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How the fertilizer subsidy program can boost economic growth and employment in Ghana

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Key messages

- Ghana's fertilizer subsidy program should be continued and extended beyond its planned implementation period to at least 2024.
 - The fertiliser subsidy program boosts GDP growth, increases crop production, enhances household welfare and reduces unemployment.
- Farmers should be trained and commit to use fertilizers correctly, to ensure the positive effects of the subsidy.

Tackling Ghana's agricultural problem

Ghana's agricultural sector has performed sluggishly in recent years, expanding at just 3.6% a year between 2010 and 2016, compared with average growth of 7.2% in the economy overall. Any growth in the sector has mostly been attributed to land expansion rather than improvements in productivity, raising serious concerns about sustainability, especially given Ghana's rising levels of urbanization.

During the 2015 planting season, figures from the Ministry of Food & Agriculture (MoFA) show maize, rice and sorghum reached only 35%, 46% and 55% of their potential yields, respectively. This low productivity has been linked to a lack of access to nutrient fertilizer, partly due to high prices.

To promote productivity and create jobs in the agricultural sector, Ghana's government rolled out the Planting for Food and Jobs (PFJ) program in 2017. The program encourages farmers to adopt new technologies, such as improved seeds and fertilizers, by providing incentives and appropriate training, as well as improved access to markets through the use of ICT.

The program is expected to be implemented between 2017 and 2020, at an estimated cost of GH¢3,300,721,266 (US\$ 717,548,101). It is organized around five pillars:

- Seed access and development
- Fertilizer access and fertilizer systems development
- Free extension (advisory) services for farmers
- Marketing opportunities
- E-Agriculture



The program aims to make fertilizer more accessible to encourage appropriate fertilizer use. The program offers a 50% price subsidy—accounting for more than half the PFJ budget—and aims to ensure the timely availability of fertilizer.

The experience of numerous countries suggests agricultural transformation increases productivity, and that the use of modern agricultural inputs such as fertilizer is an essential feature of this transformation.

However, **there is no consensus on the economic impact of input price subsidy programs.** The cost of implementing such programs is often high, and evidence on their impacts is mixed.

A team of local PEP researchers sought to investigate whether:

- **The PFJ fertilizer subsidy program leads to an increase in productivity, production and GDP growth in Ghana.**
- **The PFJ fertilizer subsidy program promotes job creation and improvements in household welfare in Ghana.**

The analysis

The research team used a dynamic computable general equilibrium (CGE) model, calibrated to the 2015 Social Accounting Matrix (SAM) for Ghana, to simulate two policy options:

- **The PFJ fertilizer subsidy program, implemented as planned** using the actual fiscal allocation for 2017 and the projected fiscal allocation for 2018-2020
- **A four-year extension to the PFJ fertilizer subsidy program** through projected fiscal allocations for 2021 to 2024.

The team then compared their results with those of another study¹ investigating the economic impact of Ghana's Nation Builder's Corps (NABCO) program, which began in 2018. The team used this comparison to analyze whether the fertilizer subsidy is a cost-effective strategy for improving household welfare in Ghana.

The team used household consumption expenditure as an indicator for household welfare.

¹ Danquah & Iddrisu (forthcoming, IGC working paper)

Key findings

The Planting for Food and Jobs fertilizer subsidy program provides important benefits for Ghana's economy:

- **Average annual crop productivity increases** for maize (29%), sorghum (13%) and rice (21%) between 2017 and 2024.
- **Average annual production levels increase** for maize (14%), sorghum (11%), rice (15%), other agricultural activities (2%) and the food industry (14%).
- **GDP growth rate increases** by 0.16 percentage points annually, on average.
- **Reduced unemployment**, especially among skilled labour, particularly in rural areas, and among those engaged in non-agricultural activities.
- A **drop in prices** of agricultural products and processed foods.
- **Increased household welfare** and household consumption expenditure.
- **Increased exports** of priority crops (including maize, rice and sorghum) and processed food.
 - ◆ However, the program did not reduce imports of priority crops.
- **Food industry production meets domestic demand** and replaces processed food imports

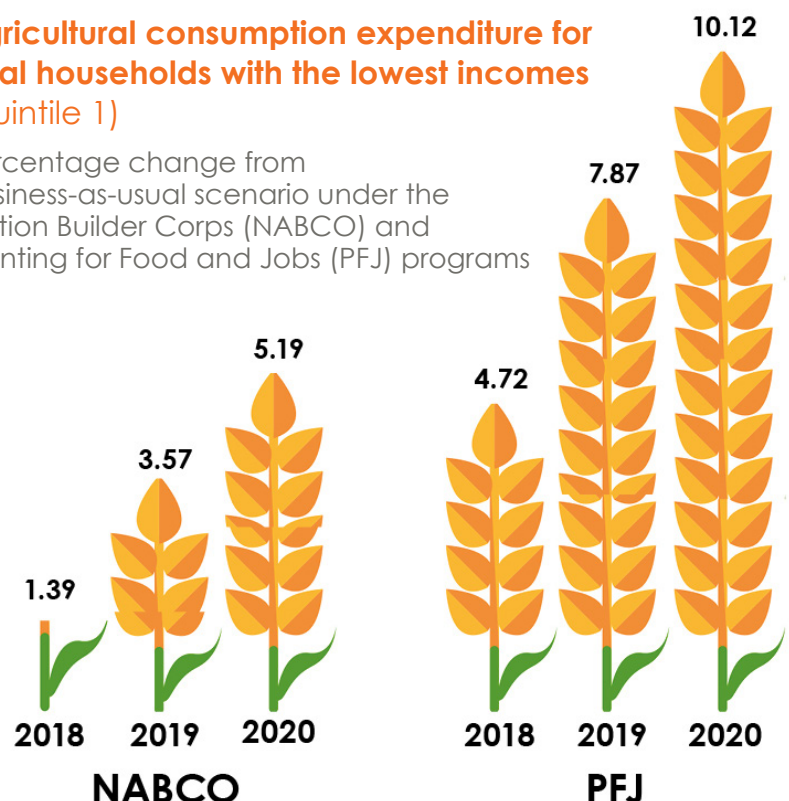
However, the fertilizer program raises fiscal spending and thus increases the government debt stock.

The Planting for Food and Jobs fertilizer subsidy program is more cost-effective for improving welfare than the Nation Builder's Corps (NABCO).

- The annual cost of implementing the PFJ fertilizer subsidy program is around **half the cost** of NABCO (GH¢ 460,626,245 and GH¢ 814,657,200, respectively)
- The fertilizer subsidy program is **more welfare-enhancing** than the NABCO, especially for those who have the lowest incomes.
 - ◆ **Consumption expenditure** on agricultural commodities among rural households with the lowest incomes is **three times higher** under the fertilizer subsidy program

Agricultural consumption expenditure for rural households with the lowest incomes (quintile 1)

Percentage change from business-as-usual scenario under the Nation Builder Corps (NABCO) and Planting for Food and Jobs (PFJ) programs



Conclusions and policy implications

The findings show that, if implemented as planned, **the Planting for Food and Jobs fertilizer subsidy program is effective in achieving its goals to improve Ghana's economy** through increased productivity, sectoral and overall economic growth, job creation and household welfare.

Given the greater welfare-enhancing effects—compared to the NABCO program—**the government of Ghana should invest its very limited resources in the Planting for Food and Jobs fertilizer subsidy program.** Implementation of the fertilizer subsidy program should be maintained and, if possible, **extended beyond its planned implementation period to at least 2024.**

However, **the government should also devise a mechanism to wean beneficiaries off the program,** to allow for the enrolment of new beneficiaries. Otherwise, the program's financing is likely to put too much pressure on the government's fiscal position.

Given that this study is based on the assumption that farmers apply the required quantity of fertilizers in an appropriate manner, to ensure the positive outcomes predicted, **farmers should be trained and commit to use fertilizers correctly.** Through the PFJ, agricultural extension officers can closely monitor farmers. The Ghana Agri-Input Dealers Association (GAIDA) should be made responsible for ensuring that farmers obtain the right quality and quantity of fertilizers in a timely manner.

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Photo: Hamish John Appleby / IWMI



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