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*A lactating sow in Uganda  
| Photo credit: ILRI/Brian Kawuma |*

# EPRC Policy Brief

## Is VAT on Agricultural Inputs Cost Effective?

### Executive Statement

This policy brief summarizes the results of preliminary analysis to quantify the potential farm-level and aggregate impacts of the proposed imposition of 18% value added tax (VAT) on key agricultural inputs in Uganda. Focusing on the maize sub-sector and considering the impact of VAT imposition on maize seed and fertilizer, the results reveal that the potential costs of the proposed imposition of VAT on agricultural inputs appear to far outweigh the potential benefits. The estimated total tax revenues amount to \$10.29 million compared to estimated total losses to maize farmers of \$20.93 million as a result of VAT-induced higher costs of maize seed and fertilizer – implying a benefit-cost ratio (BCR) of 0.49. This ratio of benefits to costs is well below acceptable levels; and if other commodities, inputs, and impact channels were considered (e.g., the “output price effect”), the BCR would be even more negative. In conclusion, the proposed measure undermines basic agricultural and broader economic growth and development objectives; and the ratio of benefits to costs renders the proposed measure unjustifiable based on economic arguments. Therefore, the proposed measure should be reconsidered; and alternative sources of revenues sought.

### Background

In Uganda there is pressure to reduce the gap between government expenditure and revenue collection due to increased government spending and a decline in donor aid. To reduce the gap, the Government is removing tax exemptions in order to increase the collection of revenue through taxes. Like most governments around the world, the Ugandan Government uses value added tax (VAT) as an effective instrument for revenue mobilization. This is because VAT is broad-based and improves tax compliance, enforcement and revenue collection.



*Aquaculture feed bag | photo credit: ILRI/Jo Cadilhon |*

In the past, Government maintained a zero-rated tax on agricultural inputs such as certified seed, and fertilizer with the ultimate goal of promoting the widespread adoption and use of yield enhancing inputs for increased agricultural productivity and food security. Consequently, agricultural input supply firms made no VAT charges on farmers' purchases of these inputs. Following the budget speech of 2014/2015 Government removed the zero rating on the supply of these agricultural inputs and introduced the standard taxable rate of 18% VAT. For example a 50kg bag of NPK fertilizer that initially cost Ugx 125,000 would cost Ugx 147,500 after tax.



Field visits to Isingiro District, Uganda on 1st May 2019 by the team implementing the Program for Climate-Smart Livestock systems (PCSL) - | photo credit: ILRI/ Sonja Leitner |

## Objectives and Methodology

This brief assesses the possible effects of imposing the 18% VAT on fertilizer and maize seed - by examining its potential impacts on farm income. In addition, further analysis is undertaken to show the aggregate outcome; focusing on the relative sizes of potential tax revenues generated from the imposition of VAT on key agricultural inputs versus potential income losses to farmers using a BCR analysis. Computation of farm-level impacts is based on simple maize enterprise budgets. The aggregate impacts are extrapolated directly from

the farm-level results. The resulting estimates of farm-level and aggregate impacts should therefore be interpreted as indicative, not definitive. The maize enterprise is used because maize is grown as a cash and staple food crop by about three million farming households.

## Data Sources and Assumptions

No new surveys were undertaken. Rather, several sources of published data were accessed to develop the required data and related information base. Table 1 below summarizes the data sources and key assumptions driving the analysis.



BecA-ILRI Hub Research associate Pauline Asami (left), demonstrating to Helen Butungi of ICIPE (Uganda) during the annual Advanced Genomics and Bioinformatics workshop in Nairobi, August 2016 | photo: BecA-ILRI Hub/ Sylvia Muthoni |

**Table 1: Data sources and key assumptions**

Analytical Area	Source	Key Adjustments	Key Assumption(s)
Smallholder farmer production budgets for maize and beans	Sserunkuuma, D. 2005. "Local and Regional Food Procurement in Uganda: An Analytical Review." A report prepared for the World Food Program.	<ul style="list-style-type: none"> <li>Input and output prices updated to 2014 levels</li> </ul>	<ul style="list-style-type: none"> <li>Input and output quantity relationships assumed to be the same in 2014 as in 2005</li> <li>Labor use rates assumed to be the same in 2014 as in 2005</li> </ul>
Maize and beans production levels	FAOSTAT		<ul style="list-style-type: none"> <li>FAO figures are consistent with official production estimates</li> </ul>
Fertilizer sales	The Uganda Bureau of Statistics, 2013. 2013 Statistical Abstract	National average price of DAP and Nitrogen fertilizers	<ul style="list-style-type: none"> <li>Officially recorded fertilizer imports for 2012 are expected sales in 2013</li> </ul>
Fertilizer prices	Fertilizer and seed companies in Uganda	Compound and Nitrogen fertilizers substitutes	<ul style="list-style-type: none"> <li>Current market prices will increase with full effect of VAT</li> </ul>
Maize seed sales	Rodeyns , N. 2014. Seed industry in Uganda, Trends, Opportunities and Challenges, with a personal touch; success, past, future, challenges, "" Presented at The "10K Club" Seed Convening held at Lake Victoria Serena Resort, Kampala, Uganda, July 8 -11, 2014.	Seed of hybrid and open-pollinated varieties substitutes	<ul style="list-style-type: none"> <li>Estimates of seed industry production for 2013 is equal to sales</li> </ul>
Maize seed prices	Fertilizer and seed companies in Uganda	National average price of hybrid and opv maize seed	Current market prices will increase with full effect of VAT
Impact of VAT on Agricultural Inputs	Tegemeo Institute Study (2013). "Potential effects of the imposition of value added tax on agricultural inputs and sifted maize meal"		
Analysis of income along maize Value Chain	Mbowa Swaibu et al (September 2013). Improving Youth Employment Opportunities along the Maize Value Chain. EPRC Policy Brief, Issue# 35.		

## Findings

Figure 1: The farm-levels impact of the proposed value added tax on agricultural inputs are potentially large - the case of maize

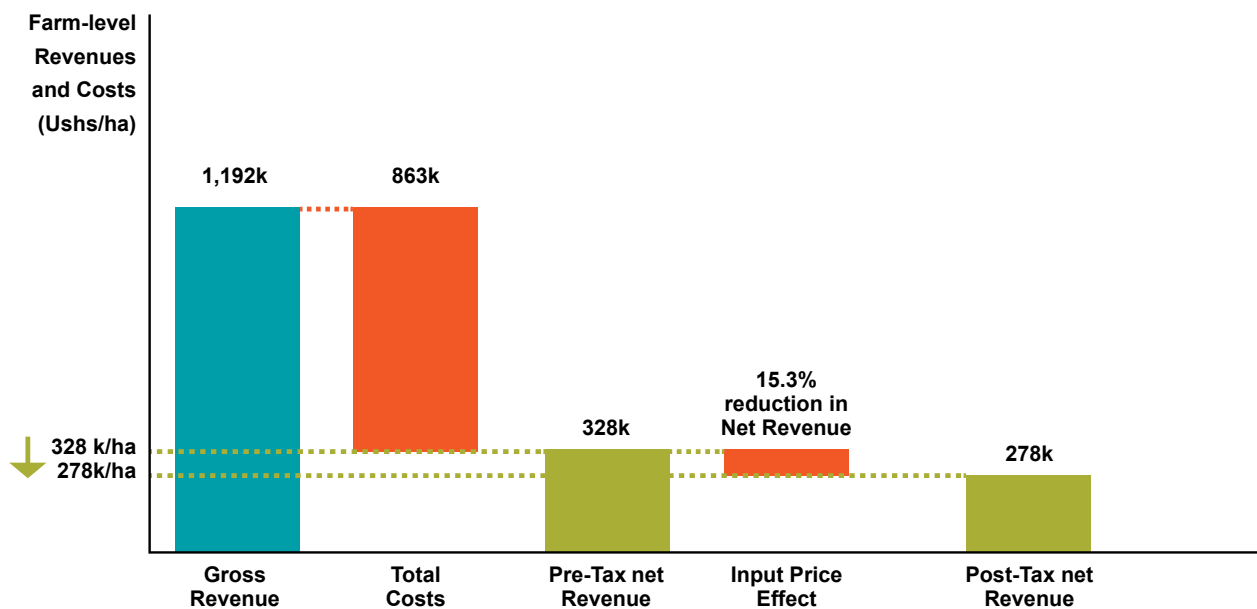
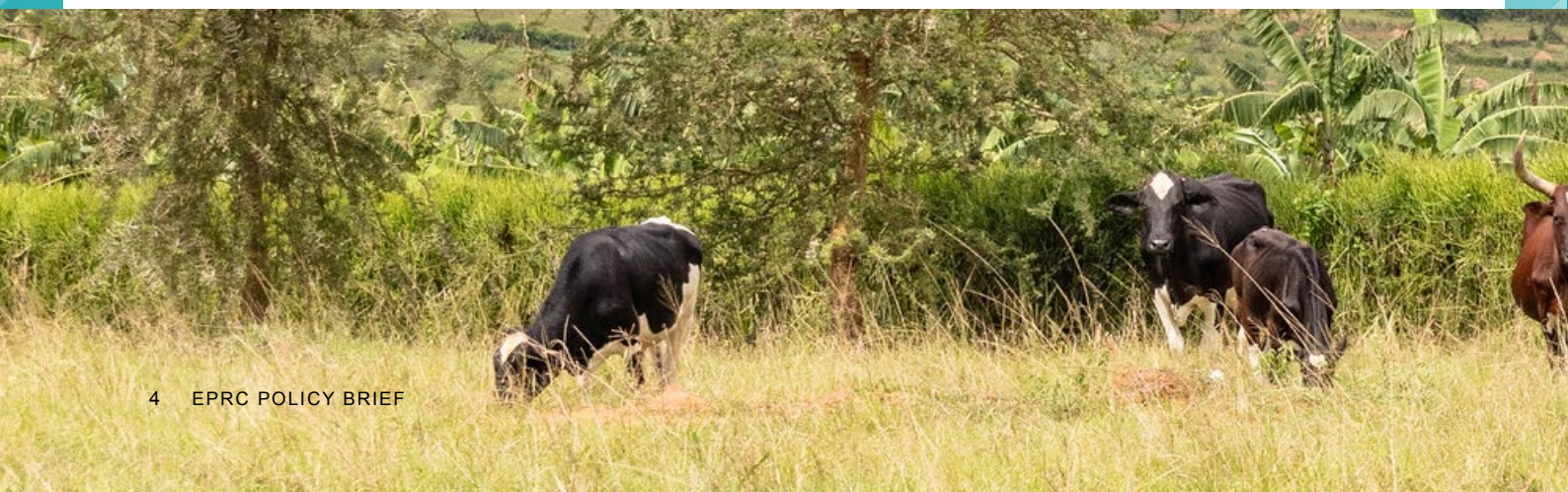
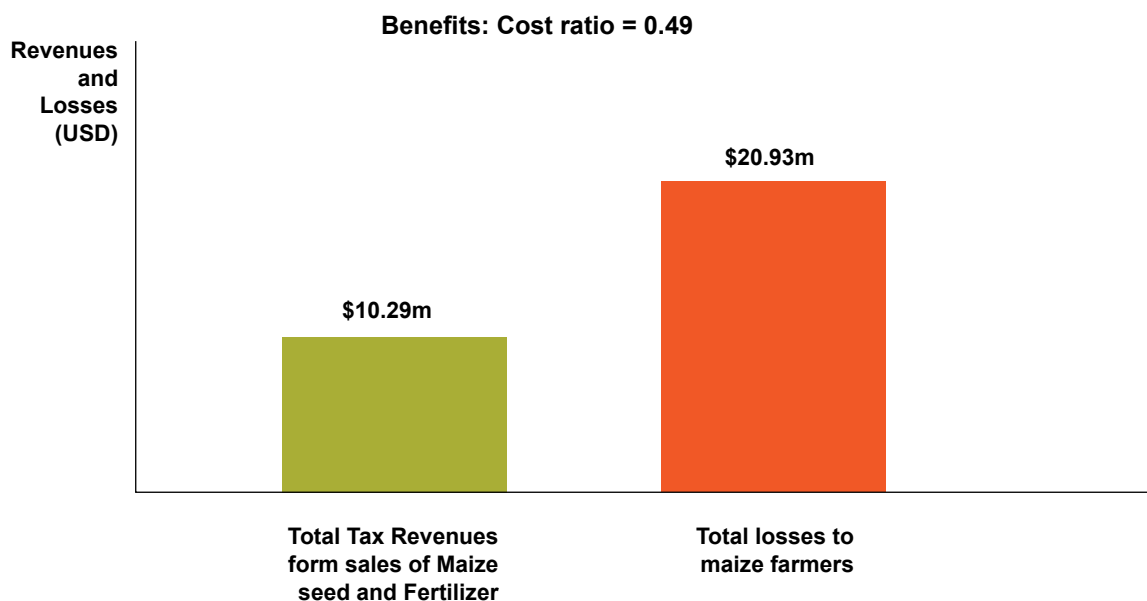


Figure 2: Likely Tax Revenues are small compared to losses - Example of Maize seed and Fertilizer

Likely Tax Revenues Are Small Compared to Losses - Example of Maize Seed and Fertilizer				
Estimated Tax Revenues				
	Quantity sold in 2013(mt)	Unit Price in 2013(USD)	Total Value in 2013(USD)	Estimated VAT at 18%(USD)
Maize Seed	12,000	3,000	24,000,000	4,320,000
Fertilizer	36,845	900	33,160,500	5,968,890
Total Estimated Tax Revenues@ 18 percent of sales value (USD)				10,288,890
Estimated Losses to Maize Farmers Using Improved Seed and Fertilizer				
Aggregate impact of reduction in maize profitability (USD)				20,926,800





**Figure 2: The ratio of benefits to costs is not justifiable**

The figures above clearly illustrate that the potential costs of the proposed imposition of VAT on agricultural inputs appear to far outweigh the potential benefits. Focusing on the maize sub-sector and considering the impact of VAT imposition on maize seed and fertilizer, the estimated total tax revenues amount to \$10.29 million compared to the estimated total losses to maize farmers of \$20.93 million as a result of VAT-induced higher costs of maize seed and fertilizer – implying a BCR of 0.49. This ratio of benefits to costs is well below the acceptable levels (a BCR greater than 1 is acceptable). If other commodities, inputs, and impact channels were considered (e.g., the “output price effect”), the BCR would be even more negative.

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*Below: Field visits to Kiruhura District, Uganda on 2nd May 2019 by the team implementing the Program for Climate-Smart Livestock systems (PCSL).  
| photo credit: ILRI/ Sonja Leitner |*



## Conclusions and Recommendations

Two clear conclusions emerge:

1. The ratio of benefits to costs renders the proposed measure unjustifiable based on the economic arguments.
2. The proposed measure thus undermines broader agricultural growth and development objectives.

Two recommendations are suggested:

1. The proposed measure should be reconsidered.
2. Alternative sources of revenues should be sought.

*Jesa Milk processing  
collection point in Mityana, Uganda  
Agrifood chain toolkit conference:  
Livestock and fish value chains in  
East Africa in Kampala, Uganda, 9-11  
September 2013. (Photocredit: ILRI/  
Muthoni Njiru) Agrifood chain toolkit  
wikispace | Photo credit: ILRI |*

