Food Processing Development in Ghana's Agri-Food Systems: The Implications for Job Creation and Macroeconomic Dynamics

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Motivation - The Development Path

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- Historical Solution and Challenges
  - Agriculture is the main employer of the Ghanaian labour force
  - However, the jobs created in the agricultural sector predominantly employ low-skilled workers.
  - The Ghana Country Economic Memorandum (2021) document shows that the bulk of jobs in Ghana are in low-productivity and often informal services sectors, creating few mid-productivity and mid-skilled jobs for the country's labour force.

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- Given the above job creation characteristic, the structural change and urbanisation evolution of the Ghanaian economy have not been engines for growth.
- Lower-skilled workers have not been able to move from agriculture into modern sectors with higher productivity and the scope to drive innovation and economies of scale

Problem cont...

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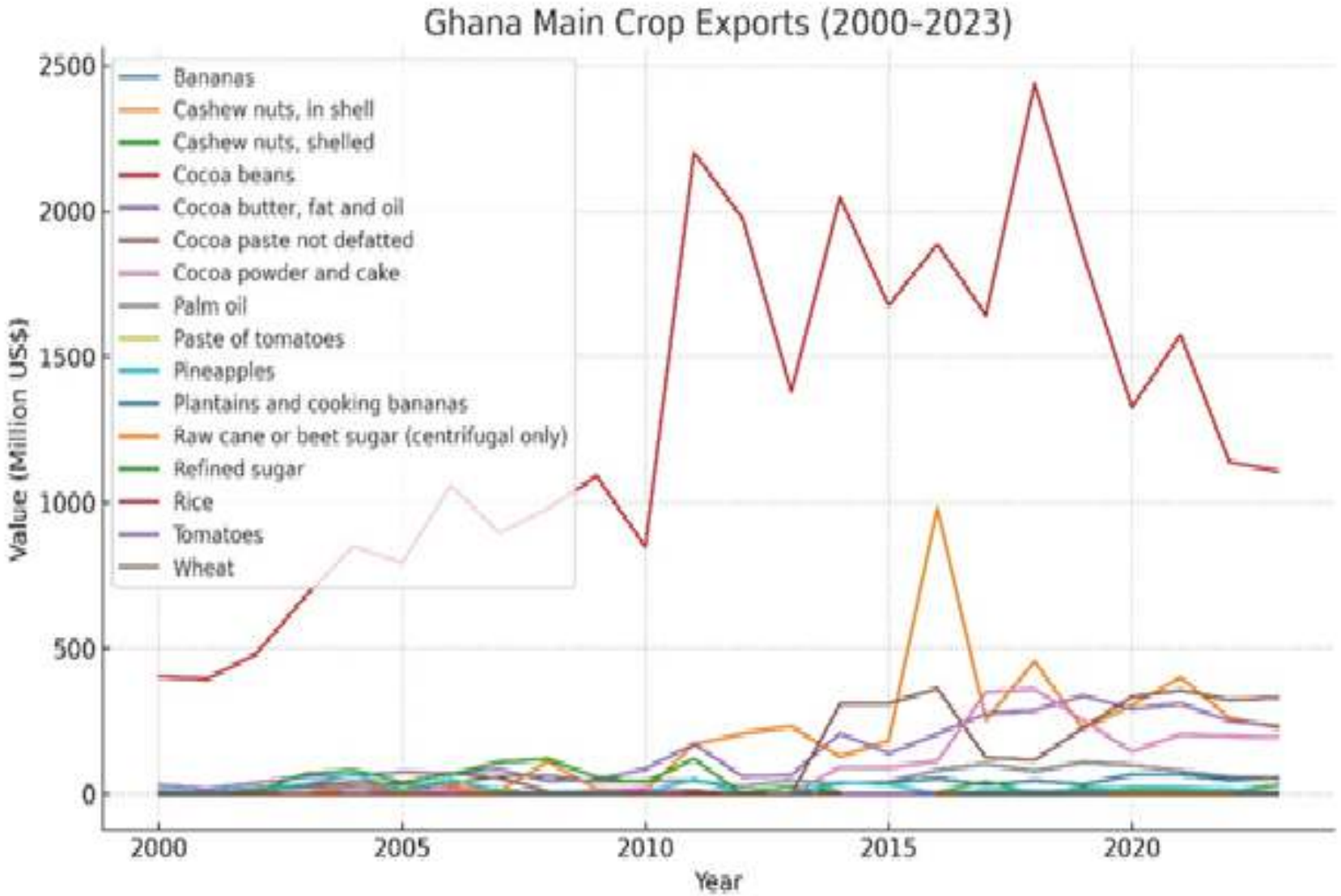

Food Processing as a possible panacea

- Food processing presents an opportunity to address the twin challenges of unemployment and underemployment by creating direct and indirect employment opportunities, as well as utilising modern technology to absorb medium- and high-skilled workers (Afful-Koomson and William, 2015)

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- Through value addition, food processing contributes to macroeconomic fundamentals (Diao, Hazell & Thurlow, 2010; Amanor, 2019).

The Need for Evaluation

Can the development of the food processing sector help address the job creation challenges in the case of Ghana??

Research Questions???

- What is the effect of food processing development on employment?
- How does food processing development change the structure of job creation in terms of skilled and unskilled composition?
- What is the consequential effect on household income distribution and inequality implications

Theory of Change

- Job creation: food processing development ensures investments in food processing infrastructure, technology, and value chain development, which causes increased demand for processed foods, creating jobs in processing, packaging, and distribution, as well as for farmers and workers in related support services.
- On a spatial balance, this cycle boosts rural economies, enhances food security, and fosters entrepreneurship by providing technical skills, financial support, and market access to actors in the food system.
- Macroeconomic outcomes is mapped from increased food processing activities to impact job creation, increased exports, higher GDP, improved food security, and greater economic stability.

Methodology and Approach

General Equilibrium Approach adopting the Rural Investment and Policy Analysis (RIAPA) Model

- The model is an extension of the Standard IFPRI Recursive Dynamic CGE Model (see Diao and Thurlow 2012 for details).
- The model is a forward-looking, economy-wide country-level tool that incorporates flexible behavioral features, such as nested production functions, imperfect substitution of imported commodities, and linear expenditure systems of consumer demand.
- In the model, production uses a nested CES technology that allows producers to generate demand for both factors and intermediates when maximizing profits.
- For this analysis, production inputs included capital, labor, and cropland.
- Land and labor are disaggregated across skill groups
- Both land and labor can be reallocated or migrated across sectors in response to endogenously determined factor demands.

Data - SAM 2019

- The 2019 SAM is an update of the 2015 SAM with greater detail.
- The update include
  - upgrade of the 2005 supply and use table (SUT) to a 2013 base year.
- More info - https://hdl.handle.net/10568/131976

Scenario Design

- A scenario with increased food processing is compared to the base, representing the status quo in Ghana in 2019.
- We simulated an increase in food processing by processing 50 per cent of Ghana's domestically produced foods.

Results and Discussion

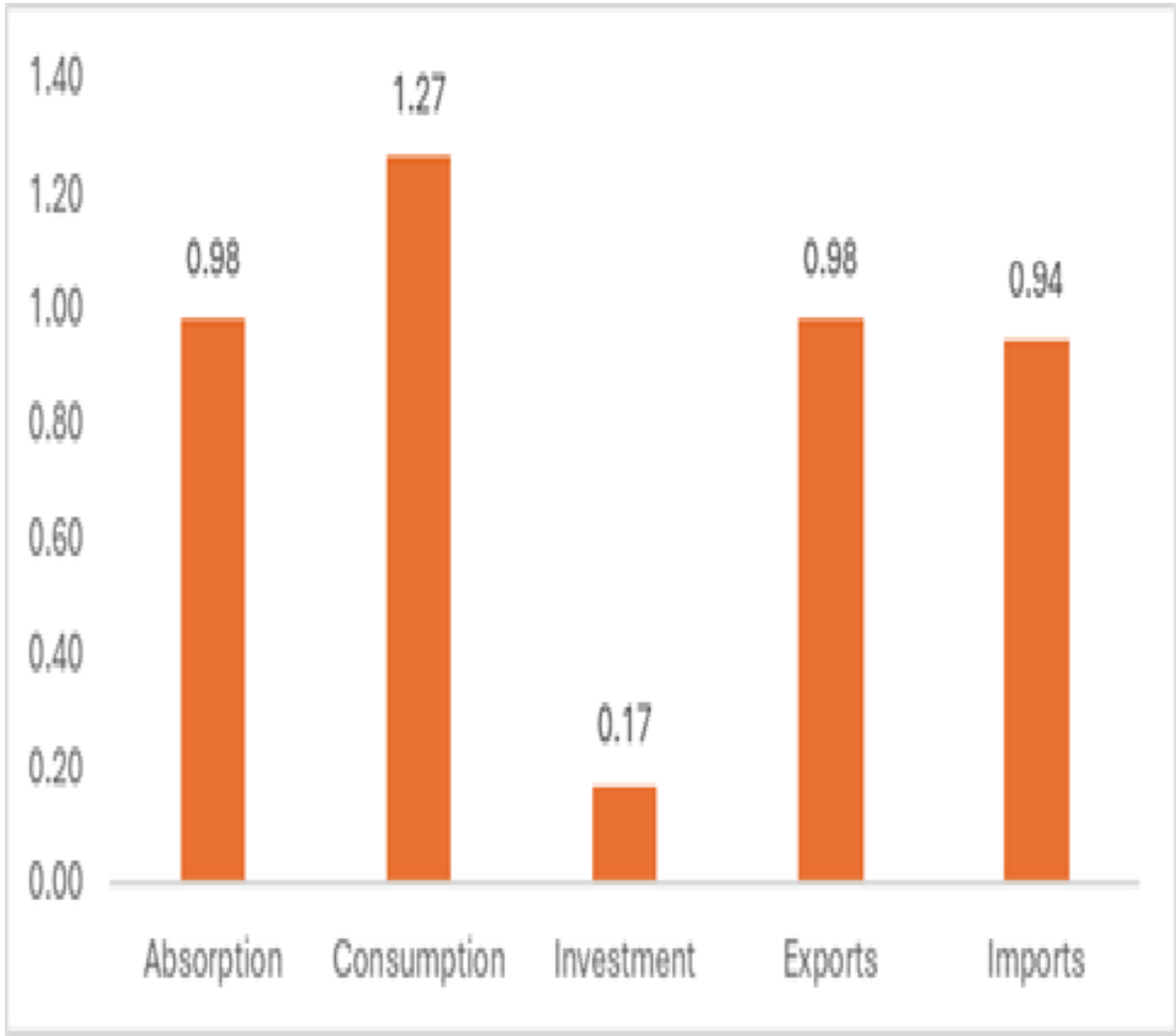
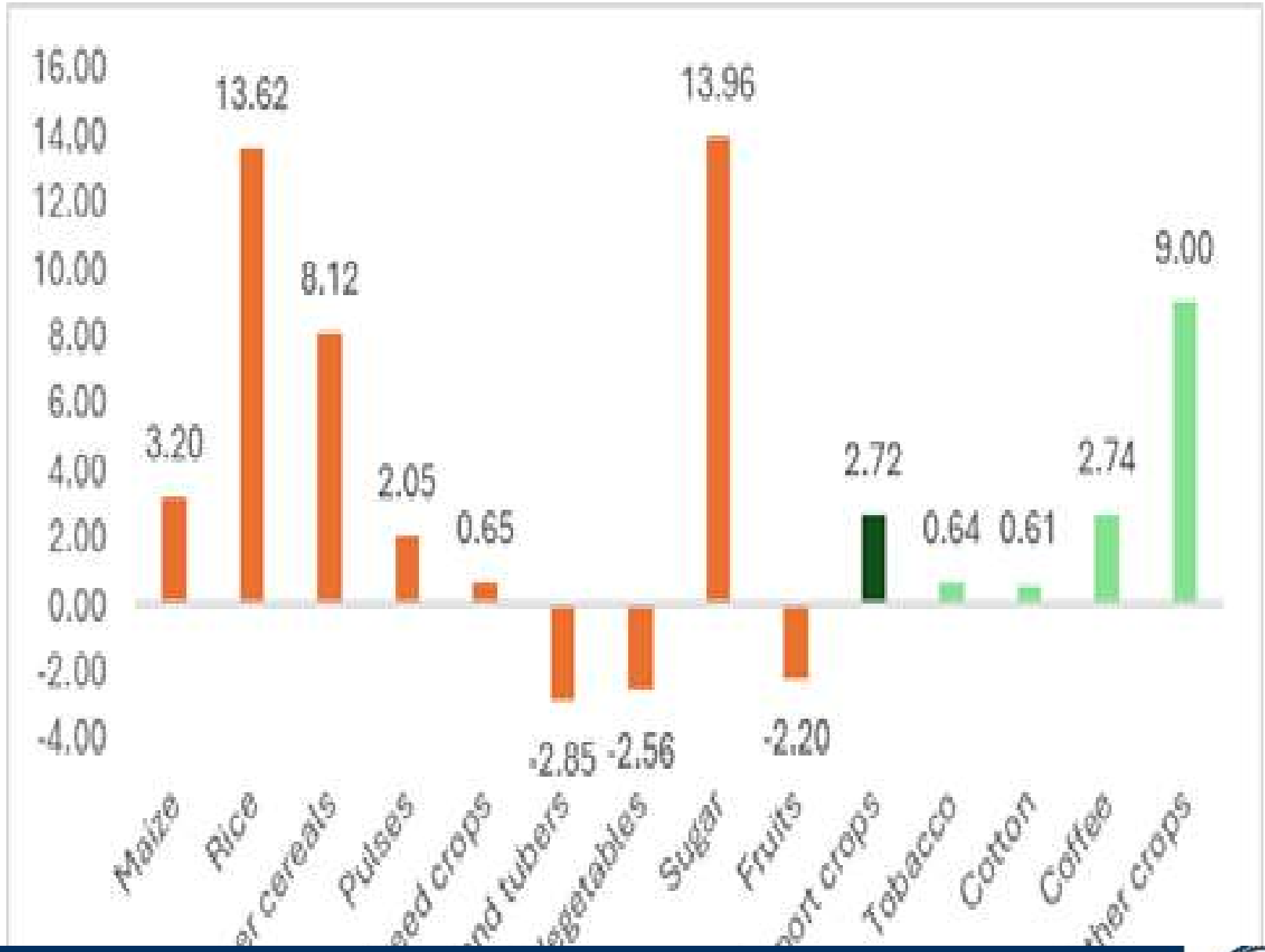


Figure: Macroeconomic Impact of Food Development

Results: Crop Sector Impact



Results: Job Creation Impact

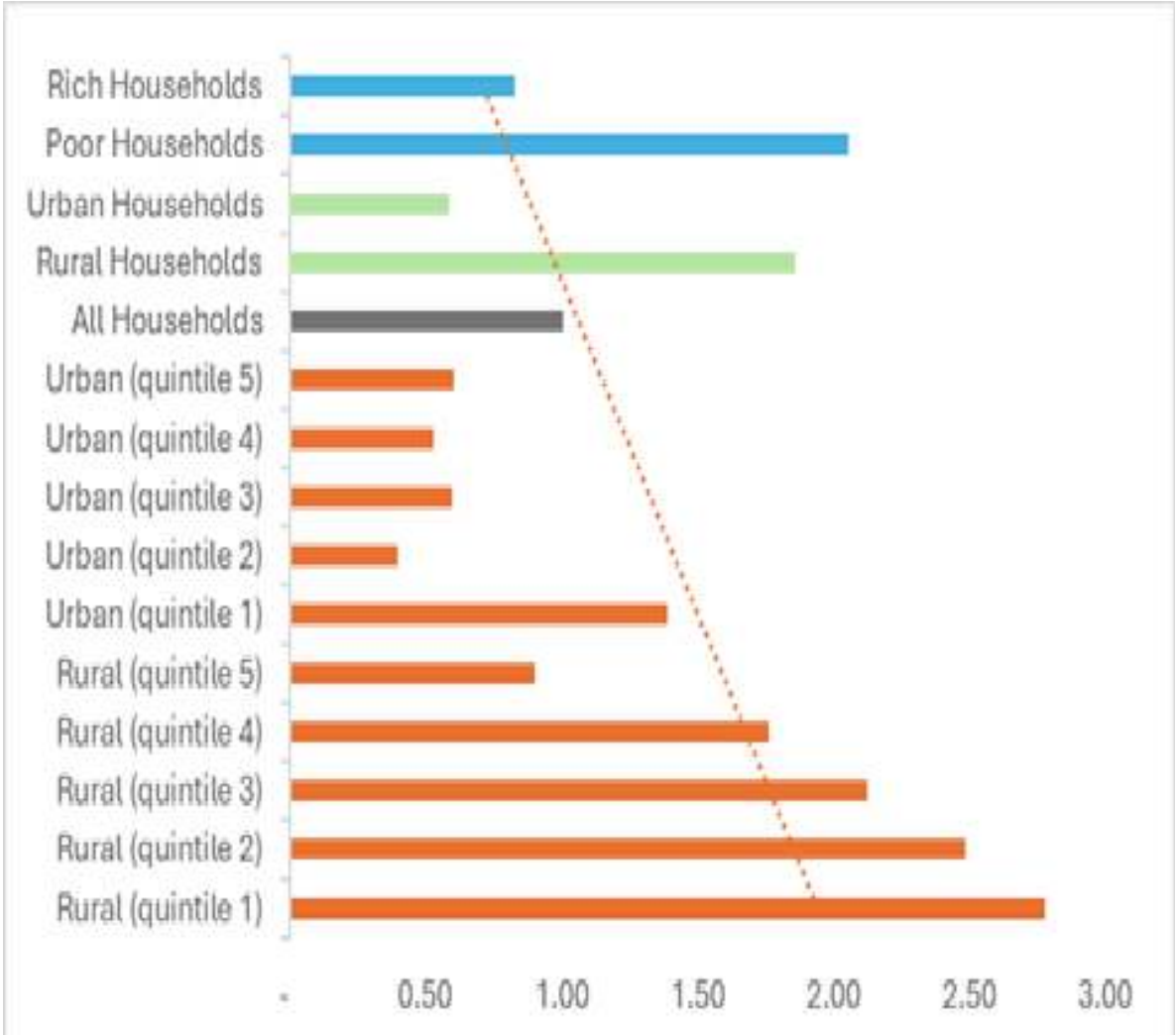
		Unskilled & semi-skilled	Medium- & high-skilled
Agriculture		**74.72**	**25.21**
	Cereals & root crops	43.50	11.17
	Pulses & oilseeds	7.67	2.12
	Horticulture & tree crops	0.32	0.55
	Export, other crops & forestry	12.94	8.80
	Livestock & fisheries	10.29	2.56
Non-agriculture		**25.28**	**74.79**
Industry		**9.20**	**14.17**
	Extractive industries	1.74	4.31
	Food processing	3.33	1.26
	Other agro-processing	0.31	0.13
	Other manufacturing	3.34	5.54
	Metals, equipment & vehicles	0.02	0.17
	Construction & utilities	0.46	2.76
Service		**16.08**	**60.62**

Figure: Macroeconomic Impact of Food Development

Results: Job creation - sector analysis

Table 2

Results : Income Distribution



Conclusion and Policy Recommendation

- The results for the Ghanaian case show that food processing development generates an increase in overall demand for jobs, providing evidence to support the job creation ability of the sector.
- Again, developing the food processing sector creates less demand for low-skilled labour while creating demand for mid-skilled and high-skilled labour.
- Again, the results indicate that while the intervention generates a positive impact on all categories of households, the impact on the poor and rural households outweighs that of their respective counterparts, rich and urban households.

Cont...

- In view of the study's findings we recommend Ghana to intensify the implementation of the One District One Factory (1D1F) program targeting food processing, such as sugar, palm, staple foods such as cassava, and others.

THANK YOU