the cost of production ($\bar{x}$=2.18), reduction in the duration of processing ($\bar{x}$=2.13) and reduced drudgery/stress associated with processing ($\bar{x}$ =2.08) were prime among the benefits derived. Reduction in the cost of production ($\bar{x}$=1.86), minimizing loss of raw materials during processing ($\bar{x}$=1.83) and reduction in the duration of processing ($\bar{x}$=1.82) were prominent among the benefits derived by palm kernel processors.

It is noted that with the project, processors increased the quantity they process leading to increased output within the same processing time frame. Processors will also be productively engaged in their processing venture. Suffice it to state that as they acquire assets on a sustainable basis, their employment is assured. Owing to processors having their assets within their reach, they will be able to carry out processing activities at their convenience as they were assured of starting and ending the process without hindrance as all the phases of the processing activity is within a confined environment, this also has a role in reducing the cost of production. This view is further buttressed by UNDP (2020) that the effectiveness of an intervention reflects the extent to which it has brought about a targeted change in the life of the individual beneficiary

Table 3: Benefits derived from NFDP III

Benefits derived from NFDP III	Degree of perceived benefit		
	Cassava processors Weighted Mean (n= 126)	**Oil palm processors Weighted Mean (n= 120)**	**Palm kernel processors Weighted Mean (n= 90)**
Reduction in the duration of processing	2.06	2.18*	1.86*
Reduced drudgery/stress associated with processing	2.23	2.13*	1.82*
Increase in quantity processed products	2.16	2.08*	1.80*
Increase in quality of processed products	2.39*	1.98*	1.80*
Minimize loss of raw materials during processing	2.25*	1.85*	1.80*
Increase in income generation	2.17	1.85*	1.83*
Source of employment	2.13	1.60	1.50
Skill development (processing expertise enhanced)	2.37*	1.68	1.49
Improved health of processors	2.21	1.30	1.42
Easy access to productive assets	2.37*	1.78	1.57
Reduction in the cost of production	2.37*	1.85*	1.57

Source: Authors construct, 2021. * Benefits

Sustained Acquisition of Productive Assets.

Table 4 shows that the sustained acquisition of productive assets was low across the three enterprise groups, cassava (75.0%,) oil palm 60.0% and palm kernel (86.7%). It suggests that the assets they have acquired from the time they were empowered to date are low compared to the total assets they have under their enterprise. This position has further put the achievement of the project development objective (to increase the income of fadama users on a sustainable basis) at risk as this feat can only be achieved with the notable sustained acquisition of productive assets. With this data, it suffices to say that the project is dying out and will need conscious efforts by the project beneficiaries to reclaim lost grounds. With the outcome of this study, the continuity of the project is not guaranteed, as sustainability under this project is heavily dependent on the sustained acquisition of productive assets.

Table 4: Sustained acquisition of productive assets.

Sustained acquisition of productive assets	Cassava processors (n=126) %	Oil Palm processors (n=120) %	Palm kernel processors (n=c0) %
High	25.0	40.0	13.3
Low	75.0	60.0	86.7
		Categorization Criterion: Low < 50 % High ≥ 50 %	

Source: Authors Construct, 2021.

Determinants of Sustained Acquisition of Productive Assets

Table 5 shows the explanatory variables of determinants of sustained acquisition of productive assets. Group cohesiveness (β = 0.462) and adherence of processors to operating the projects' sustainability component (β = 0.284) were identified for cassava processors. Oil palm processors had adherence to the sustainability component (β = 3.937) while palm kernel processors had group cohesion (β = 3.215) and adherence to the sustainability component (β = 0.302) were identified as determinants of sustained acquisition of productive assets. With group cohesion, it is noted that processors were able to champion the course of sustained acquisition of productive assets. Suffice to posit that decisions regarding activities that will promote the health of their enterprise will be collectively achieved owing to their cohesiveness. This assertion is supported by Charles and De Paola (2020) that members who work in cohesive groups believe that the organizations performance was the principal focus at any situation. The contribution adherence of processors to operating the projects' sustainability component further reiterates that sustaining the project was hinged on processors' adherence to the sustainability component of the project. It can be inferred that only with adherence to the sustainability component will there be a guaranteed ploughing back of the sinking fund into sustained acquisition of productive assets.

Table 5: Determinants of sustained acquisition of productive assets

Variables	Processors' groups		
	Cassava β	Oil palm β	Palm kernel β
Group cohesion	0.462*	-0.502	3.215*
Adherence to the sustainability component	0.284*	3.937*	0.302*
Constraints associated with sustained acquisition of productive assets	-0.147	0.055	1.551
Benefits derived from the project	0.137	3.460	0.049

Source: Authors construct, 2021. ***** Determinants

Conclusion and Recommendations

Adherence to the sustainability component was low. However, oil palm processors recorded high adherence to the sustainability component. Poor remuneration/low profit, high cost of raw materials, trivializing the role of FUEF, supply of low-grade machines and inadequate infrastructure at the processing site were constraints associated with the sustained acquisition of productive assets. An increase in the quantity produced, minimizing the loss of raw materials during production and a reduction in the cost of processing were the benefits derived from the project. Sustained acquisition of productive assets was low across the processor groups. Group

cohesiveness and adherence to the sustainability component were the determinants of the sustained acquisition of productive assets. It is recommended that project benefits are given in tranches or phased out, with associated verifiable performance indicators as criterion for assessing the benefits.

References

Ahmed, M.H.,& Mesfin,H.M.(2017).The impact of agricultural cooperatives membership on the wellbeing of smallholder farmers: Empirical evidence from eastern Ethiopia. Agricultural and Food Economics, 5(1), 6.

Ainembabazi JH, van Asten P, Vanlauwe B, et al. (2017) Improving the speed of adoption of agricultural technologies and farm performance through farmer groups: Evidence from the great lakes region of Africa. Agricultural Economics 48(2): 241–259.

Charless, S.A., & DePaola, C. (2020). The Measurement of Cohesion in Work Teams. *Small Group Research*, 31(1), 71–88

Chowa G.A & Masa R.D. (2021). Wealth effects of an asset- building intervention among rural households in sub-Saharan Africa. *Journal of the Society for Social Work and Research*, *Volume 3*,Issuue 4, 329-345

Ford Foundation. (2022). *Building Assets to Reduce Poverty and Injustice.* New York: Ford Foundation

Hobbs, R. (2020). *Small firms*. ESRC Centre for Business Research, University of Cambridge, UK.

Ikotun, A. (2020). *Strategies for Promoting Integrated Rural Development in Nigeria*: *Theory and Practice*. Badagry: Matram press, pp26

Kumar V., Wankhede, K.G. and Gena, H.C. (2016).Role of Cooperatives in Improving Livelihood of Farmers on Sustainable Basis.American Journal of Educational Research, 3 (10): 1258-1266.

Mhazo, N.; Mvumi, B.M.; Elijah Nyakudya, E. & Nazare, R.M. (2021). The status of the agro-processing industry in Zimbabwe with particular reference to small- and medium-scale enterprises. African Journal of Agricultural Research Vol. 7(11), pp. 1607-1622, 19 March, 2012 .Available online at http://www.academicjournals.org/AJAR

Ugoh, C.C & Ukpere, W.I. (2019) “Appraising the trend of Policy on poverty Alleviation Programmes in Nigeria with emphasis on the National Poverty Eradication programme (NAPEP)” in African. *Journal of Business Management, South Africa*, Volume 3, (12) December, pp 847-854.

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