

# GHANA

## Strategy Support Program



### Evaluation of Four Special Initiatives of the Ministry of Food and Agriculture

Samuel Benin, Michael Johnson, Kipo Jimah, Joe Taabazuing, Albert Tenga, Emmanuel Abokyi, Gamel Nasser, Gerald Ahorbo, and Victor Owusu

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#### INTRODUCTION

This study assessed four major subsidy and credit facilitation initiatives implemented by the Ministry of Food and Agriculture (MoFA) to guide government policy and improve performance. The four initiatives are:

1. support to the establishment and operation of Agricultural Mechanization Services Centers (AMSECs)
2. Subsidization of fertilizers via the National Fertilizer Subsidy Program
3. Establishment and management of Block Farms that benefit from a combination of subsidized mechanization services and fertilizers, credit for improved seed and pesticides, extension services, and guaranteed minimum output prices
4. Stabilization of output prices via the establishment and operation of the National Food Buffer Stock Company (NAFCO)

With the objective of modernizing agriculture, the goal of these initiatives is to increase productivity and incomes of Ghanaian farmers.

Based on the literature, program-specific impact pathways were conceptualized to guide the empirical approach, including indicators, sampling, data collection, and analysis. The information was obtained from two main sources: (i) existing program documents and data; and (ii) interviews with implementing actors, knowledgeable experts, farmers, and other stakeholders along the entire value chain, using both structured and semi-structured instruments (Benin et al. 2012).

#### AMSEC

The aim of the AMSEC program, which was piloted in 2007 with 12 centers in eight regions, was to make mechanization services available at farmers' doorsteps in every district with the potential for setting up at least one program. The idea was to raise the tractor-to-farmer ratio from 1:1800 to 1:500 by 2020 and to reduce the number of tractors older than 15 years.

Successful applicants to participate in the program, which was open to all private sector actors, including farmers, were given an average of five tractors and accompanying implements, including plows, harrows, and trailers. An initial payment of 10-17 percent of the total cost was paid by the applicants, with the remainder to be paid in five annual installments. By the end of 2010, about 467 tractors, other machinery and accompanying implements had been distributed at a cost equivalent to less than 2 percent of MoFA's budget in 2008 and 2009 (Table 1).

**TABLE 1—TOTAL NUMBER OF EQUIPMENT DISTRIBUTED AND COST, 2007-2010**

	2007	2009	2010	Total
<b>Machinery</b>				
Tractors	89	290	71	450
Power tillers	10	3	0	13
Maize shellers	0	3	1	4
<b>Implements</b>				
Plows	83	218	0	301
Others	198	40	0	238
<b>Total cost (GHC '000)</b>	<b>1,044</b>	<b>2,303</b>	<b>1,047</b>	<b>4,393</b>

Source: Benin et al. (2012).

Note: Other implements include trailers, slashers, harrows, and rotovators.

Given the high capital cost of entering the mechanization services market, the AMSEC program has contributed to improving access by all farmers to these services by raising the average area mechanized (at least by the surveyed farmers) from 5.3 acres per farmer in 2008 to 7.8 acres per farmer in 2010, representing a 21 percent per year increase.

Because the demand for mechanization services far outstrips the supply, the program has not crowded out private-sector investment. However, newer tractors associated with the AMSEC program seem to break down more frequently than those operated by non-AMSEC agents—about 17–64 percent more—due to lack of skilled operators and mechanics or spare parts for the new tractors.

Additional issues affecting the program have been poor cost recovery by MoFA in the initial stages, limited scope of mechani-

zation services, and poorly prepared fields with unmarked stumps. The latter two affect efficient operation of mechanization services in general.

## NATIONAL FERTILIZER SUBSIDY PROGRAM

In an effort to increase productivity of Ghanaian farmers and modernize agriculture, the government of Ghana, in July 2008, instituted a country-wide subsidy on four types of fertilizer:

- NPK15:15:15
- NPK 23:10:05
- Urea
- Sulphate of ammonia

The subsidy was also a response to dramatic increases in food and fertilizer prices as well as to raise the low average application rates of fertilizer from 8 to 20 kg/ha. In 2008 and 2009 the subsidy was implemented through the voucher system, and from 2010 through the waybill system. While the voucher system targeted small-scale farmers, the waybill system was made available for all types of farms and farmers that could afford the subsidized price. The total amount of subsidized fertilizers increased more than threefold from 43,200 MT in 2008 to 150,000 MT in 2011, at a cost equivalent to 10–13 percent of MoFA's total budget in 2008 and 2009 (Table 2).

**TABLE 2—TOTAL FERTILIZERS SUBSIDIZED AND COST, 2008-2011**

	2008	2009	2010	2011
Total amount (1000 MT)	43.2	72.8	91.2	150
Total cost (GHS millions)	20.6	34.4	32	69.8

Source: Benin et al. 2012.

Notes: Figures for 2011 are estimates.

The fertilizer subsidy program has contributed to an increase in application of fertilizers. Farmers who applied fertilizer not only obtained not only higher yields, which was expected, but a positive net income than those who did not use any fertilizer. The overall future economic return of the program is positive, with an estimated benefit-cost ratio of 1.7, although this comes with high risks because costs associated with the program over-time could easily consume a larger share of the MoFA budget (up to 35 percent by 2020).

Delays in negotiations between the government and fertilizer importers, which delay supply and distribution of the fertilizers, place limitations on the potential benefits of the program. To forestall delays in fertilizer importation and distribution, it is recommended that government initiate negotiations with importers early so that fertilizer can be stocked in the appropriate districts prior to the planting season.

## BLOCK FARM PROGRAM

The Block Farm Program (BFP), launched in 2009 as a pilot in several locations in six regions, was intended to bring in large tracks of arable land (in blocks) for the production of selected commodities in which the districts had comparative advantage.

The idea was to exploit economies of scale, thus ensuring that the block farms benefited from subsidized mechanization services and inputs (fertilizers, improved seed, and pesticides) in the form of credit and extension services, both delivered to farmers by MoFA. By bundling the delivery of both inputs and services, it was envisaged that delivery would be timely and cost-effective.

Agricultural extension agents are supposed to work closely with farmers so that the farmers follow recommended practices to meet yield expectations. Following harvest, the cost of the services and inputs provided as credit by the government to the block farmers is recovered in kind—a fixed number of bags of grain or output determined at the beginning of the program. Because prices at harvest are usually at their lowest levels in any year, farmers looking to sell their produce at that time can sell to agents of the National Buffer Stock Company (NAFCO) at a higher price than what could have been obtained on the open market.

Data on actual coverage of the program and costs were difficult to obtain. In the pilot phase in 2009, the program covered 11,577 ha at a total cost of GHC 2.6 million. With the expectation to scale up nationwide to 150,000 ha in 2010 (more than 13 times the area covered in 2009), we can expect the cost to go up proportionally.

BFP has generated keen interest among farmers, because those participating in the program have attested to the benefits they received, including access to low-cost credit in the form of inputs and mechanization services, which has led to greater productivity, production, and incomes. However, recovery rates for the input costs were surprisingly low. For the government to sustain the program, farmers need to be encouraged to pay back the money they have borrowed.

Contrary to expectation, we found that the youth have not been a strong focus of the program as it was conceived. Being relatively inexperienced, the youth are a riskier venture in terms of being able to properly manage the farm and inputs and services, and are less likely to repay the loans.

## NAFCO

MoFA set up NAFCO in 2009 to ensure the security of farmers, insulating them against losses resulting from anticipated increases in production and the consequent low output prices, and to ensure national food security.

NAFCO buys cereal from farmers during the (bumper) harvest and stores it for sale in the lean season. This allows farmers to get a certain assured minimum price for their produce. It also gives farmers an assured market for their produce and protects them from the exploitation of market operators during gluts, when supply is greater than demand. During the lean period, NAFCO put out supplies to meet the demand and prevent an escalation of prices. The consequences of NAFCO's interventions are stable prices and a ready market, thus giving the farmers the motivation they need to expand their acreage, adopt modern technologies, and increase production and productivity.

The evidence, based on a combination of price trends and market structure, conduct, and performance (SCP) analyses, shows that maize prices stabilized in 2010 following uncertainty during the preceding years.

There are lessons to be learned, although data limitations prevent our ability to distill the role of NAFCO in this stabilization in order to inform both the government and NAFCO on how to strategize to sustain or improve upon it. We found NAFCO to be financially viable under current conditions projected in the immediate future. But a decline in its revenue could pose problems and would likely force the government to spend more on its operations than intended. NAFCO should therefore carefully track its revenue, make realistic projections, and find ways to minimize variability. Focusing attention on its useful food security role of managing strategic food grain reserves could have high payoffs if suddenly faced with severe food shortages. In the long run, improving trade ties with regional markets could also help dampen any negative price effects, either from a rapid acceleration in output or from a shortfall of supply in local markets. In more isolated

markets, NAFCO should still play a critical role in procuring output where such need exists, as the evidence showed that areas where NAFCO was operating seem to have also exhibited higher yields in response.

## FUTURE BUDGETARY IMPLICATIONS

There are substantial interaction effects among the four different programs. In particular, the presence of NAFCO seems to enhance the positive effects of the other programs. By offering a fixed and assured output price so that farmers can make resource allocation decisions at the beginning of the production stage, NAFCO seems to lower farmers' uncertainty about future prices, permitting them to make higher purchases of inputs.

Thus, the roles of the various programs are inherently linked to the success of the NAFCO program by ensuring higher yields and outputs. While NAFCO could achieve its goals of stabilizing prices and producing positive economic returns, this could also result in rapidly increasing costs that would become unbearable for the government, easily making up about 90 percent of the MoFA budget by 2020 from an estimated 35 percent in 2010.

A more realistic strategy on the fiscal budget is to allow for gradual increases in total stock volume annually, which we will assume to grow at about 10 percent per year. Instead, total costs across all 4 programs will likely rise to 35 percent of MoFA's budget by 2020. The overall net worth of all four programs is GHC 403 million across 10 years if we assume open trade. However, if domestic prices fall as a result of the rapid increase in output growth, declining at about 7.8 percent per year, the net worth quickly becomes negative.

## REFERENCES

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### INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

2033 K Street, NW • Washington, DC 20006-1002 USA  
T: +1.202.862.5600 • F: +1.202.467.4439  
Skype: ifprihomeoffice • Email: ifpri@cgiar.org

### GSSP – IFPRI

Contact: Shashi Kolavalli - Senior Research Fellow and Program Coordinator  
c/o IWMI, PMB CT 112 • Cantonments, Accra, Ghana  
Martin Odei Block • CSIR Campus • Airport Residential Area  
T: +233-(0)-21-780716 • F: +233-(0)-21-784752  
gssp.ifpri.info