Natural Resources for Human Health

eISSN: 2583-1194

Original Research

Received 20 May 2026
Revised 26 June 2026
Accepted 14 July 2026

Natural Resources for Human Health 2026, Vol. 6 (7s): 458–468

KEYWORDS:
Agricultural financing, food production, WAEMU, IV-GMM.

Effects of Agricultural Financing on Food Production in West African Economic and Monetary Union Countries

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ABSTRACT: In a context where food crises are becoming increasingly recurrent, food sovereignty is now a necessary condition for the greater good of any nation. This research focuses on the issue of financing food production in WAEMU countries, which are particularly vulnerable to food crises. The objective is to analyze the effects of agricultural financing on food production in WAEMU countries over the period from 2000 to 2023. To complete the research, the IV-GMM method was used for the econometric estimation of the baseline model. The results show that agricultural financing positively and significantly influences the food production index and cereal production. Based on these results, economic policy recommendations emerge. These include implementing a food crop financing program, training agricultural entrepreneurs, and funding research and development. Therefore, it is important to establish an institutional framework with operational capacity for monitoring and controlling the financing program for this subsistence agriculture.

1. INTRODUCTION

Sub-Saharan Africa is the poorest region in the world and is highly vulnerable to crises and famines (Muzari et al., 2016). Yet, more than 60% of the population in this region depends on agriculture for their livelihoods and income (World Bank, 2021). Indeed, Sub-Saharan Africa is regularly affected by food crises, including the 2008 food crisis, shortages and inflationary pressures caused by armed conflicts, the war in Ukraine, and the COVID-19 pandemic. In response to these crises, most West African countries have sought to reduce their dependence on regional and international trade by placing greater emphasis on food self-sufficiency (Staatz et al., 2017). Consequently, the agricultural sector has regained attention after having been marginalized since the mid-1980s (Ribier & Gabas, 2016). This renewed interest has been reflected in agricultural policies aimed at increasing agricultural financing. Such financing takes the form of agricultural credit provision, subsidies for agricultural inputs, the development of agricultural infrastructure, and other forms of support. The main formal financial stakeholders include the government, financial institutions (banks and microfinance institutions), non-governmental organizations, and development partners (FAO, AfDB, World Bank). However, government investment in the agricultural sector remains very low, averaging approximately 5% of public expenditure in West African countries (Gravellini, 2024). Furthermore, private investors and firms tend to target specific value chains, while foreign private investors predominantly focus on export-oriented agriculture (Ribier & Gabas, 2016). The divergence in the intervention strategies of these various stakeholders makes it difficult to establish effective synergies between public and private actors capable of generating a substantial impact on agricultural sector development. Moreover, food-crop agriculture remains the least favored segment in terms of formal agricultural financing. It remains largely traditional and highly dependent on climatic conditions, thereby contributing to credit rationing by formal financial institutions. Consequently, it is important to determine the types and levels of financing required to stimulate food-crop production and ensure food security in developing countries in general, and particularly in the countries of the West African Economic and Monetary Union (WAEMU).

The theoretical and empirical literature generally establishes a positive relationship between agricultural financing and agricultural production (FAO, 2015; Feder et al., 1990; Akinkunmi, 2017). Indeed, investments in modern mechanized equipment and the adoption of advanced technologies can reduce production costs (Johnston & Mellor, 1961). However, it is important to note that various analytical and forward-looking studies consistently indicate that the food security situation in Sub-Saharan Africa in general, and in WAEMU countries in particular, has deteriorated (Benoit-Cattin & Dorin, 2011). Diallo and Kouakou (2021) argue that the food crisis in WAEMU countries is driven by both endogenous and exogenous factors, notably the declining investment in food-crop agriculture. Chronic underfinancing therefore undermines the sector's ability to meet growing food needs and support the structural transformation of economies (SAIDOU et al., 2025). In this context, the government appears to be the only actor capable of addressing the financing challenge facing food-crop production. This raises the following question: what are the effects of public agricultural financing on food production in WAEMU countries?

This study aims to demonstrate that, in an environment characterized by agricultural production risks, the government remains the principal investor in safeguarding national food sovereignty. At the end of the study, empirical results will be presented to assess the importance of public financing for food production. Furthermore, financing policies targeting food-crop production will be proposed with a view to substantially improving the performance of this sector.

2. LITERATURE REVIEW

2.1. Theoretical Framework

Agriculture has always been at the center of economic thought, from the classical economists to contemporary scholars. In general, economists broadly agree that agricultural financing is a key driver of agricultural development. From a Keynesian perspective, financing constitutes an investment that enables economic agents, including farmers, to increase their productive capital stock, thereby stimulating agricultural production. Accordingly, Keynesian economists emphasize public investment as a means of stimulating economic recovery across all sectors, including agriculture.

Similarly, agricultural development theorists consider agriculture to be a driving force of countries' economic and social development. From this perspective, agricultural financing constitutes a foundation for the Green Revolution, which is a prerequisite for structural transformation of the economy. Johnston and Mellor (1961) argue that agricultural financing facilitates structural transformation by increasing agricultural production and improving rural incomes.

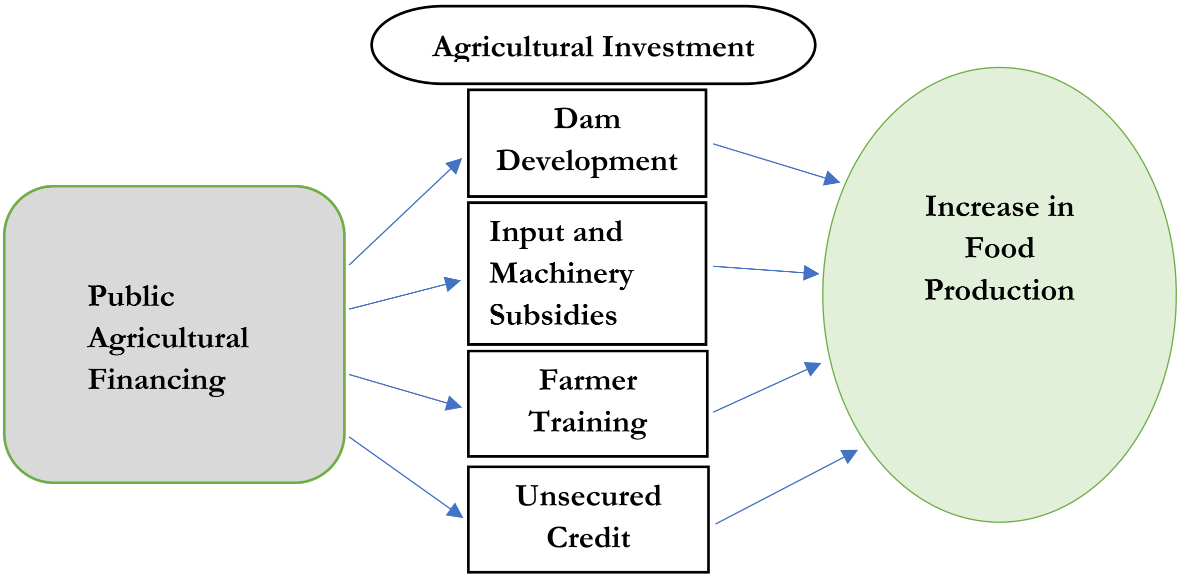
According to the theory of financial intermediation, financial development promotes economic growth through financial intermediaries that mobilize savings and channel them toward productive, labor-intensive sectors such as agriculture (Gurley & Shaw, 1955; McKinnon, 1973; Shaw, 1973). However, in developing countries, where farmers face credit rationing (Stiglitz & Weiss, 1981), public financing provides a means of alleviating the institutional constraints faced by farmers.

Indeed, in developing countries, food-crop agriculture is primarily a subsistence activity that is particularly exposed to climatic risks. These risks impose institutional constraints on farmers, particularly in the form of credit rationing in financial markets. Under such conditions, the government is the primary institution capable of supporting farmers and improving the performance of the agricultural sector. Such intervention may take the form of providing unsecured credit.

Public goods theory argues that government intervention is often necessary to provide goods and services that markets fail to supply adequately (Samuelson, 1954). In the agricultural sector, this includes the development of agricultural infrastructure, such as dams and storage facilities, as well as direct support to producers through input subsidies, machinery subsidies, and training.

Based on these theoretical foundations, this article proposes the following analytical framework for examining the relationship between agricultural financing and food production:

Figure 1. Theoretical links between public agricultural financing and food production



Source: Autor's

2.2. Empirical Literature Review

The study by Saidou et al. (2025) analyzed the effects of public agricultural expenditure on food production in Sub-Saharan Africa over the period 2000–2023. Using the Generalized Method of Moments (GMM), the results show that public agricultural expenditure has a positive and statistically significant effect on food production. Specifically, their findings indicate that a 1% increase in public agricultural expenditure increases food production by 0.0235%. Furthermore, an increase in research effort is associated with a marginal increase in agricultural production. Accordingly, the study recommends reallocating agricultural budgets toward targeted investments in resilient infrastructure, research, and appropriate technologies, while incorporating strategies for managing environmental vulnerability, such as sustainable irrigation, soil conservation, and the adoption of climate-resilient crop varieties.

Osabohien et al. (2020) examine the impact of agricultural financing on food production in Nigeria using a canonical cointegration approach and annual data covering the period from 1982 to 2018. Their findings reveal that agricultural financing is an important factor in explaining the level of food production in Nigeria. Their estimates indicate that a 19% increase in access to credit would result in an increase of approximately 0.002%, 0.006%, and 0.003% in food production in the long run, depending on the equation considered. Furthermore, the study shows that agricultural financing indirectly stimulates food production through the acquisition of agricultural machinery and the expansion of cultivated areas. Specifically, a 1% increase in agricultural machinery leads to increases in food production of 2.39%, 2.11%, and 2.36%, respectively. Similarly, a 1% increase in arable land would increase food production by 0.87%, 0.96%, and 0.842%, respectively. Consequently, the authors recommend allocating additional resources to farmer training and providing credit under less restrictive conditions.

Akpan et al. (2024) investigate the impact of the credit policy environment on agricultural production in Nigeria using a flexible Autoregressive Distributed Lag (ARDL) model. The results reveal that loans provided by commercial banks and the Agricultural Credit Guarantee Scheme Fund (ACGSF) have a positive impact on agricultural sector growth in the long run. Conversely, economic growth negatively affects domestic credit to the private sector and long-term lending interest rates. These findings therefore highlight the importance of promoting commercial bank lending to the agricultural sector and increasing the volume of credit provided through the Agricultural Credit Guarantee Scheme Fund. Furthermore, the authors suggest introducing additional financial incentives to attract domestic private investment and reducing standard lending interest rates in the country.

In China, Ding et al. (2024) investigate the relationship between agricultural land transfers, agricultural loans, and grain production. They employ a fixed-effects model and an instrumental variables approach to assess the interaction effects among agricultural land transfers, agricultural loans, and grain production. Their findings reveal a positive relationship between agricultural land transfers and grain production, but a negative relationship between agricultural loans and grain production. However, the positive interaction between agricultural land transfers and agricultural loans can contribute to improving grain production. Therefore, the authors emphasize the importance of government support for rural land system reform, active regulation of agricultural land transfers, and the allocation of agricultural financing toward investment in medium- and long-term agricultural production projects.

Thiam and Toure (2020) examine the empirical relationship between agricultural financing and food security in Senegal. Using a multiple regression model based on the approach developed by Kpodar (2006), they find that agricultural bank financing, demographic factors, agricultural value added, and non-agricultural value added significantly contribute to reducing the prevalence of undernourishment. However, they find that food availability in kilocalories, gross national income per capita, and the outstanding credit of microfinance institutions have a positive effect on the prevalence of undernourishment. According to their findings, a 10% increase in bank financing allocated to agriculture leads to a 4.3% reduction in the prevalence of undernourishment. Similarly, a 10% increase in agricultural value added and non-agricultural value added reduces the level of undernourishment by 14.6% and 40.8%, respectively. Based on these findings, the authors formulate four economic policy implications: strengthening and diversifying agricultural financing, promoting the development of food markets, supporting structural transformation through light industrialization, and establishing an institutional framework capable of promoting agricultural production in Senegal.

3. RESEARCH METHODOLOGY

3.1. Data and Description of Variables

The data used in this study are obtained from two secondary sources: the World Development Indicators (WDI) database of the World Bank and the FAOSTAT database of the Food and Agriculture Organization of the United Nations (FAO). The dataset covers the eight (8) member countries of the West African Economic and Monetary Union (WAEMU), namely Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo. The time dimension is determined by data availability and covers the period from 2000 to 2023. In total, we have a panel of 192 observations.

Two variables are used to capture food production: the food production index and the annual quantity of cereals produced. The former is a composite indicator developed by the FAO, whereas the latter is a quantitative variable measuring a country's cereal production capacity.

The variable of primary interest, agricultural financing, is measured by the amount of credit extended to agricultural activities, including agriculture, forestry, and fishing. The control variables were selected based on the existing empirical literature.

Table 1 below presents the list of variables considered in the analysis, together with their descriptions and data sources.

Table 1. List of Variables

Variables	Description	Source
Dependent		
Food Production Index (FPI)	The index covers food crops that are considered edible and contain essential nutrients.	FAO
Cereal Production (CP)	Quantity of cereals harvested as dry grain only (in tonnes).	WDI
Explanatory		
Agricultural Financing (AF)	Credit extended to agriculture, fishing, and forestry (in million USD)	FAO
Control		

Cereal Yields (CY)	Quantity of cereals harvested per hectare of land (kilograms per hectare)	WDI
Employment in Agriculture (EA)	Proportion of people employed in agriculture, forestry, and fishing (in %)	FAO
GDP Growth (GDP)	Annual GDP per Capita Growth Rate (in %)	WDI
Agricultural Land (AL)	The share of the total land area consisting of arable land, land under permanent crops, and permanent pastures (in square kilometers).	FAO

Source: Autor's

Table 2 summarizes the information on the variables considered in the study. The results show that, over the period from 2000 to 2023, the WAEMU region recorded an average annual food production index of 90.820. In terms of cereal production, the countries produced an average of 2.76 million tonnes per year, with an average yield of 1.25 tonnes per hectare. The average amount of credit extended to the agricultural sector stood at USD 71.59 million. Gross Domestic Product (GDP) recorded relatively low growth, with an average rate of 1.42%. Agricultural land accounted for 45.38% of the total land area, while the share of employment in agriculture stood at 54.83%.

Table 2. Descriptive Statistics

Variables	Obs	Mean	Std.Dev.	Min	Max
FPI	192	90.820	28.450	37.450	183.500
CP	192	2.761e+06	2.281e+06	143411	1.050e+07
AF	179	71.590	97.710	0.020	591.900
CY	192	1253	458.60	289.20	2398
EA	192	54.830	13.540	22.990	76.100
GDP	192	1.423	2.796	-7.404	12.376
AL	192	45.380	15.910	23.580	86.480

Source: Authors' calculations

The test developed by Im et al. (2003) shows that only the GDP growth rate is stationary in levels, while all the other variables become stationary after first differencing. The results of the stationarity tests are presented below (Table 3).

Table 3. Unit Root Tests

Variables	IPS		Décision
	P-value at Level	P-value at First Difference	
FPI	1.000	0.000	I(1)
CP	0.961	0.000	I(1)
AF	0.930	0.000	I(1)
EA	0.693	0.000	I(1)
CY	0.076	0.000	I(1)
GDP	0.000		I(0)
AL	0.970	0.000	I(1)

Source: Authors' calculations

3.2. Model Specification

Food production is a critical global concern that requires thorough investigation (Ding et al., 2024). Against this background, the present study examines the relationship between agricultural financing and food production in WAEMU countries. To achieve this objective, the study draws on the empirical approach of Ding et al. (2024), who investigated the relationship between agricultural land transfers, agricultural loans, and cereal production. Accordingly, we specify a Cobb–Douglas production function, as given by Equation (1):

$$Y_{i,t} = A_{i,t}K_{i,t}^{\alpha_1}L_{i,t}^{\alpha_2}X_{i,t}^{\alpha_3} \quad (1)$$

Where i and t denote the country and time, respectively. Y represents food production. A, K, L, and X denote the technical progress index, financial capital, labor, and intermediate inputs, respectively.

By linearizing Equation (1), we obtain the following specification:

$$lnY_{i,t} = lnA_{i,t} + \alpha_1 lnK_{i,t} + \alpha_2 lnL_{i,t} + \alpha_3 lnX_{i,t} \quad (2)$$

By setting $lnY_{i,t} = y_{i,t}$; $lnA_{i,t} = \alpha_0$; $lnK_{i,t} = k_{i,t}$; $\alpha_2 lnL_{i,t} = l_{i,t}$ *and* $lnX_{i,t} = x_{i,t}$, *we obtain:*

$$y_{i,t} = \alpha_0 + \alpha_1 k_{i,t} + \alpha_2 l_{i,t} + \alpha_3 x_{i,t} \quad (3)$$

Based on this equation, we posit the following empirical equations:

$$FPI_{i,t} = \alpha_0 + \alpha_1 AF_{i,t} + \alpha_2 X_{i,t} + \omega_i + \lambda_t + \varepsilon_{i,t} \quad (4)$$

$$CP_{i,t} = \alpha_0 + \alpha_1 AF_{i,t} + \alpha_2 X_{i,t} + \omega_i + \lambda_t + \varepsilon_{i,t} \quad (5)$$

Where:

- i and t denote the country and the time period, respectively.
- FPI and CP represent the Food Production Index, Cereal Production, respectively.
- AF is Agricultural financing
- X is matrix of control variables
- ε The error term

Drawing on Ebi and Amaraihu (2018) and Saidou et al. (2025), we specify the following dynamic panel empirical equations to be estimated:

$$FPI_{i,t} = \alpha_0 + \alpha_1 FPI_{i,t-1} + \alpha_2 X_{i,t} + \omega_i + \varepsilon_{i,t} \quad (6)$$

$$CP_{i,t} = \alpha_0 + \alpha_1 CP_{i,t-1} + \alpha_2 AF_{i,t} + \alpha_3 X_{i,t} + \omega_i + \varepsilon_{i,t} \quad (7)$$

These empirical equations will to be estimated using an appropriate estimation method.

3.3. Estimation Technique

The estimation method is selected rigorously based on the structure of the data and the objectives of the study. The structure of the data is determined by the results of the preliminary tests. These tests indicate that all variables are integrated of order zero or one, I(0) or I(1). Furthermore, the dependent variables are all non-stationary in levels. In addition, the Wooldridge and Breusch–Pagan tests reveal the presence of serial correlation and heteroskedasticity, respectively, in the panel data. In practice, food production levels are related to their past values, which may give rise to bidirectional causality. Based on the preliminary tests and the existing literature, we suspect the presence of endogeneity. Therefore, a dynamic specification is recommended. The Generalized Method of Moments (GMM), based on instrumental variables, is an effective estimation method for addressing endogeneity in the presence of a lagged dependent variable. It is particularly robust to serial correlation and heteroskedasticity. Moreover, GMM can accommodate a broader range of error-structure problems (West et al., 2007). Accordingly, we employ the Instrumental Variables–Generalized Method of Moments (IV-GMM) approach to estimate Equations (6) and (7), using lags of each explanatory variable and of the two dependent variables as instruments. Based to Nabié and Diarra (2026), the instruments used to instrument the food production index and the cereal production are their one-year lagged values, and the first difference of control variables such as Agricultural credit, Cereal Yields, Employment in Agriculture, GDP Growth and Agricultural Land.

For comparison purposes, the two equations are re-estimated using alternative estimation techniques. Specifically, Panel-Corrected Standard Errors (PCSE), the Driscoll–Kraay estimator, and Generalized Least Squares (GLS) are employed to assess the robustness of the baseline model results. These estimation methods assume a non-dynamic specification of the equations (4) and (5). Nevertheless, they provide improved estimates of the coefficients (Nabié & Diarra, 2026). Overall, these estimation techniques are selected because of their robustness and their ability to account for heteroskedasticity, serial correlation, and cross-sectional dependence. Furthermore, they are particularly suitable for panels with a small cross-sectional dimension (N=8) and a moderate time dimension (T=24).

4. RESULTS AND DISCUSSION

4.1. Baseline Results and Discussion

Table 4 below presents the estimation results for Equations (3) and (4). The significant AR(1) autocorrelation tests and the non-significant AR(2) tests for both models confirm the appropriate specification of the Instrumental Variables (IV-GMM) estimator used. The respective p-values of the Sargan and Hansen tests, namely 0.174 and 0.219 for Equation (3), and 0.330 and 0.317 for Equation (4), are all above the 10% significance level, thereby validating the instruments. Furthermore, the overall significance tests indicate that both models are statistically significant (p-values of 0.000 and 0.000). These diagnostic tests therefore support the validity of the estimation results.

The estimation results highlight the dynamic effect of agricultural financing on food production in WAEMU countries. The coefficients of the food production index (0.816) and cereal production (0.647) are both positive and statistically significant at the 1% level. This strong persistence highlights the existence of dynamic effects in agricultural production. Indeed, past performance directly influences current outcomes through the accumulation of production experience, capital, and inputs (SAIDOU et al., 2025). Moreover, in African countries where agricultural systems remain characterized by low levels of intensification, this persistence tends to be more pronounced (Benin & Yu, 2020).

The results indicate that a USD 1 million increase in agricultural financing leads to an increase of 0.0173 points in the food production index and an increase of 1,692 tonnes in cereal production. These findings are consistent with those of Akpan et al. (2024), who found that the Agricultural Credit Guarantee Scheme Fund of the Federal Republic of Nigeria had a positive impact on agricultural sector growth. Similarly, studies conducted across groups of African countries, such as Saidou et al. (2025) and Benin and Mogues (2012), have demonstrated the positive effect of public agricultural expenditure on food-crop production.

These findings also corroborate the Keynesian theory of investment as applied to the agricultural sector. According to Keynesian theory, governments should finance major recovery projects in sectors facing structural or cyclical constraints. Given that agriculture in WAEMU countries remains largely subsistence-oriented and highly dependent on climatic conditions, financing food-crop agriculture appears essential to ensuring national food security.

Cereal yields also exert a positive and statistically significant effect on food production in these countries. Specifically, a one-kilogram increase in productivity per hectare leads to an increase of 0.0457 points in the food production index and an increase of 3,412 tonnes in national cereal production, ceteris paribus. These findings underscore the critical role of agricultural productivity in achieving a Green Revolution. However, higher yields are partly dependent on agricultural financing, as such financing facilitates the acquisition of physical capital and production technologies.

The annual GDP per capita growth rate has a positive and statistically significant effect on food production at the 10% significance level in both equations. A 1% increase in GDP per capita growth increases the food production index by 1.04 points and adds 110,552 tonnes to cereal production. These results highlight the role of national income as a source of investment in the agricultural sector in general and in food-crop production in particular.

The share of agricultural land has a negative effect on food-crop production in WAEMU countries. This finding contrasts with Osabohien et al. (2020), who found that the elasticity of production with respect to the land factor was positive and statistically significant. This difference may be explained by the fact that the present study focuses specifically on food-crop production. Indeed, farmers frequently allocate a larger share of agricultural land to cash crops at the expense of food crops. Therefore,

Natural Resources for Human Health
eISSN: 2583-1194

governments should designate agricultural areas according to national priorities, particularly food-crop production, in order to ensure adequate domestic food supplies.

The share of employment in agriculture has a positive but statistically insignificant effect in both models. This finding is consistent with Osabohien et al. (2020), who showed that labor is not sufficiently productive in the African agricultural sector. In developing countries, the available agricultural labor force is often insufficiently skilled to ensure high productivity. This supports the argument made by Osabohien et al. (2020) that African agricultural production systems are characterized by a growing labor force whose contribution to productivity remains limited.

Table 4. Results of Instrumental Variables estimation (IV-GMM).

VARIABLES	FPI	CP
FPI (t-1)	0.816*** (0.204)	
CP(t-1)		0.647*** (0.171)
AF	0.017** (0.007)	1692** (665.600)
CY	0.045** (0.017)	3412*** (839.100)
GDP	1.040* (0.508)	110552* (47723)
AL	-0.566 (1.225)	-102406** (32289)
EA	0.393 (1.812)	40278 (45995)
Constant	-37.860 (146.100)	-849241 (4.173e+06)
Observations	154	154
Nomber of Countries	8	8
Arellano-Bond : p-value AR(1)/ AR(2)	0.028/ 0.340	0.050/ 0.242
P-value Sargan test /Hansen test	0.174/ 0.330	0.219/ 0.317
Prob > F	0.000	0.000

Standard errors in parentheses; *** p<0.01; ** p<0.05; * p<0.1

Source: Autor's estimates

4.2. Robustness Test

The PCSE estimates (Table 5), Driscoll–Kraay estimates (Table 6), and GLS estimates (Table 7) are all statistically significant overall (p-value = 0.000). The results are broadly consistent with those obtained from the baseline model. Agricultural financing remains positive and statistically significant across all models and equations, except under the GLS estimation, where it does not have a statistically significant effect on the food production index. Based on these results, the baseline model can be considered robust.

Table 5. PCSE Estimation

VARIABLES	FPI	CP
d.AF	0.009* (0.005)	1133*** (403.400)
d.CY	0.029*** (0.004)	2130*** (285.900)
GDP	0.129 (0.135)	28978*** (11061)
d.AL	1.476*** (0.437)	43741* (25619)
d.EA	-0.162 (0.266)	-2140 (19154)
Constant	2.218*** (0.545)	38663 (43329)
Observations	154	154

Nomber of countries	8	8
Prob > chi2	0.000	0.000
R-squared	0.340	0.409

Standard errors in parentheses; *** p<0.01; ** p<0.05; * p<0.1

Source: Autor's estimates

Table 6: Driscoll–Kraay Estimation

VARIABLES	FPI	CP
d.AF	0.009** (0.004)	1096*** (217.200)
d.CY	0.029*** (0.007)	2220*** (583.700)
GDP	0.226 (0.133)	36352*** (10860)
d.AL	1.896*** (0.497)	62331** (24371)
d.EA	0.024 (0.420)	2444 (8803)
Constant	2.039*** (0.598)	30924 (40498)
Observations	154	154
Nomber of countries	8	8
Prob > F	0.000	0.000
R-squared	0.370	0.459

Standard errors in parentheses; *** p<0.01; ** p<0.05; * p<0.1

Source : Autor's estimates

Table 7 : EGLS Estimation

VARIABLES	FPI	CP
d.AF	0.009 (0.007)	1110*** (427.100)
d.CY	0.030*** (0.004)	2250*** (254.900)
GDP	0.204 (0.144)	34901*** (9395)
d.AL	1.502*** (0.520)	45330 (33982)
d.EA	-0.034 (0.288)	5165 (18826)
Constant	2.190*** (0.571)	39392 (37269)
Observations	154	154
Nomber of countries	8	8
Prob > chi2	0.000	0.000

Standard errors in parentheses; *** p<0.01; ** p<0.05; * p<0.1

Source: Autor's estimates

5. CONCLUSION AND POLICY IMPLICATIONS

In a context where recurrent economic shocks continue to undermine global food security, agriculture remains a strategic sector for every country. This paper primarily examines the financing of domestic food production. The findings indicate that financing the agricultural sector is an essential lever for increasing food-crop production. The IV-GMM model estimates reveal that a USD 1 million increase in agricultural financing leads to a 0.0173-point increase in the food production index. Furthermore, this increase in agricultural financing results in an increase of 1,692 tonnes in cereal production. The use of alternative estimation methods, including PCSE, Driscoll–Kraay, and GLS, further supports the robustness of these findings.

In light of these results, agricultural financing emerges as a key economic policy instrument for achieving food self-sufficiency. Public agricultural financing represents an investment aimed at modernizing the agricultural sector, particularly in WAEMU countries, where agriculture remains relatively under-modernized. Such investment should target physical capital accumulation, the provision of credit to producers, and agricultural input subsidies.

Given the persistent disruptions affecting international markets, WAEMU countries, as well as other food-import-dependent countries, need to adopt national policies for financing food-crop agriculture by mobilizing the financial resources required to ensure sufficient domestic food production to meet national demand. This should primarily involve establishing dedicated financing programs for food-crop production, training agricultural entrepreneurs, and financing research and development (R&D). It is also important to establish an institutional framework with sufficient operational capacity to monitor and supervise the implementation of food-crop production financing programs in both developing and developed countries.

AUTHOR CONTRIBUTIONS

SANON M. : Investigation, Methodology, Data Curation, Formal Analysis, Econometric Analysis

OUEDRAOGO N. S. B.: Conceptualization, Supervision, Writing Review.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ETHICS STATEMENT

Ethical approval was not required for this study.

DATA AVAILABILITY STATEMENT

Data supporting the findings of this study are available from the corresponding author upon reasonable request.

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