



Review

Review: Taking stock of Africa's second-generation agricultural input subsidy programs



Thomas S. Jayne^a, Nicole M. Mason^a, William J. Burke^{b,*}, Joshua Ariga^c

^a Department of Agricultural, Food, and Resource Economics, Michigan State University, 446 W. Circle Dr., Rm. 202, East Lansing, MI 48824, USA

^b Agricultural and Food Policy Consulting, 3016 Saint Paul St., 3rd floor, Baltimore, MD 21218, USA

^c International Fertilizer Development Center, Reservation Road, Complex F, Muscle Shoals, AL 35662, USA

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ABSTRACT

Input subsidy programs (ISPs) remain one of the most contentiously debated development issues in sub-Saharan Africa (SSA). After ISPs were phased out during the 1980s and 1990s, the landscape has changed profoundly since the early 2000s. By 2010, at least 10 African governments initiated a new wave of subsidy programs that were designed to overcome past performance challenges. This study provides the most comprehensive review of recent evidence to date regarding the performance of these second generation ISPs, synthesizing nearly 80 ISP-related studies from seven countries (Ghana, Nigeria, Kenya, Tanzania, Malawi, Zambia, and Ethiopia). We specifically evaluate ISP impacts on total fertilizer use, food production, commercial input distribution systems, food prices, wages, and poverty. We also consider measures that could enable ISPs to more cost-effectively achieve their objectives. We find that ISPs can quickly raise national food production, and that receiving subsidized inputs raises beneficiary households' grain yields and production levels at least in the short-term. However, the overall production and welfare effects of subsidy programs tend to be smaller than expected. Two characteristics of program implementation consistently mitigate the intended effects of ISPs: (1) subsidy programs partially crowd out commercial fertilizer demand due to difficulties associated with targeting and sale of inputs by program implementers, and (2) lower than expected crop yield response to fertilizer on smallholder-managed fields. If these challenges could be addressed, ISPs could more effectively mitigate the concurrent challenges of rapid population growth and climate change in SSA.

1. Introduction

Input subsidy programs (ISPs) are among the most contentiously debated of development issues in sub-Saharan Africa (SSA).¹ These government programs, through which farmers receive fertilizer (and in some cases seed) at below-market prices, were largely phased out during the 1990s because the emerging consensus was that they only weakly contributed to agricultural productivity growth, food security, and poverty reduction goals, imposed unsustainable burdens on national treasuries, and hindered the development of private input distribution systems (Kherallah et al., 2002; Morris et al., 2007; World Bank, 2008).

However, starting in the early 2000s, the landscape changed quickly and profoundly. Shortly after African governments committed to raise

expenditures on agriculture under the 2003 Maputo Declaration, several countries (re-) introduced ISPs. Skepticism based on the past performance of ISPs was countered with arguments that a new genre of “smart” subsidies could be designed to correct for past shortcomings with careful targeting and the involvement of the private sector in the programs (Morris et al., 2007).² These arguments carried the day and by 2010 at least 10 African countries accounting for more than half of the region's population had adopted “second-generation” ISPs designed to raise agricultural productivity in a “market smart” way (Jayne & Rashid, 2013). In recent years, total expenditures on ISPs by these 10 countries have ranged from approximately 600 million to 1 billion US dollars per year and accounted for roughly 14–26% of their combined annual public expenditures on agriculture (Table 1).³ Large-scale ISPs remain the centerpiece of many African governments' agricultural

* Corresponding author.

E-mail addresses: jayne@msu.edu (T.S. Jayne), mason@msu.edu (N.M. Mason), burkewj2@gmail.com (W.J. Burke), jariga@ifdc.org (J. Ariga).

¹ Hereafter Africa for simplicity.

² The main criteria for smart ISPs are described in Section 3.

³ Due to the omission of state-level subsidies in Nigeria from these figures (see Table 1 note), they likely under-estimate, potentially by a large degree, total public expenditures on ISPs in SSA. Anecdotal evidence suggests that Nigerian federal and state subsidies alone may total 800 million US dollars per year.

Table 1
ISP and broader agricultural sector spending, 2011–2014.

Country	Year	ISP cost (million US\$)		Thousands of MT of ISP fertilizer distributed (C)	Public expenditure on agriculture (million US\$) (D)	ISP cost as% share of public agricultural spending [= (B/D) * 100] (E)
		Official source (A)	Computed using secondary data (B) ^a			
<i>Universal subsidy</i>						
Mali	2011	na	44	173	213	20.5
	2012	na	17	65	195	8.6
	2013	na	20	75	204	9.9
	2014	na	18	84	199	9.0
Burkina Faso	2011	na	25	25	291	8.5
	2012	na	35	36	310	11.2
	2013	na	47	51	351	13.4
Ghana ^c	2011	53	63	176	148	42.4
	2012	64	75	174	141	53.2
	2013	33	47	167	149	31.6
	2014	0	0	0	109	0.0
Senegal	2011	na	47	54	182	25.8
	2012	na	37	41	374	9.9
	2013	na	30	36	368	8.2
	2014	na	36	43	390	9.2
Nigeria ^d	2011	na	81	264	817	9.9
	2012	na	92	249	788	11.6
	2013	na	96	264	802	12.0
	2014	na	86	256	795	10.8
<i>Targeted subsidy programs</i>						
Kenya	2011	15	40	57	356	11.2
	2012	na	64	68	386	16.7
	2013	na	70	81	444	15.7
	2014	na	77	112	479	16.1
Malawi	2011	127	106	149	345	30.8
	2012	151	77	177	355	21.6
	2013	207	95	213	350	27.1
	2014	168	157	208	352	44.5
Tanzania	2011	94	40	110	349	11.5
	2012	76	53	126	326	16.4
	2013	na	46	105	338	13.6
	2014	na	43	112	332	12.8
Zambia	2011	184	120	182	613	19.6
	2012	166	134	184	325	41.3
	2013	113	84	188	376	22.3
	2014	na	81	208	407	19.9
<i>Ethiopia's program (not considered a "subsidy" program by the Ethiopian government)^b</i>						
	2011	na	289 (62)	551	530	54.5 (11.6)
	2012	na	449 (60)	633	771	58.2 (7.8)
	2013	na	289 (43)	449	850	34.0 (5.0)
	2014	na	307 (48)	597	937	32.8 (5.1)
<i>Total across 10 countries</i>						
	2011	na	854 (627)	1741	3844	22.2 (16.3)
	2012	na	1033 (644)	1753	3971	26.0 (16.2)
	2013	na	825 (578)	1629	4232	19.5 (13.7)
	2014	na	853 (594)	1671	4358	19.6 (13.6)

Source: Official source ISP costs (column A) and MT of program fertilizer distributed (column C) data are from the ministries of agriculture and/or finance in the respective countries. Public expenditure on agriculture data (column D) are from the "Statistics on Public Expenditures for Economic Development" (SPEED) database (International Food Policy Research Institute, 2017) and the Regional Strategic Analysis and Knowledge Support System (ReSAKKS). Fertilizer prices used in the calculations for column B (see notes) are from the Africa Fertilizer Information Portal (http://africafertilizer.org/prices_national.html) for all countries except Ethiopia. Ethiopia prices are from the Ethiopia Agricultural Transformation Authority (EATA).

^a Computed costs to government are (column C × open market fertilizer price × subsidy rate) plus, following Jayne and Rashid (2013), a 12% markup to account for administrative and other programmatic costs. The annual median of monthly open market urea prices is used as a proxy for fertilizer price.

^b Ethiopia market prices from EATA are substantially lower than market prices elsewhere in the region and appear not to be indicative of the CIF price. We therefore also do the Ethiopia calculations using open market urea prices in Kenya as a proxy. Ethiopia figures in parentheses use the Ethiopia open market price and the figures not in parentheses use the Kenya price.

^c Beginning in 2013 Ghana's program was aimed at targeting households with 2 acres dedicated to producing staples, but evidence suggests this policy had little impact on actual targeting (Houssou and Andam Asante-Addo, 2017).

^d Nigeria figures reflect federal-level subsidies only; states often add additional subsidies but insufficient data are available to account for state-level subsidies in this table. The Nigeria figures are therefore a lower bound. na = Information not available. The authors thank Shahidur Rashid and Asfaw Lemma for their support in preparing parts of this table. Comprehensive data for more recent years are not yet available.

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