CSS 009: Commercialization of cassava seeds and determinants of participation in South-East and South-South agro-ecological zones, Nigeria

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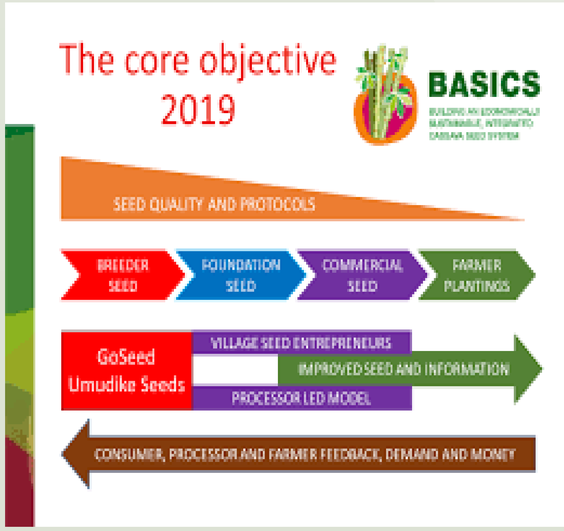
INTRODUCTION

Cassava is the most consumed root and tuber crop in Sub-Saharan Africa. Nigeria is the highest producer at about 59.5million metric tonnes (FAOSTAT, 2018). National stem demand for improved cassava varieties is valued at about 202.5 billion naira if only a quarter of the country's arable land is used for cassava production. Despite our interesting profile, stem production is not meeting the national demand. There is enormous business opportunity available in closing this demand gap. This informed the launch of the project- Building a Commercially Viable and Sustainable Cassava Seed system (BASICS) to maintain varietal purity, traceability, certified improved commercial cassava seed system in Nigeria.



OBJECTIVES

The broad objective of this study is to analyze the level of commercialization of cassava seeds and determinants participation in South-East and South-South agro-ecological zones, Nigeria. Specifically, the study: (1) described the socio – economic profile of the respondents involved in village seed entrepreneurship; (2) ascertained the level of cassava seed commercialization in South-south and South-east Nigeria; (3) estimated the determinants of commercialization among the village seed entrepreneurs; and (4) estimated the determinants of participation in cassava seed commercialization among the village seed in the study area.

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RESEARCH METHODOLOGY

This study was carried out in south-south and South-east Nigeria.

Purposive sampling technique was adopted to select seed entrepreneurs in the study area.

Geo-political zones	States	Sample respondents
South- South Nigeria	Cross River State	18
	Akwa-Ibom State	20
South-East, Nigeria	Abia State	10
	Imo State	15
Total		**63**

Objective 1 was analyzed using Descriptive statistics such as frequency, percentage and means.

Objective 2: was analyzed using Commercialization index proposed by Von Barun (2013) is given as:

$$CI = \frac{Total\ quantity\ sold}{Total\ quantity\ produced} X\ 100 \quad ...(1)$$

For Objective 3, Ordinary Least Square multiple regression technique was used. The model is fitted as: $Y = f(X_i) \ldots (2)$

Y = level of commercialization (%); Xi is the independent variable (socioeconomic characteristics of the farm and village seed entrepreneurs) used in the analysis.

For Objective 4, analysis was done using Tobit regression model. The model is fitted as:

$YP = f(Z_i) \ldots\ldots (3)$

YP = Degree of participation in cassava commercialization (1,2,3);

Z_i is the independent variables

RESULTS

Socioeconomic profile of Seed Entrepreneurs

	Categories	Frequency	%
Sex	Male	41	68.33
	Female	19	31.67
Age	30-50	40	66.77
	51-above	20	33.33
Level of Education	High school or less	14	23.33
	Tertiary	46	76.77
Farming experience	≤ 1 0 years	26	43.33
	≥ 11 years	34	56.67

Source: Field Survey Data, 2019

Level of Cassava Commercialization

Variable	Mean	Standard deviation
Quantity of Cassava seed sold (Bundle)	9123.3	12404.1
Quantity of Cassava seed produced (Bundle)	13738.6	15250.9
Commercialization Index	0.419	0.315

Source: Field Survey Data, 2019

DETERMINANTS OF CASSAVA SEED COMMERCIALIZATION

Variable	Linear	Exponential	Double-log (+)	Semi-log
Constant	-28531.62 (-1.70)*	3.7175 (1.84)*	3.5232 (1.00)	-65357.59 (-1.98)*
Sex	-1684.666 (-0.49)	-0.1884 (-0.46)	-0.4053 (-1.04)	- 4310.38 (-1.18)
Age	795.6419 (3.16)**	-0.0778 (-2.57)*	-3.3894 (-2.98)**	-7183.608 (-0.68)
Marital Status	13051.59 (1.60)	1.6199 (1.65)	1.2641 (1.41)	8249.065 (0.99)
Educational Level	2614.366 (1.32)	0.1661 (0.70)	0.5519 (0.97)	-2559.525 (-0.48)
Household Size	380.0018 (1.58)	0.4061 (1.40)	0.3348 (0.77)	5418.142 (1.33)
Cooperative Membership	-2749.864 (-0.56)	-0.3782 (-0.64)	1.0388 (2.23)*	9163.066 (2.11)*
Farming Experience	-159.8004 (-0.82)	-0.0355 (-1.51)	0.1962 (0.64)	3354.118 (1.17)
Farm Size	0.4622 (0.03)	0.0009 (0.49)	0.8452 (5.49)***	5254.528 (3.67)**
Training on Agronomic best Practices	12273.21 (2.09)*	1.6113 (2.28)*	0.9499 (2.84)**	7281.043 (1.24)
Training on Business Management	15948.07 (3.87)***	2.0252 (4.09)***	1.2035 (2.69)*	13267.45 (3.18)**
Yield	0.0505 (0.50)	0.0002 (2.05)*	0.8491 (6.07)***	3838.318 (2.94)**
R^2	0.4640	0.5286	0.7084	0.5839
R	0.3142	0.4205	0.6416	0.4886
F	3.78***	4.89***	10.60***	6.12**

RESULTS (CONTINUED)

DETERMINANTS OF PARTICIPATION IN CASSAVA SEED COMMERCIALIZATION (Tobit Regression Result)

Variable	Coefficient	Std. Deviation	t-ratio
Constant	-0.1396	0.4418	-0.32
Sex	0.0341	0.0975	0.35
Age	-0.0052	0.0016	-3.26**
Marital Status	0.7223	0.2186	3.30**
Educational Level	0.0257	0.0635	0.40
Household Size	0.0099	0.0033	3.02**
Membership of Cooperative	-0.1854	0.1320	-1.04
Years of Farming Experience	-0.0011	0.0051	-0.21
Farm Size	0.0059	0.0014	4.30***
NASC Certification	0.4071	0.1780	2.29*
Farm Record Keeping	0.4718	0.1259	0.37
Preferred Local Variety	0.0501	0.1053	0.48
Training on Business Management	0.4132	0.1289	3.20**
Yield	$5.07X10^{-6}$	$2.74X10^{-6}$	1.85*

Chi^2 = 31.51; Prob Chi = 0.0028; Log likelihood = -5.9945; ** and *** is a significant at 10%, 5% and 1% level of probability respectively.

Source: Field Survey Data, 2019

CONCLUSION

Research extension and communication is essential to raise awareness and scale up the commercialization of cassava seed system in South-East and South-South Nigeria. The yield is a deal-breaker trait in cassava production as farmers always looks for varieties with better yields. This should inform breeders objectives in cassava seed improvement.

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