

# 10TH AFRICAN REGIONAL FORUM ON SUSTAINABLE DEVELOPMENT (ARFSD-10)

## SIDE EVENT: FOOD SYSTEMS TRANSFORMATION PROGRESS REVIEW

### *MARCOECONOMIC CONDITIONS AND FOOD SECURITY IN WEST AND CENTRAL AFRICA*

#### *KEY FINDINGS*

**Virtual, 22 April 2024**

# OUTLINE



**Conceptual  
framework:  
Macro-food  
system**

**Stylized  
findings:  
supply and  
demand side**

**Maputo's and  
Malabo's  
declarations  
(2003/2014)**

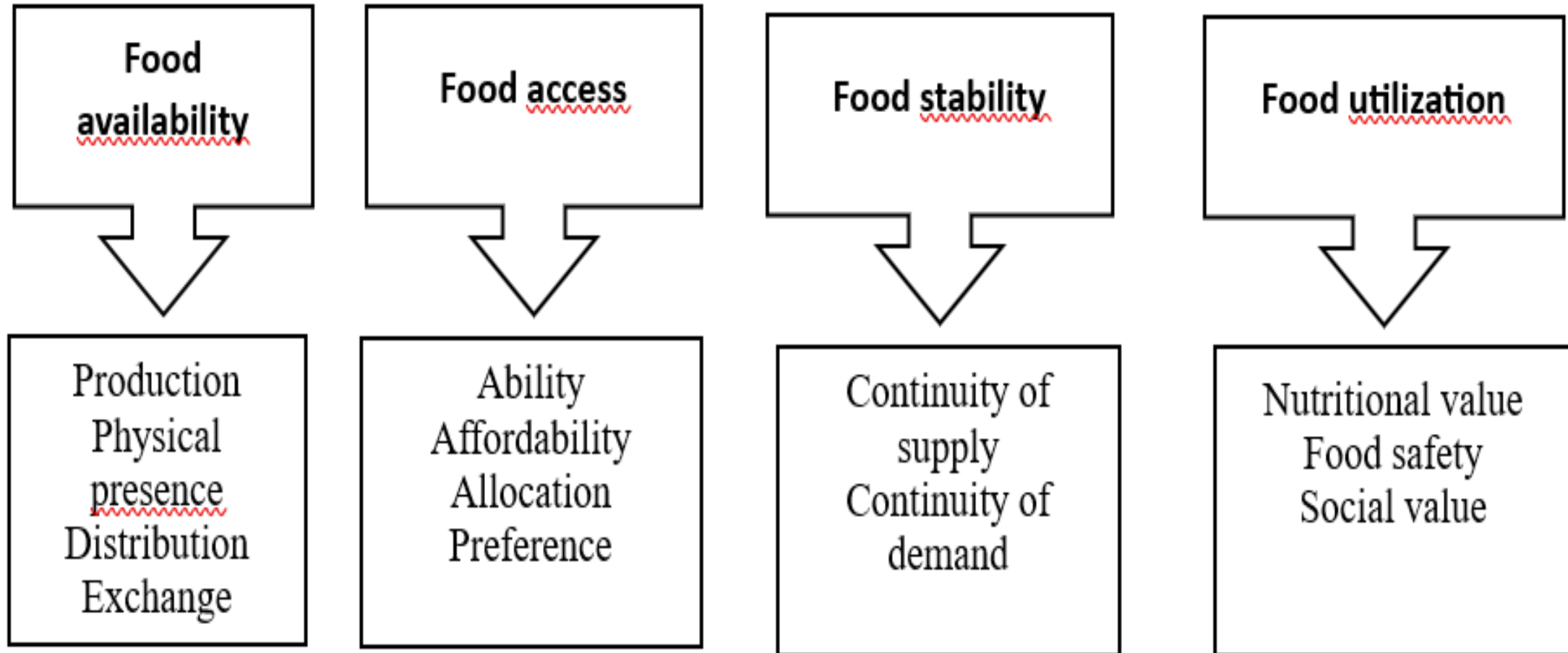
**Empirical  
specification  
and key  
finding**

**Policy  
implications**

## Introduction; Background and perspectives

- Technical cooperation WFP, ECA, ECOWAS, CILSS (.Covid-19 assessment and response in west Africa ...2020 and 2021);
- Joint ICE 2022 Marrakech : confirmation and strengthening of this collaboration;
- Explore and understand the functional and effective relationship between macroeconomic conditions and food system-food security for more targeted and efficient food security policy and programs.

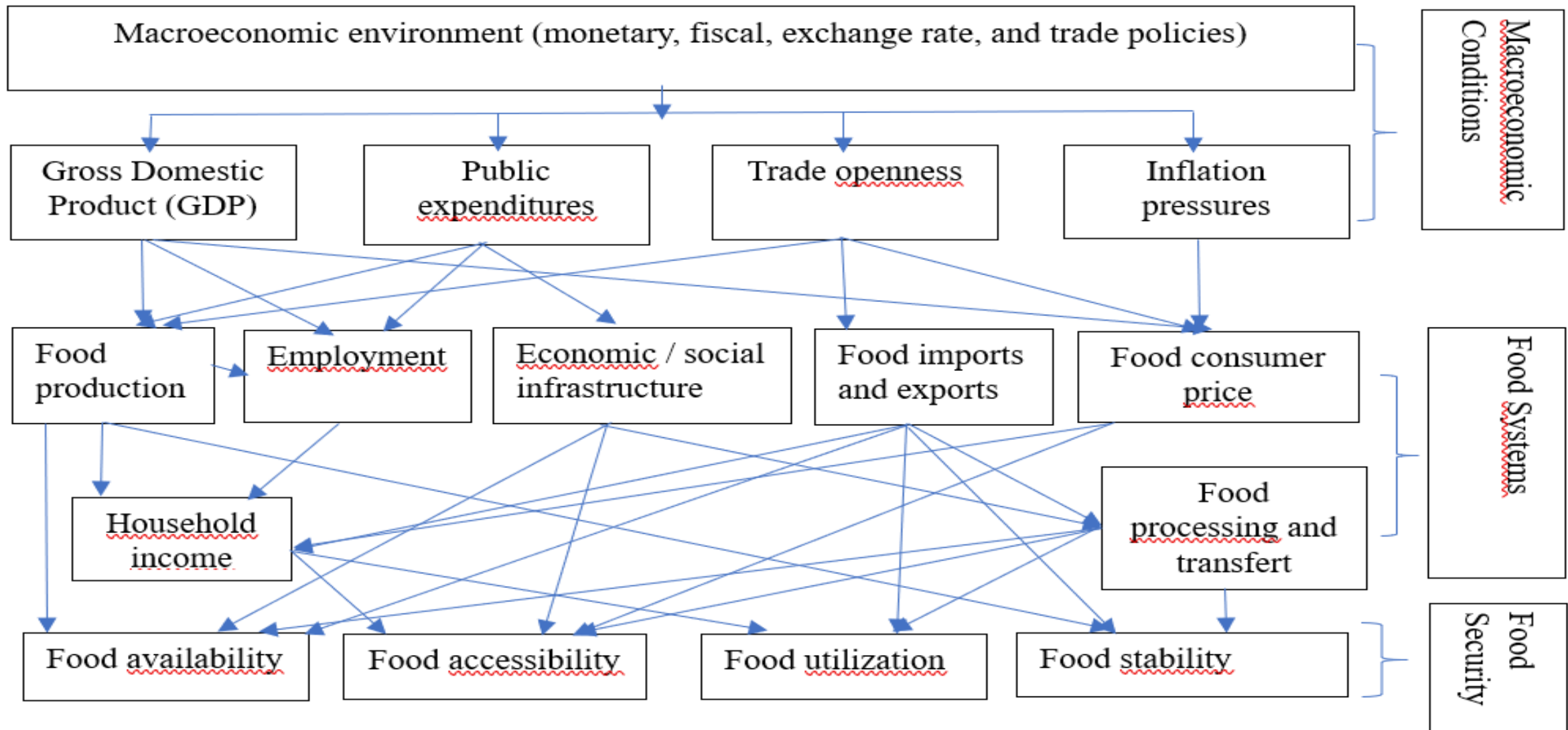
# MAIN COMPONENTS OF FOOD SECURITY



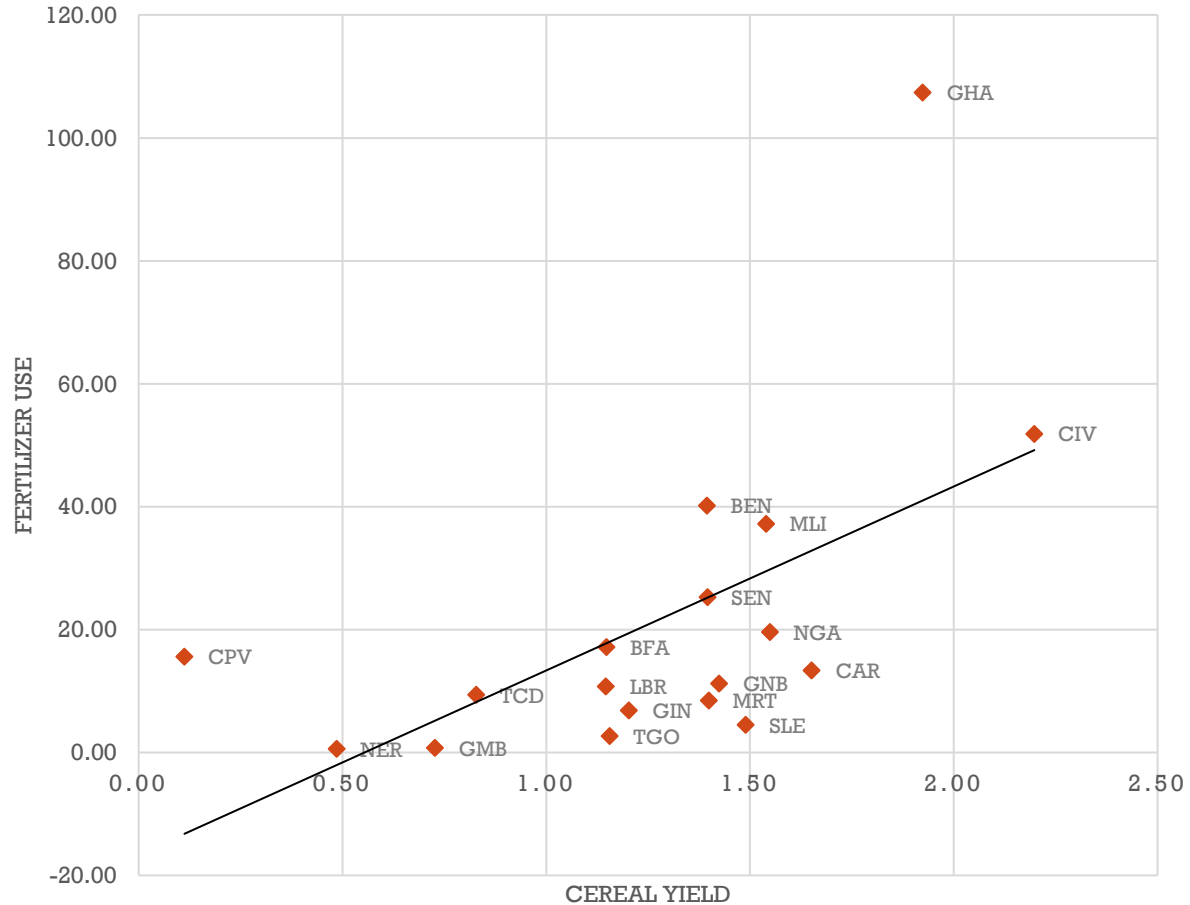
Source: Belloumi (2014)

Source: ECA from FAOSTAT Data, Accessed in October 2023

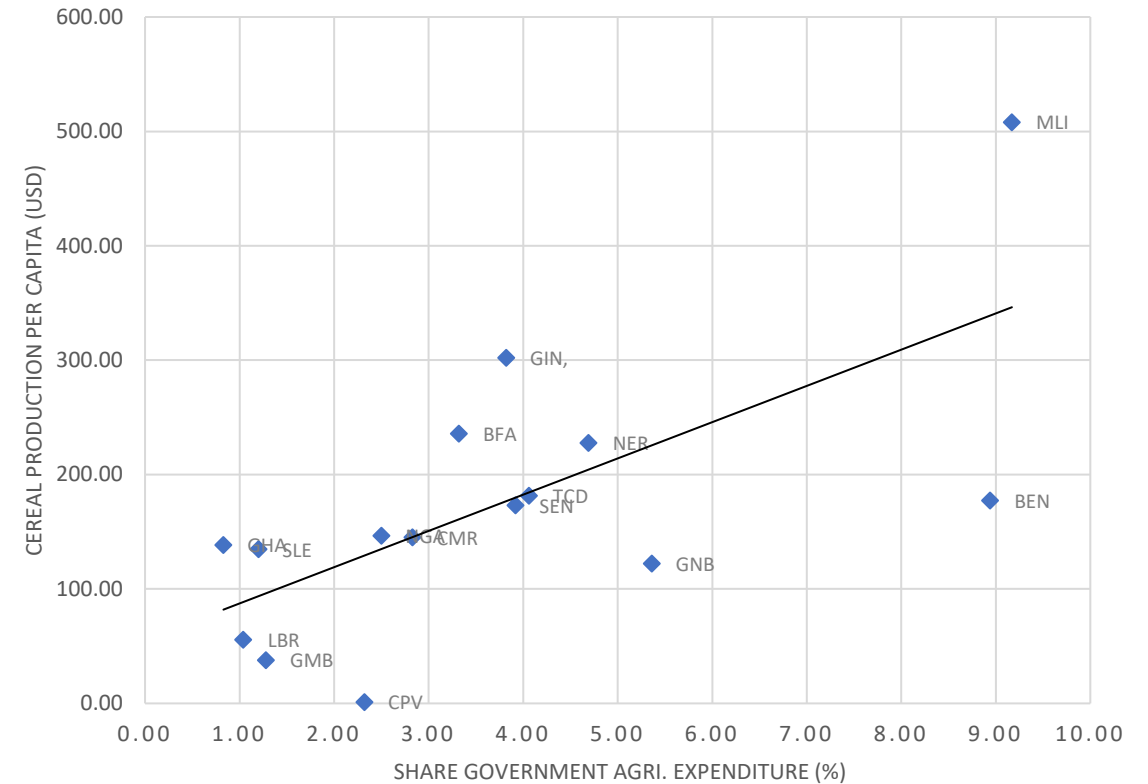
# Conceptual framework: Macroeconomic conditions on food systems and food security stability



# STYLIZED FINDINGS: Supply side

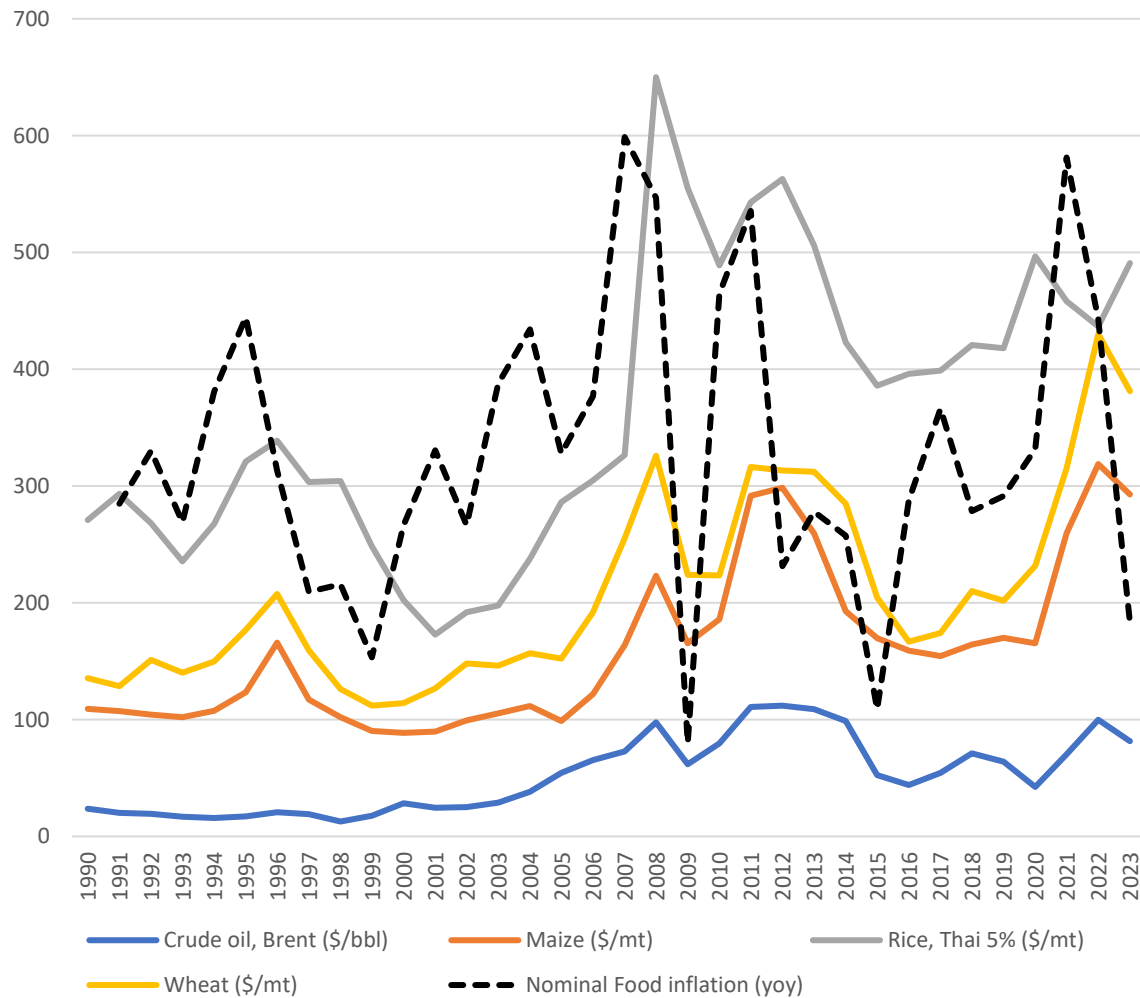


**Cereal production yield (t//ha) and fertilizer use (kg/ha arable land), 2020**

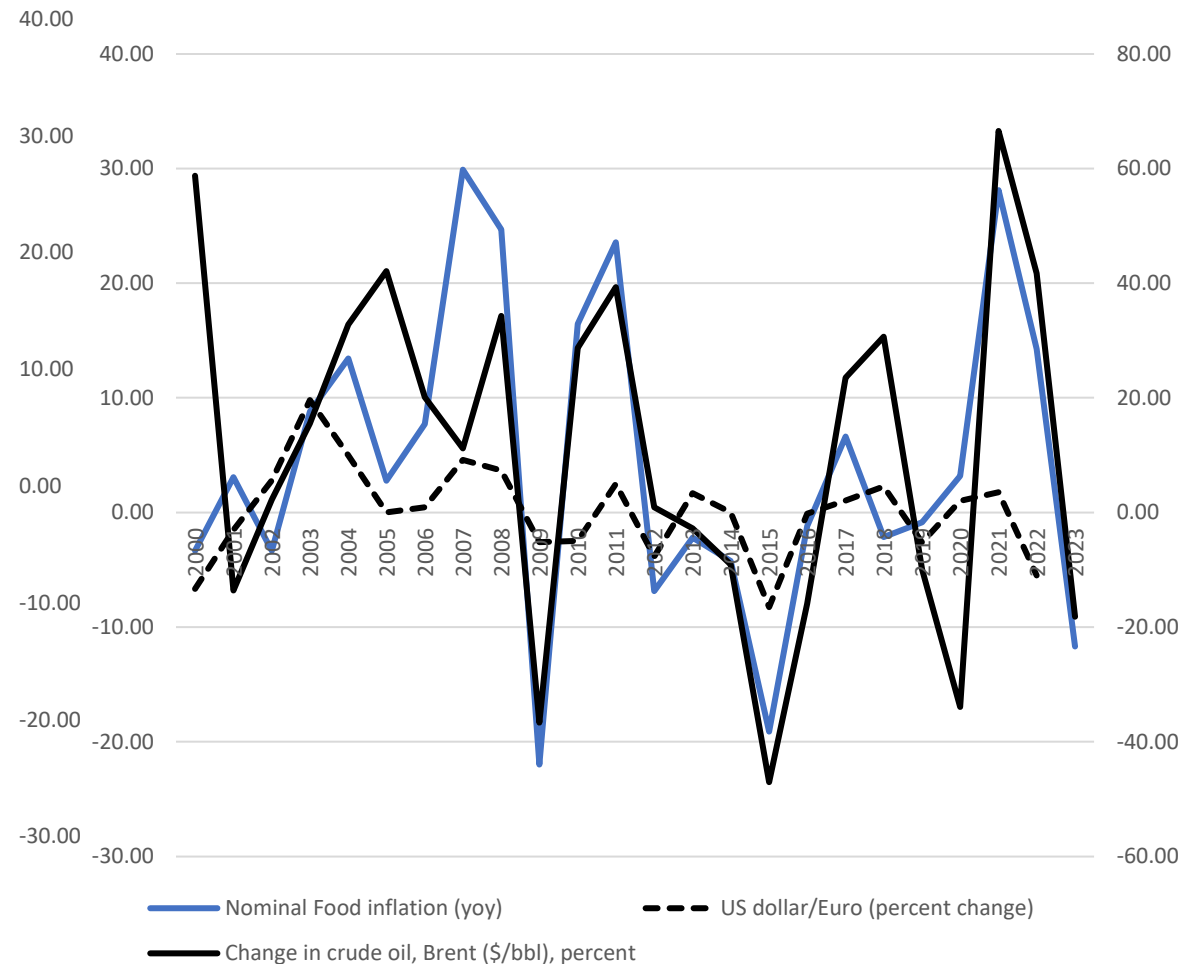


**Share of agriculture total expenditure and Cereal production per capita (USD), 2019**

# STYLIZED FINDINGS: demand side

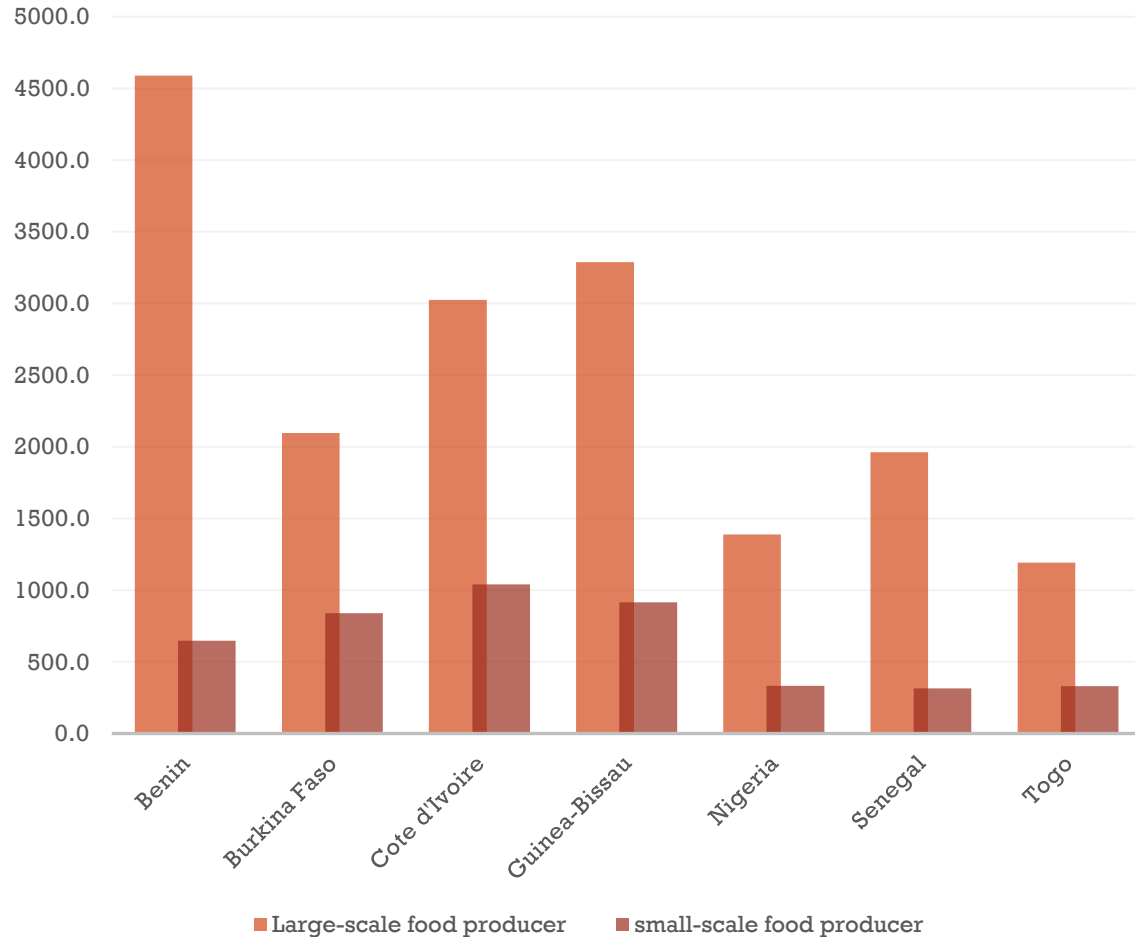


***Agricultural and key cereal world price trend, annual average and food inflation (right axis, 1990-2023***

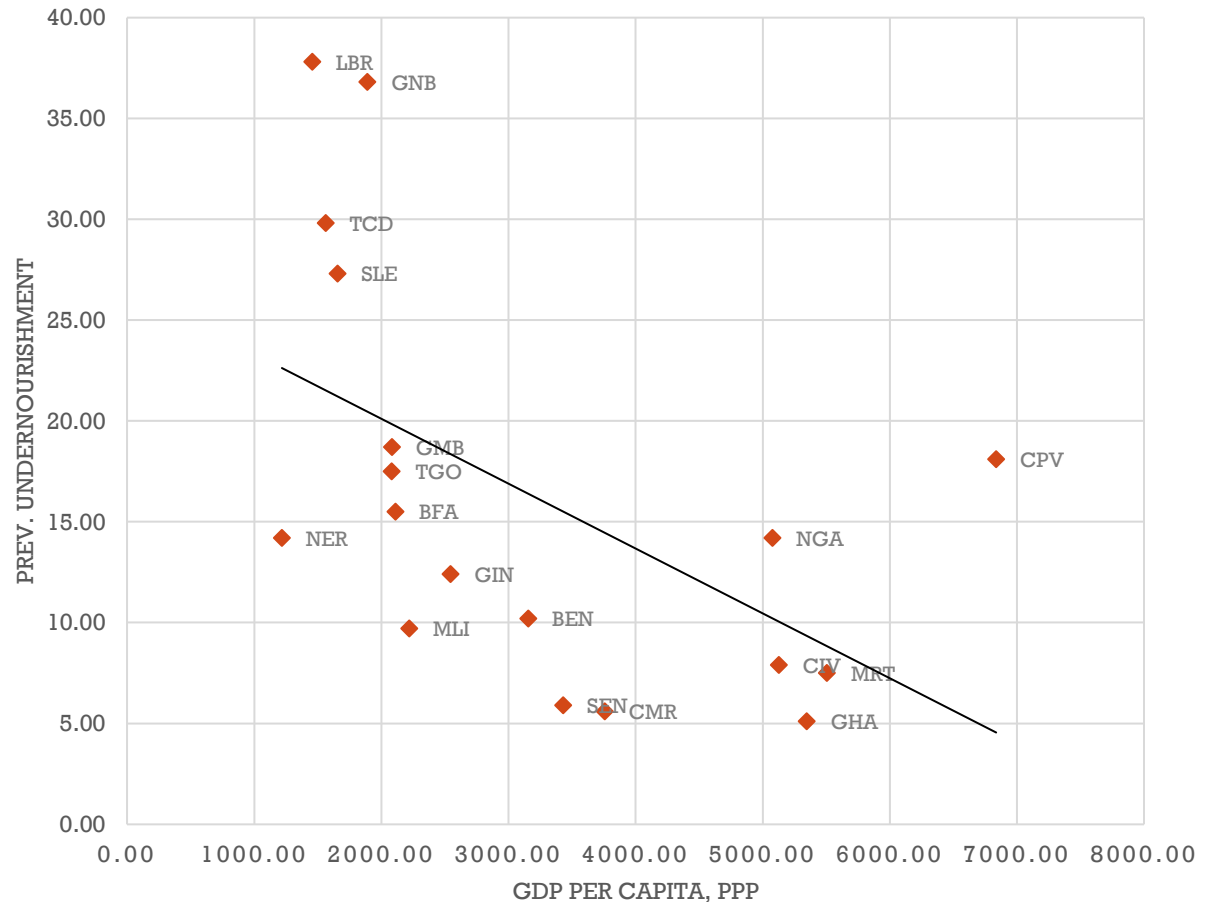


***Nominal food inflation (left axis), change in crude oil price (left axis) and US dollars/Euro nominal exchange rate change (end of year, right axis) in West Africa***

# STYLIZED FINDINGS: Demand side (CONT...)



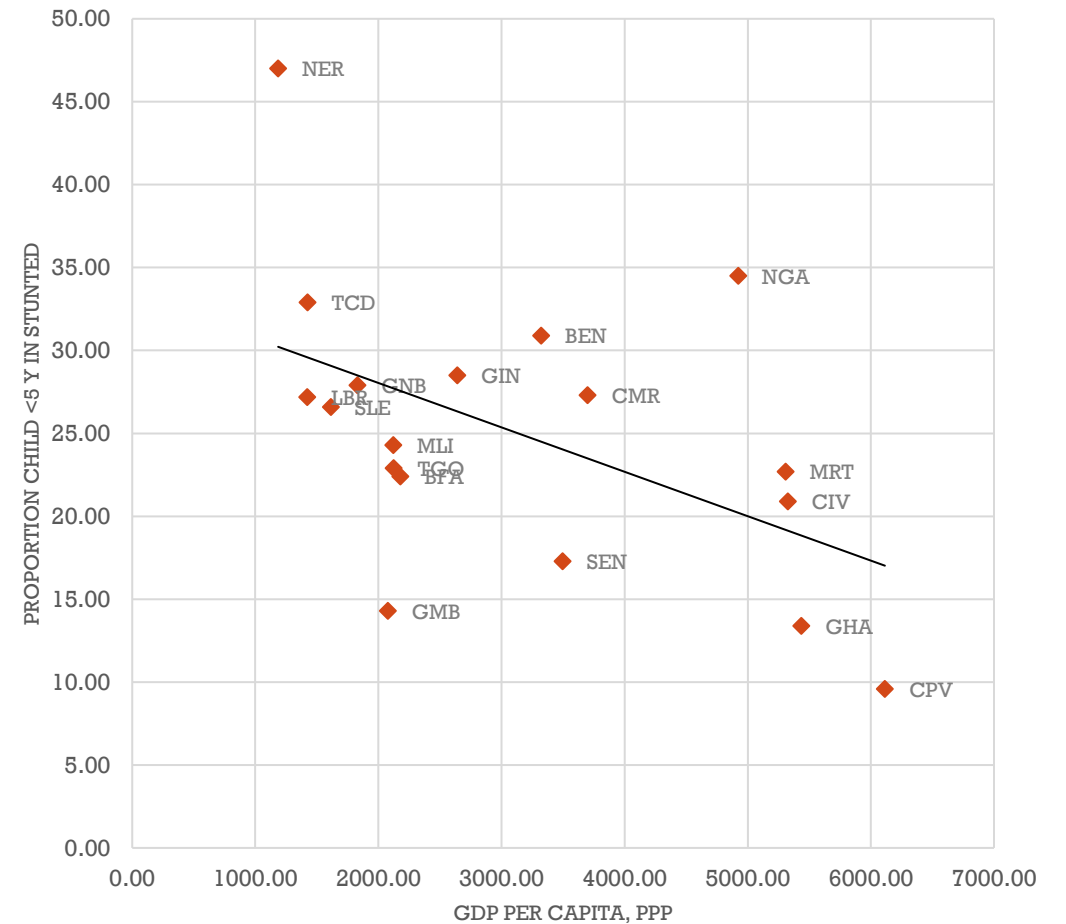
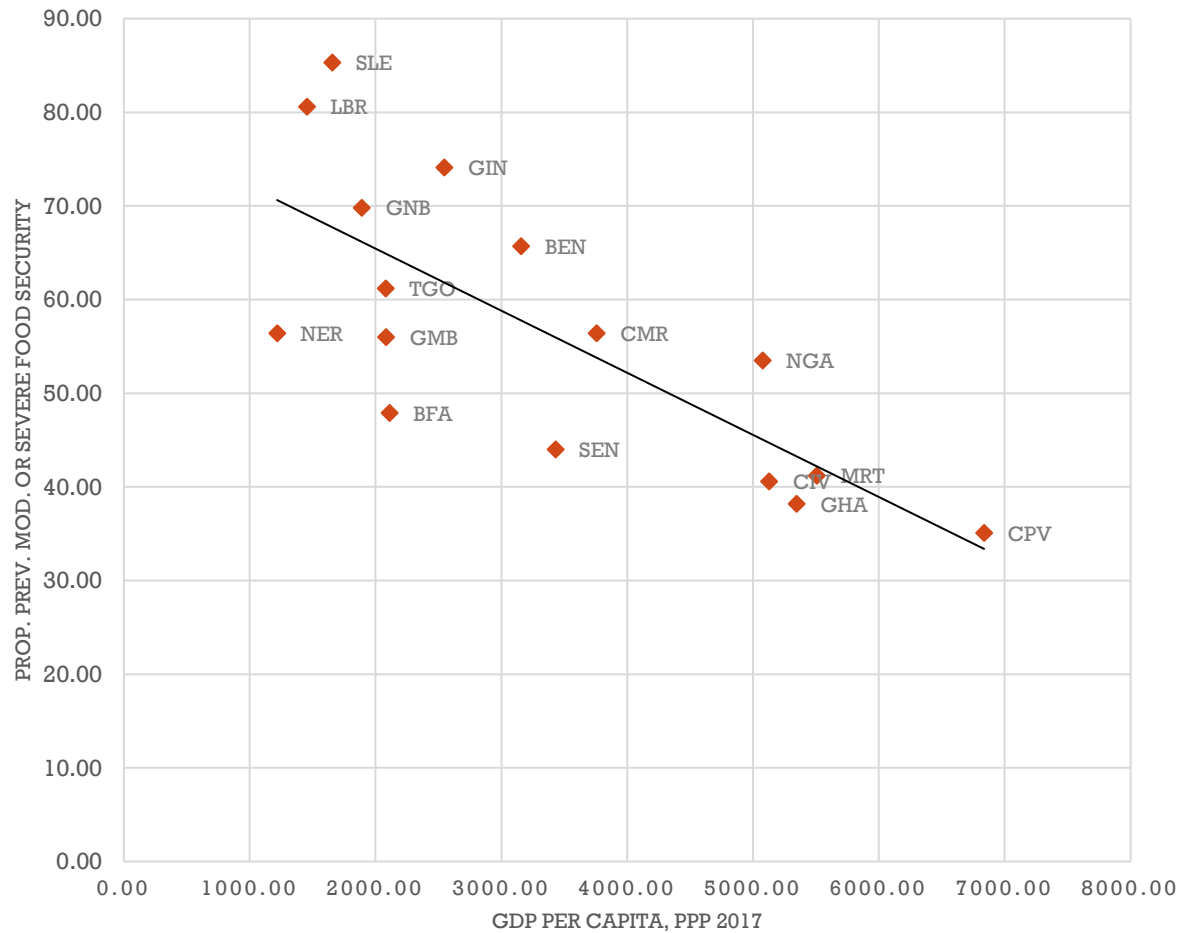
**Average income of large and small -scale food producers, PPP (constant 2011 international \$, Both sexes, 2019**



**Relation between GDP per capita (\$, PPP, 2019) and Prevalence of undernourishment of total population (average 2019-2021, %)axis) in West Africa**



# STYLIZED FINDINGS: Food Demand side (CONT...)



**Figure: Relation between GDP per capita (\$, PPP, 2021) and Prevalence of moderate or severe food insecurity in the total population (percent) (3-year average) and proportion of <5y stunted children**

## Maputo's (2003/CAADP) and Malabo's declarations (2014) and performance of agricultural sector and food system

Subregion/Country	1999-2003	2004-2008	2009-2013	2014-2018	2019-2021	Subregion/Country	1999-2003	2004-2008	2009-2013	2014-2018	2019-2021
Central Africa	2,64	2,39	2,21	2,23	2,45	Central Africa	0,06	2,13	3,14	3,82	3,08
Western Africa	3,64	4,15	2,80	3,16	2,46	Western Africa	4,62	6,41	4,38	4,02	3,23
West and Central Africa	3,14	3,27	2,50	2,70	2,45	West and Central Africa	2,34	4,27	3,76	3,92	3,15
Benin	6,46	6,27	5,96	8,59	11,54	Benin	4,82	4,75	3,89	6,43	5,17
Burkina Faso	12,46	10,17	9,41	8,92	9,03	Burkina Faso	2,55	3,94	3,34	3,56	5,91
Cameroon	2,93	4,63	8,04	7,91	7,49	Cameroon	3,47	3,44	3,96	4,96	3,48
Cape Verde	8,06	7,68	5,22	6,77	5,43	Cape Verde	8,76	7,03	3,91	-5,43	-9,58
Central African Republic	3,88	1,80	3,10	3,64	4,44	Central African Republic	-	-	-8,97	2,16	1,89
Chad	5,74	4,73	1,13	2,14	3,69	Chad	-	-4,93	3,03	3,52	3,63
Côte d'Ivoire	3,13	2,55	3,86	3,90	2,99	Côte d'Ivoire	-	-	0,33	4,71	4,53
Gambia	7,13	6,29	3,03	3,52	2,26	Gambia	9,52	2,78	0,58	-1,87	0,19
Ghana	2,02	3,31	2,65	5,11	5,37	Ghana	-	2,84	4,32	3,36	5,07
Guinea	11,25	8,82	6,24	3,23	3,20	Guinea	4,64	2,70	6,02	7,98	7,17
Guinea-Bissau	0,87	1,02	1,84	1,80	2,87	Guinea-Bissau	1,90	3,17	3,52	1,80	3,59
Liberia	1,82	2,22	21,92	1,18	0,84	Liberia	-8,76	2,05	20,72	-6,19	-0,16
Mali	9,59	12,18	10,37	9,60	9,35	Mali	3,86	5,32	2,67	7,02	2,86
Mauritania	6,56	5,54	2,48	1,25	1,23	Mauritania	0,75	-0,48	2,05	2,22	1,35
Niger	15,54	17,10	7,40	11,04	8,23	Niger	3,69	7,32	3,48	8,16	6,45
Nigeria	2,76	3,50	3,08	2,64	2,55	Nigeria	14,88	6,84	4,85	3,53	2,55
Senegal	6,62	7,06	9,42	9,70	6,90	Senegal	2,24	4,07	2,95	7,45	7,06
Sierra Leone	1,07	1,85	6,94	13,04	10,89	Sierra Leone	3,49	8,30	4,17	3,33	4,01
Togo	4,18	5,71	6,34	5,23	4,23	Togo	1,01	5,32	-1,98	5,40	2,96

**Public expenditures in agricultural as a share of total spending (%)**

**Agriculture value added growth rate (%) axis) in West Africa**

# Empirical specification and findings

- ❖ A fixed-effect model with Driscoll–Kraay standard errors specification:

$$FS_{it} = \alpha + \beta_1 GDP_{it} + \beta_2 EXP_{it} + \beta_3 TD_{it} + \beta_4 INF_{it} + \beta_5 PRO_{it} + \beta_6 EMP_{it} + \beta_7 POP_{it} + \varepsilon_{it}$$

- ❖ 04\* models results performing tests: serial correlation, heteroscedasticity, and cross-sectional dependence

- Availability: Average dietary energy supply adequacy
- Accessibility: undernourishment prevalence
- Utilization: stunting
- Stability: per capita food production variability

# Key empirical analysis findings

**10** percentage point\* increase in



**GDP**  
per capita

1.0 percentage point decline in **stunting**, 0.8 percentage point decrease in **prevalence of undernourishment** and 0.9 percentage point increase in **average dietary food energy supply**, ceteris paribus.



**Public agriculture expenditure**  
share

reduced **undernourishment** by 3.0 percentage points and **stunting** by 0.5 percentage points and increased **average dietary energy supply** adequacy by 2.3 percentage points ceteris paribus.



**Food inflation**  
rate

increases **undernourishment** by 0.3 percentage points ceteris paribus.



**Trade openness**

raises **dietary energy consumption** by 1.6 percentage points and reduces **undernourishment** by 0.3 percentage points ceteris paribus.



**Gross agricultural production**

results in 1.0 percent point increase in **food energy supply** and reduces the rate of **undernourishment** by 0.8 percentage points and **stunting** by less than 0.01 percentage points ceteris paribus.



**Employment**  
rate

increases the **adequacy of calories** available for human consumption by 9.0 percentage points ceteris paribus.



**Rural population**  
rate

is associated with an increase in **stunting** among children under five by 7.0 points ceteris paribus.



# **POLICY IMPLICATIONS**

- Policy maker to define food system and security stability strategy and program in coherence with macroeconomic condition and stability
- Member states to mobilize sustainable, innovative and adequate financing for rural infrastructure development (irrigation systems, rural and feeder roads, electricity, marketing and storage facilities, digital networks, etc.).. To achieve Malabo 10% target ,
- increase the efficiency in food production and processing develop in promoting investments in agri-industrial and agribusiness to boost the 4 dimensions of food security ;
- Member states to reduce regional trade barriers to expand regional markets and accelerate intra-African food trade by taking advantage from AfCFTA





United Nations  
Economic Commission for Africa



**THANK YOU!**