

Status of Climate-Smart Agriculture in Southeast Nigeria

By

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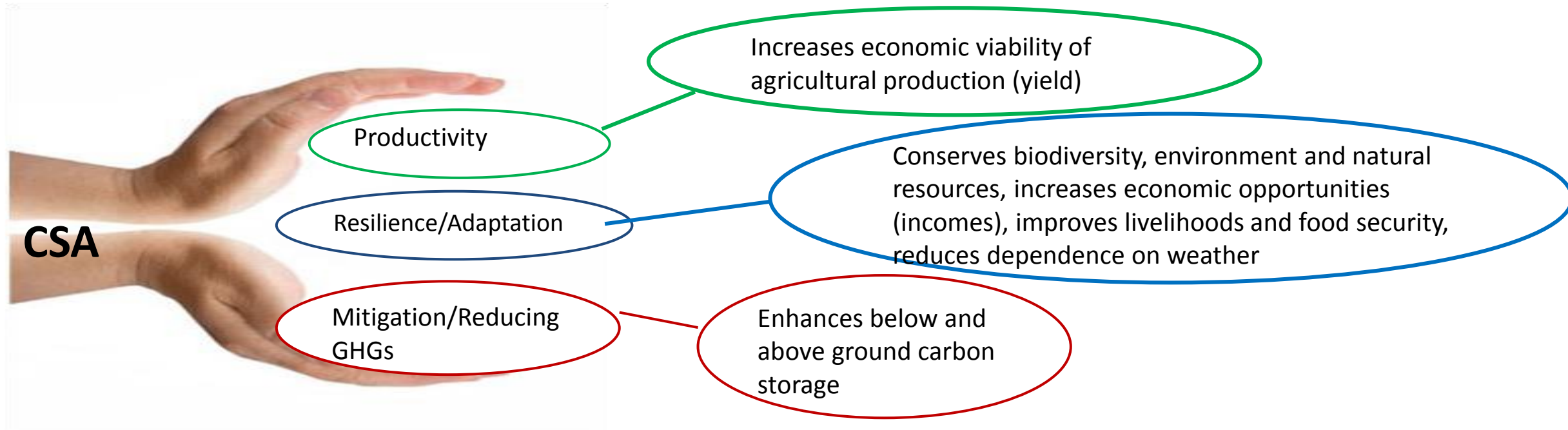
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INTRODUCTION

- The need to increase productivity and ensure food security for the growing population has been challenged by degradation of natural resources and recently hit by climate change impact.
- CSA practices increase agricultural productivity, improve resilience to climate change, and contribute to long-term reductions in dangerous carbon emissions



Research Problem

- No published research covering the knowledge and practice of climate-smart agriculture by farmers in southeast Nigeria based on detailed and consistent field data.
- Inadequate research in the area of climate-smart agriculture is listed as a constraint in the newly adopted Nigeria's Agriculture Promotion Policy of 2016 to 2020.

Objectives

- Identify existing practices in southeast Nigeria relevant to CSA;
- Describe the synergies between productivity, resilience, and greenhouse gas mitigation of the CSA practices;
- Determinants of the CSA practices.

METHODOLOGY

Study Area

- This study was conducted in southeast Nigeria.

Sampling Technique

- Cluster and multistage random sampling techniques were adopted for this study (5 States, 10 LGAs, 20 communities, 160 farmers).

Method of Data Collection

- **Primary data. Questionnaire and FGD.** Focus groups were used to develop lists of specific technologies relevant to CSA before data collection from the farmers using questionnaire.

Method of Data Analysis

- Data collected analysed using descriptive statistics and logit regression.

FINDINGS

Climate-smart Agriculture Practice	Frequency	Percentage
Adjusting production systems		
High yielding crop varieties like cassava	118	73.75
Improved livestock breeds and species	20	12.50
Adjusting planting dates	91	56.88
Crop rotation	94	58.75
Mixed cropping	120	75.00
Strip cropping	60	37.50
Shifting cultivation	75	46.88
Fallowing	72	45.00
Cover cropping	102	63.75
Application of manure	88	55.00
Mulching	115	71.88
Reduced or zero tillage	111	69.38
Agroforestry	118	73.75
Irrigation	16	10.00
Water harvesting	24	15.00
Terraces	48	30.00
Mounds	42	26.25
Diversion of ditches and drainages	24	15.00
Contour bunds	36	22.50
Mobility and Social Networks		
Membership to development associations	72	45.00
Membership to cooperative societies	60	37.50
Migration	44	27.50
Farm financial management		
Reduce investment in the farm by reducing area cultivated	77	48.13
Insurance	12	7.50
Diversification on and beyond the Farm		
Mixed farming	126	78.75
Shifting from crop to livestock production	78	48.75
Diversifying from farm to non-farm activities	80	50.00
Knowledge Management and Regulations		
Forest protection measures	36	22.50
Regulations on flood catchment	12	7.50
Use of local pesticides	40	25.00

Variable	Improved agricultural systems	Mobility and social networks	Farm financial management	Diversification on and beyond the farm	Knowledge management and regulations
Education	0.003 (1.77)*	0.007 (2.53)**	0.017 (2.55)**	0.015 (2.31)**	0.005 (3.70)***
Income	0.003 (3.45)***	0.002 (2.25)**	0.0029 (2.48)**	0.007 (1.78)*	0.0043 (3.59)***
Credit	0.007 (2.57)**	0.006 (2.13)**	0.0042 (3.08)***	0.0022 (3.51)***	0.0015 (2.17)**
Extension contact	0.003 (2.36)**	0.008 (3.32)***	0.0017 (3.95)***	0.0014 (3.71)***	0.008 (2.77)***
Household size	0.044 (1.84)*	0.019 (1.69)*	0.058 (2.15)**	0.061 (2.47)**	-0.024 (-1.28)
Farming experience	0.002 (1.93)*	0.014 (3.42)***	0.018 (3.23)***	0.022 (3.84)***	0.007 (2.44)**
Farm size	0.197 (2.10)**	2.45e-07 (0.35)	9.42e-07 (0.93)	6.61e-07 (0.83)	1.24e-06 (1.13)
Exposure to mass media	0.00737 (2.04)**	0.003 (2.37)**	0.005 (2.19)**	-0.003 (-1.22)	0.003 (2.38)**
Distance to market	-0.021 (-4.74)***	-0.013 (-2.51)**	-0.005 (-1.70)*	0.004 (1.27)	-0.003 (-2.02)**
Livestock ownership	0.003 (2.32)**	0.002 (1.40)	0.003 (1.76)*	0.002 (2.37)**	-0.003 (-1.49)
Leadership position	0.113 (1.83)*	0.042 (0.54)	0.088 (0.88)	0.100 (2.09)**	0.183 (1.73)*
Gender	-0.093 (-1.68)*	-0.111 (-1.42)	-0.088 (-0.85)	-0.153 (-1.56)	-0.119 (-1.13)
Land ownership	0.02 (3.37)***	0.003 (1.49)	-0.0001 (-0.13)	-0.001 (-1.28)	0.003 (1.27)
Risk orientation	0.010 (3.09)***	0.183 (1.73)*	0.226 (3.24)***	0.241 (2.28)**	0.018 (2.52)**
Distance to water sources	-0.153 (-2.56)**	-0.119 (-1.13)	-0.029 (-0.50)	-0.169 (-2.51)**	-0.053 (-1.02)
Likelihood Chi square	94.60***	59.65***	77.92***	84.23***	67.82***
Number of observations	160	160	160	160	160

Conclusion

- Paper emphasizes the practices that are on ground and familiar with farmers that could enhance and reposition climate-smart agriculture in southeast Nigeria, which could be applied in other parts of Nigeria.
- This study provides the evidence on which basis the federal government, State governments and support-institutions can design appropriate CSA policies, programs and performance monitoring.
- It forms the foundation upon which interventions can be based.

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