



Assessing the Scale and Impacts of Fertilizer Subsidy Programmes in Africa

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Summary

In 2016/17, AGRA undertook an assessment of marketing and distribution systems of fertilizer and farm inputs in 11 selected countries (Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Mali, Mozambique, Nigeria, Rwanda, Tanzania, and Uganda) resulting in country-specific recommendations for improving the impacts of fertilizer subsidy programmes (FSPs). Drawing from that assessment and other relevant studies, increased clarity emerges on the scale and impacts of FSPs in the 11 countries.

The scale of FSPs varied widely across countries, and before and after AGRA's 2016/17 review.

- Between 2007 and 2016, the average annual scale of FSPs stood at 93,000 MT with an average value of \$40 million – ranging from 187,000 MT/year to 600 MT/year, and from \$106 million/year to \$2 million/year.
- Between 2017 and 2022, the average annual scale of FSPs rose to 123,000 MT, but with a lower average annual value of \$35 million – ranging from 361,000 MT/year to 100 MT/year, and from \$72 million/year to \$2.5 million/year.

This brief is one of three policy briefs that address FSP design and delivery, scale and impacts, and policies and regulations. The three briefs are distinct yet inherently interrelated. While each brief is a stand-alone product with topic-specific findings and recommendations, due to important interrelationships in topics and findings across some of the briefs, the three documents are best read in tandem. A summary report is also available. A short list of key sources is included here. The full listing is available in the summary report.



FSP implementation contexts differ significantly across the 11 AGRA focus countries. Nevertheless, important patterns of impacts emerge. Identified impacts of FSPs and other fertilizer promotion initiatives fall into three groups: (i) intended positive impacts; (ii) unintended negative impacts; and (iii) unexpected limited, absent, or mixed impacts.

Intended positive impacts of FSPs include:

Increased farmer productivity, incomes, and livelihoods

- Increased yields of targeted crops, especially cereals, and especially maize – 14 to 278 percent increases (all focus countries)
- Higher household incomes – 8.2 to 14.7 percent increases (Malawi and Nigeria)
- Higher farm incomes – proportion of farmers earning more than \$300 from farming rose from 40 percent to 90 percent (Kenya)
- Higher household expenditures – 10 percent increase in household per capita expenditure (Mozambique)
- Higher agricultural wages – 8 percent increases in farm wages (Malawi)
- Impacts on productivity were greatest when seeds were also provided (most focus countries)

Improved fertilizer system efficiency

- Increased fertilizer consumption – 18 to 411 percent increases (all focus countries)



Greater food security

- Higher household-level food security from higher food availability within households and from higher food purchases due to higher incomes – 45 percent increase in number of households not experiencing hunger months (Kenya); 10 percent increase in available calories (Ethiopia); additional income enabled higher food purchases for women (Mali)
- Higher child weight-for-height – 2.1 standard deviation increase (Malawi)
- Lower food prices – 4 percent reduction in retail food prices (Malawi)

Higher national food production

- Higher national output of cereals, especially maize – 9 to 23 percent increases (multiple countries)

Improved agricultural sector and macroeconomic performance

- Higher total factor productivity – 29 percent increase (Rwanda)
- Higher GDP growth – 0.16 percent/year increase (Ghana)
- Faster growth in agricultural value added – 4.5 percent in 2017 to 15 percent in 2020 (Ghana)
- Lower unemployment – lower unemployment for rural skilled labor (Ghana)
- Higher agricultural exports – increased exports of maize, rice, and sorghum (Ghana)
- Lower national poverty headcount – 17.7 percent reduction (Nigeria)
- Lower national poverty rate – 2.7 percent reduction (Malawi)
- Each dollar spent on fertilizer subsidies generated US\$1.62 dollars in national welfare improvements (Malawi)

Unintended negative impacts of FSPs include:

Lower farmer productivity, incomes, and livelihoods

- Lower household purchasing power due to both reductions in food prices and increases in wages (Malawi)
- Lower purchasing power – decrease in the maize-to-fertilizer price ratio (Malawi)

Reduced fertilizer system efficiency

- Crowding-out of demand for commercial fertilizer, especially from SME agrodealers – an additional 100 kg of subsidized fertilizer crowded out 19–51 kg of commercial fertilizer (Kenya and Nigeria); 77 percent and 88 percent decline in volumes handled by distributors and agrodealers, respectively (Kenya)
- One third of fertilizer intended for FSPs diverted, leaked, and resold commercially (Malawi)

Lower food security

- Lower food security for women and children due to lower dietary diversity linked to reduced crop diversity from mono-cropping (Burkina Faso, Mali, Tanzania)
- Compromised nutrition security by reducing cultivation of legumes and vegetables (Kenya)

Reduced agricultural sector and macroeconomic performance

- FSP domination of public agricultural budgets – 85 percent (Ghana), 71 percent (Malawi)
- Unplanned overspending on FSPs – between 148 and 219 percent (Ghana), between 28 and 60 percent (Malawi)
- Increase in public debt – 2.8–3.5 percent increase (Ghana)

Distorted political economy

- Rampant diversion and leakage of subsidized fertilizer
- Significant and widespread elite capture of fertilizer distribution
- Frequent political manipulation of fertilizer distribution

A background image showing a close-up of several ripe, red tomatoes in a woven basket. The tomatoes are in sharp focus in the foreground, while others in the background are slightly blurred. The lighting is natural, highlighting the texture of the tomato skins.

Unexpected limited, absent, or mixed impacts of FSPs include:

- No clear increase in cropped areas since subsidies promote intensification which may be accompanied by reductions in land devoted to food crops
- Little correlation between program fiscal costs and maize harvest size
- No impact on natural resource management
- No significant effects on farmgate food prices
- No significant effects on labor market participation
- No clear impacts on food imports

This wide-ranging body of evidence from multiple contexts indicates that FSPs in Africa have generated several positive impacts, notably by bolstering agricultural productivity, augmenting farmers' incomes, and fortifying food security. These impacts have come at high cost and would appear to be fiscally unsustainable. They also crowd out investment in other areas critical to agricultural development (e.g., agricultural research and extension). These fiscal challenges alongside the unanticipated consequences stemming from a lack of adherence to the principles of "smart" subsidy design underscore the imperative for recalibration. Among these unintended outcomes are disruptions in commercial sales, logistical inefficiencies in distribution, market distortions, and increases in public debt – all of which necessitate a strategic shift in approach. To effectively address these challenges, "smart" fertilizer subsidy programs must not only stimulate new demand for fertilizers but also nurture existing supply chains to promote sustainability and market viability.

In most countries, there would appear to be significant potential for expanding and deepening fertilizer systems while reducing or repurposing fertilizer subsidies. Successful innovations center on: **(i)** leveraging input vouchers for enhanced access to financing and credit to acquire fertilizer and other improved inputs (as in Ethiopia); and **(ii)** financial and trading incentives that boost local production, blending, and distribution of fertilizer, thereby stabilizing supply and reducing cost (as in Nigeria). Realizing such potential requires strong and transparent public sector leadership alongside sustained engagement and support to the private sector and research and extension systems, aiming to overcome structural and regulatory impediments to scaled private investment in fertilizer systems.

Background

The implementation of fertilizer subsidy programs (FSPs) in Africa between 2008 and 2022 has been a subject of extensive analysis and debate due to their significant implications for agricultural development, food security, and poverty alleviation across the continent. As countries grapple with the challenge of increasing agricultural productivity to boost incomes and meet growing food demand amidst resource constraints and climate variability, fertilizer subsidies have emerged as a key policy instrument aimed at enhancing smallholder farmers' access to essential inputs. Understanding the scale and impact of these subsidy programs is crucial for policymakers, development practitioners, and researchers to assess their effectiveness, identify best practices, and inform evidence-based policy decisions aimed at promoting sustainable agricultural development and improving livelihoods in Africa.

In 2016/17, AGRA undertook an assessment of marketing and distribution systems of fertilizer and farm inputs in 11 selected countries (Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Mali, Mozambique, Nigeria, Rwanda, Tanzania, and Uganda). Drawing from that assessment and other relevant studies, this brief: **(i)** reviews the scale of FSPs in the 11 countries between 2007 and 2022; and **(ii)** examines the impacts of these FSPs in the 11 countries.

FSP Scales

It is instructive to consider the scale of FSPs before and after AGRA's 2016/17 review – i.e., from 2007 to 2016 and from 2017 to 2022. The scale of FSPs varied widely across 8 AGRA focus countries with such programmes in place, and for which data are available (Table 1).² Between 2007 and 2016, the average annual scale of FSPs across the 8 countries stood at 93,000 MT with an average value of \$40 million. Malawi's FSP averaging 187,000 MT/year valued at \$109 million/year was the largest; Mozambique's FSP averaged 600 MT/year valued at \$2 million/year was the smallest. Between 2017 and 2022, the average annual scale of FSPs rose to 123,000 MT, but with a lower average annual value of \$35 million. Mali's FSP had the largest average annual volume at 361,000 MT/year, but Kenya's FSP averaging 194,000 MT/year had the highest annual average value of \$72 million/year. Mozambique's FSP averaged 900 MT/year valued at \$2.5 million/year was the smallest. Between the two periods, the average annual values of FSPs in Kenya, Mali, Mozambique, Rwanda, and Tanzania grew; those in Burkina Faso, Ghana, and Mali fell. Distributed volumes increased in all countries except Burkina Faso and Ghana.

Table 1: Average annual FSP volumes (mt) – 2007–2016 vs 2017–2022

Period	Burkina Faso	Ghana	Kenya	Malawi	Mali	Mozambique	Rwanda	Tanzania	Average
2007–2016	31	123	80	187	181	0.6	27	113	93
2017–2022	21	108	194	--	361	0.9	54	--	123
Change	-11	-15	115	--	180	0.3	26	--	49

Note: Volume data for 2017–2022 are not available for Malawi and Tanzania. Sources: Authors, AGRA-HAPA, 2022; Jayne et al, 2018

The scale of FSPs also varied significantly before and after AGRA's 2016 review (Figure 1, panel A). On average, public expenditure on agriculture in the 8 countries increased by 35 percent between 2007–2016 and 2017–2022, falling only in Malawi and Mozambique (Figure 1, panel A). Average spending on FSPs fell by 12 percent between the two periods, increasing only in Mali, Mozambique, and Rwanda (Figure 1, panel B). Spending on FSPs averaged 26 percent of public expenditure on agriculture in

² Ethiopia and Nigeria did not have FSPs in place during the bulk of the 2007–2022 period. Relevant data for Uganda are not available.

2007–2016 and 14 percent in 2017–2022, with a high of 48 percent in Ghana in 2007–2016 and 27 percent in Tanzania in 2017–2022 (Figure 2, panel A). Across the two periods, FSP shares fell in all countries except for Mali, Mozambique, and Rwanda (Figure 2, panel B). These averages mask the fact that in given countries, FSP shares varied significantly from year to year, sometimes absorbing significant shares of agriculture sector spending. For instance, in 2020, fertilizer subsidies constituted 85 percent of Ghana’s Programme for Food and Jobs (PFJ), the government’s flagship agricultural development initiative. In 2022, FSP-related expenditures stood at 60 percent of Malawi’s total public spending on the agricultural sector.

Figure 1: Average annual public expenditures on agriculture [A] and average annual FSP expenditures levels [B] in selected countries in 2007–2016 and 2017–2022

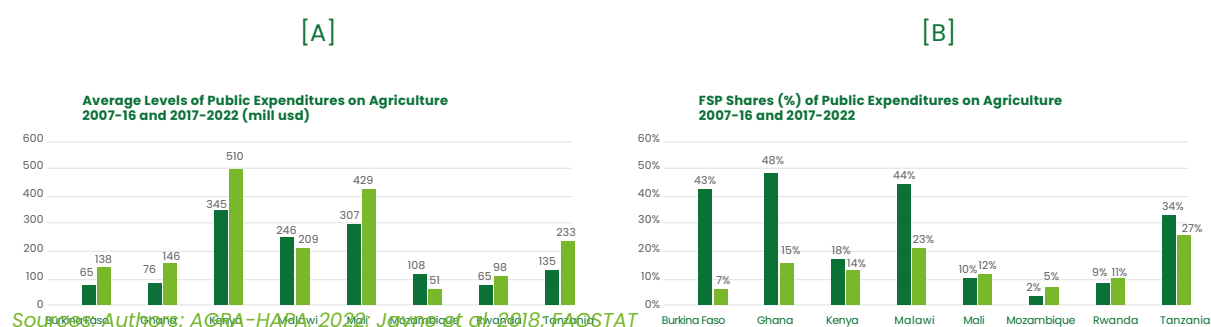
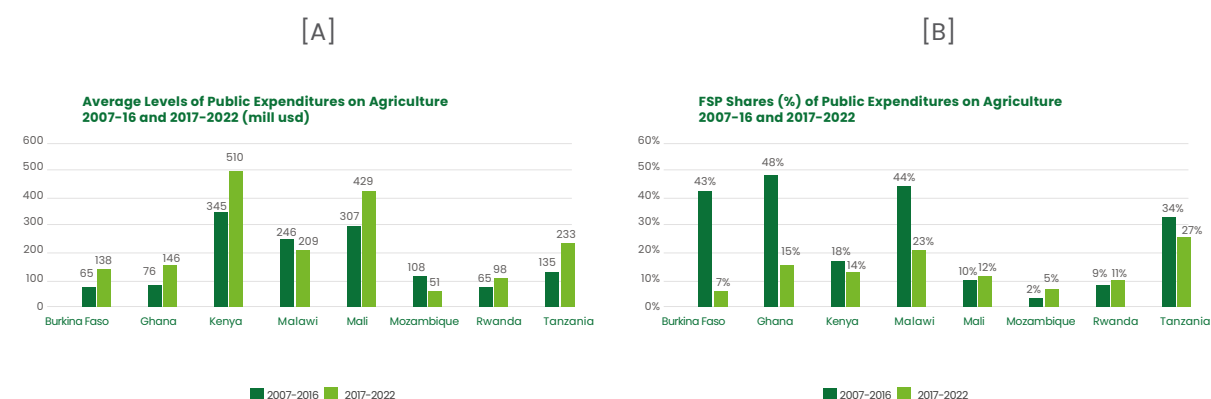


Figure 2: Levels [A] and changes [B] of FSP shares of public expenditures on in selected countries in 2007–2016 and 2017–2022



Sources: Authors; AGRA-HAPA, 2022; Jayne et al, 2018; FAOSTAT

Two countries – Ethiopia and Nigeria – represent special cases. In Ethiopia, while there is no official subsidy program, fertilizer promotion has involved large fiscal costs. Ethiopia’s input voucher programme is not a subsidy program but rather a farm input credit program, where farmers leverage vouchers to access credit from microfinance institutions and cooperative unions for purchases fertilizers, seeds and agrochemicals based on recommendations drawn from a comprehensive detailed soil map providing up-to-date soil fertility data. Between 2007 and 2016, Ethiopia’s annual expenditure on an annual average of 558,000 MT of fertilizers averaged \$53 million/year. In Nigeria, there has been no direct subsidy of fertilizer use since 2015. Rather, using subsidized locally sourced urea and limestone granules, the program aims to enhance availability and affordability of fertilizers through financial and trading incentives that boost local production of various blends of NPK fertilizer at a reduced cost. Fiscal costs have been significant. Between 2007 and 2016, Nigeria’s annual expenditure toward production and distribution of an average of 258,000 MT of fertilizers averaged \$89 million/year.



FSP Impacts

The economic efficiency of fertilizer use should be the overarching goal of FSPs and other fertilizer promotion initiatives, but objectives such as poverty reduction or food security may be relevant where fertilizer subsidies cost-effectively address these problems. Stated FSP objectives in AGRA's 11 focus countries fall into 6 broad categories: **(i)** increasing farmer capacity by boosting productivity, incomes, and livelihoods; **(ii)** enhancing food security and food self-sufficiency (and reducing import dependence); **(iii)** expanding access to fertilizer and enhancing fertilizer system efficiency; **(iv)** improving output market performance (including lowering prices); **(v)** consolidating land; and **(vi)** contributing to social safety nets. The bulk of available empirical evidence relates to three of these objectives: boosting farmer productivity, incomes, and livelihoods; enhancing food security; and enhancing fertilizer system efficiency.

Given their scale, FSPs have the potential to significantly impact the agricultural sector and wider macroeconomic conditions, including aggregate income growth, employment, exports and imports, and public debt and finances. The scale of most FSPs generates considerable political interest, raising important political economy issues and challenges. Impacts of FSPs on these two issues are therefore also considered.

FSP implementation contexts differ significantly across the 11 countries. Nevertheless, important patterns emerge. Identified impacts of FSPs (and other fertilizer promotion initiatives in Ethiopia and Nigeria) fall into three groups: **(i)** intended positive impacts (Table 1); **(ii)** unintended negative impacts (Table 2); and **(iii)** unexpected limited, absent, or mixed impacts (Table 3).³

3 A full listing of sources for each of the reported impacts in Tables 2-4 is provided in the summary report.



Intended positive impacts of FSPs include:

Increased farmer productivity, incomes, and livelihoods

- Increased yields of targeted crops, especially cereals, and especially maize
- Higher household incomes
- Higher agricultural wages
- Impacts on productivity were greatest when seeds were also provided

Improved fertilizer system efficiency

- Increased fertilizer consumption

Greater food security

- Higher household-level food security from higher food availability within households and from higher food purchases due to higher incomes
- Higher child weight-for-height
- Lower food prices

Higher national food production

- Higher national output of cereals, especially maize

Improved agricultural sector and macroeconomic performance

- Higher total factor productivity
- Higher GDP growth
- Faster growth in agricultural value added
- Lower unemployment
- Agricultural exports
- Lower national poverty headcount
- Lower national poverty rate
- Each dollar spent on fertilizer subsidies generated US\$1.62 dollars in national welfare improvements

Unintended negative impacts of FSPs include:

Lower farmer productivity, incomes, and livelihoods

- Lower household purchasing power due to a lower maize-to-fertilizer price ration from reductions in food prices and increases in wages

Reduced fertilizer system efficiency

- Crowding-out of demand for commercial fertilizer, especially from SME agrodealers

Lower food security

- Lower food security due to lower dietary diversity linked to reduced crop diversity from mono-cropping
- Compromised nutrition security by reducing cultivation of other crops such as legumes and vegetables

Reduced agricultural sector and macroeconomic performance

- FSP domination of public agricultural budgets
- Unplanned overspending on FSPs

Distorted political economy

- Rampant diversion and leakage of subsidized fertilizer
- Significant and widespread elite capture of fertilizer distribution
- Frequent political manipulation of fertilizer distribution

Unexpected limited, absent, or mixed impacts of FSPs include:

- No clear increase in cropped areas since subsidies promote intensification which may be accompanied by reductions in land devoted to food crops
- No impact on natural resource management
- No significant effects on farmgate food prices
- No significant effects on labor market participation
- No clear impacts on food imports

While most FSPs in Africa have explicit durations and ending dates, many expiring programmes continue in new initiatives that extend well beyond the original ending dates. Further, there is little evidence of investments to ensure sustainability of outcomes beyond the ending dates. Objectively verifiable indicators to inform readiness for graduation or exit are seldom specified or applied. The sequence of severe economic disruptions between 2020 and 2022 due to COVID-19 and the war in Ukraine thus led to national crisis response strategies featuring enhanced reliance on FSPs but without adequate attention to graduation and exit, further accentuating financial burdens on governments. Where FSPs have been deliberately cut or phased out (typically due to fiscal constraints), large shares of former beneficiaries have discontinued fertilizer purchases, suggesting failures to adequately prepare them to transition to full market exposure.

Table 2: Intended positive impacts of FSPs

Country	Objectives	Impacts
Burkina Faso	Productivity, incomes, livelihoods	Fertilizer consumption (kg/ha) increased by 27 percent between 2012 and 2020 Yields (kg/ha) of maize, rice, millet and red sorghum increased by 42 percent, 30 percent, 21 percent and 14 percent, respectively, between 2014 and 2017 Cereal production increased by 281,000 MTs in the 2016–17 season
	Food security	10 percent more calories available to participants
Ethiopia*	Productivity, incomes, livelihoods	Fertilizer consumption (kg/ha) increased by 18 percent between 2012 and 2020 Yield (kg/ha) of wheat and teff increased by 100 percent and 35 percent, respectively, between 2010 and 2020 Yield of maize increased by 750 kg/ha (21 percent) 69.1 percent of maize plots in Northwestern Ethiopia apply fertilizer
	Food security	10 percent more calories available to participants
Ghana	Productivity, incomes, livelihoods	Fertilizer consumption (kg/ha) increased by 90 percent between 2012 and 2020 Maize yield increased by 714 kg/ha for those farmers receiving subsidy compared to those who did not during the 2018 production season Overall cereal yield increased by 24.5 percent between 2012/12 and 2016/17 Adoption of sustainable intensification practices increased by 62 percent
	Macroeconomic conditions	0.16 percent/year increase in GDP growth 2.8–3.5 percent increase in government deficit Decline in rural unemployment rate
Kenya	Productivity, incomes, livelihoods	Fertilizer consumption (kg/ha) increased by 38 percent between 2012 and 2020 Subsidy significantly increased maize production by an average of 201–471kg/acre between 2006/07 and 2009/10 Proportion of farmers earning above US\$300 from their farms from 40 percent to 90 percent
	Food security	Number of households reporting no hunger months throughout the year increased from 38 percent to 55 percent



Country	Objectives	Impacts
Malawi	Productivity, incomes, livelihoods	Fertilizer consumption (kg/ha) increased by 332 percent between 2012 and 2020 Maize production increased by 165 to 261 kg per 100 kg of fertilizer Beneficiaries realized an increased per capita income of 8.2 percent Average farm wages increased by up to 8 percent
	National food production	National maize production increased by 9 to 23 percent
	Macroeconomic conditions	The national poverty headcount rate fell by up to 2.7 percent Each dollar spent on fertilizer subsidies generated US\$1.62 dollars in national welfare improvements
	Food security	Child weight-for-height increased by 2.1 standard deviations overall, and 3.1 (1.5) for male (female) children, on average Up to 4 percent reduction in retail food prices
Mali	Productivity, incomes, livelihoods	Fertilizer consumption (kg/ha) increased by 27 percent between 2012 and 2020 Maize yield increased by 38 percent from 1.97 to 2.73 mt/ha (2008/09 to 2016/17) and rice yield by 58.3 percent from 2.10 to 3.33Mt/ha (2010/2011 – 2016/17)
	Food security	Additional income from target crops enabled increased purchases of nutritious food and improved food nutrition security for women
Mozambique	Productivity, incomes, livelihoods	Fertilizer consumption (kg/ha) increased by 100 percent between 2012 and 2020 Average maize yield increased from 0.82 t/ha to an average of 2.6 t/ha Farmers receiving the subsidy produced 21.6 percent more output than non-recipient farmers Household daily income increased by 14.7 percent Household per capita expenditure increased by 10 percent
Nigeria*	Productivity, incomes, livelihoods	Crop yields increased by 38 percent Crop output increased by 47 percent Fertilizer purchases increased by 16 percent Fertilizer consumption (kg/ha) increased by 126 percent between 2012 and 2020 Poverty headcount in intervention areas reduced by 17.7 percent
Rwanda	Productivity, incomes, livelihoods	Fertilizer consumption (kg/ha) increased by 411 percent between 2012 and 2020 Total factor productivity increased by up to 29 percent between 2005 and 2015 Subsidy beneficiaries increased maize yields from 0.73 MT/ha in 2007 to 2.76 MT/ha in 2012, and wheat from 1.30 MT/ha to 2.17 MT/ha
Tanzania	Productivity, incomes, livelihoods	Fertilizer consumption (kg/ha) increased by 89 percent between 2012 and 2020 Maize output increased by up to 12bags/ha and rice by up to 20bgs/Ha between 2009/2010 and 2011/2012 Maize yield increased from 0.9 to 2.5 mt/ha; and rice from 2 to 3 mt/ha between 2009/2010 and 2011/2012

* Ethiopia: Input voucher programme, rather than direct fertilizer subsidies; Nigeria: Subsidized local blending and production, rather than direct fertilizer subsidies

Table 3: Unintended negative impacts of FSPs

Country	Objectives	Impact
Burkina Faso	Food security	Reduced nutrition security of women and children due to reduced crop diversity
Ethiopia	Food security	Participation associated with 0.4 fewer months of food security over 2 years
Ghana	Fertilizer system efficiency	Political manipulation: programme distorted by presidential election campaigning
Kenya	Food security	Compromised nutrition security by reducing cultivation of other crops like cabbage, beans, groundnuts, soybeans and potatoes.
	Fertilizer system efficiency	Crowding out: Additional 100 kg of subsidized fertilizer crowded out 42–51 kg of commercial fertilizer Crowding out: 77 percent and 88 percent decline in volumes handles by distributors and agrodealers, respectively Political manipulation: programme distorted by presidential election campaigning Elite capture: communities with resident elected leaders or close to leaders' hometowns received more subsidized fertilizer on average
Malawi	Fertilizer system efficiency	Crowding out: an additional 100 kg of subsidized fertilizer crowded out 18 kg of commercial fertilizer Diversion and leakage: one third of fertilizer intended for FSPs was reported to be diverted before reaching intended beneficiaries and resold as commercial fertilizer at or near commercial prices
	Productivity, incomes, livelihoods	Purchasing power: decrease in the maize-to-wage price ratio due to both reductions in maize prices and increases in wages
Mali	Food security	Reduced nutrition security due to reduced crop diversity
Nigeria	Fertilizer system efficiency	Crowding out: an additional 100 kg of subsidized fertilizer crowded out 19–35 kg of commercial fertilizer Elite capture: communities with resident elected leaders or close to leaders' hometowns received more subsidized fertilizer on average
Tanzania	Food security	Negative impacts on nutrition security due to mono-cropping, reduced crop diversity (dietary diversity) and inability to sell extra output
	Fertilizer system efficiency	Elite capture: 60 percent of households receiving input vouchers included a village official. Elite capture: households with elected officials and voucher committee members were four times more likely to receive input vouchers than others

Table 4: Unexpected limited, absent, or mixed impacts of FSPs

Country	Objectives	Impact
Ethiopia	Productivity, incomes, livelihoods	Labor market participation: no effect
Kenya	Productivity, incomes, livelihoods	Cropped area: no effect Farm income: negligible impacts on net crop income overall but increased net crop income among the poor
Malawi	Productivity, incomes, livelihoods	Rural labor demand: negligible increases Cropped area: subsidy incentivizes maize intensification and a reduction in the maize share of total area planted Maize harvest size: little correlation with program fiscal costs
Nigeria	Productivity, incomes, livelihoods	Crop prices: no statistically significant effect on local maize and rice prices
Multiple	Productivity, incomes, livelihoods	Natural resource management. No no statistically significant increase in improved soil fertility management practices or broader natural resource management practices



Conclusions

This wide-ranging body of evidence from multiple contexts indicates that FSPs in Africa have generated several positive impacts, notably by bolstering agricultural productivity, augmenting farmers' incomes, and fortifying food security. These impacts have come at high costs and would appear to be fiscally unsustainable. They also crowd out investment in other areas critical to agricultural development (e.g., agricultural research and extension). These fiscal challenges alongside the unanticipated consequences stemming from a lack of adherence to the principles of "smart" subsidy design underscore the imperative for recalibration.⁴ Among these unintended outcomes are disruptions in commercial sales, logistical inefficiencies in distribution, market distortions, and increased in public debt – all of which necessitate a strategic shift in approach. To effectively address these challenges, "smart" fertilizer subsidy programs must not only stimulate new demand for fertilizers but also nurture existing supply chains to promote sustainability and market viability. The cultivation of greater competition within distribution channels can engender innovation, enhance cost-effectiveness, and amplify benefits for both farmers and the broader agricultural sector. Central to this recalibration is precise targeting of beneficiaries, ensuring equitable access to subsidized inputs while mitigating the risk of diversion or misuse. An emphasis on cost-efficiency and transparency, underpinned by stringent monitoring mechanisms, is paramount to safeguarding against financial improprieties and optimizing resource allocation. The overarching goal is to foster a transition towards self-sufficiency and market-led agricultural development, wherein subsidy programs serve as catalysts for progress rather than long-term dependencies. Through steadfast adherence to these principles, fertilizer subsidy initiatives can not only realize their intended objectives but also propel sustainable growth, resilience, and prosperity across Africa's agricultural landscape.

In most countries, there would appear to be significant potential for expanding and deepening fertilizer systems while reducing or repurposing fertilizer subsidies. Successful innovations center on: **(i)** leveraging input vouchers for enhanced access to financing and credit to acquire fertilizer and other improved inputs (as in Ethiopia); and **(ii)** financial and trading incentives that boost local production, blending, and distribution of fertilizer, thereby stabilizing supply and reducing cost (as in Nigeria). Realizing such potential requires strong and transparent public sector leadership alongside sustained engagement and support to the private sector and research and extension systems, aiming to overcome structural and regulatory impediments to scaled private investment in fertilizer systems.

⁴ See the companion brief on improving design and delivery of FSPs.

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5 A full listing of references is provided in the summary report.





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