



MALAWI

IFPRI

A NEW METHOD FOR CROWDSOURCING 'FARMGATE' PRICES IN MALAWI

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Introduction

- It is common for farmers, civil society organizations, government officials and journalists to accuse traders of ‘exploitative behavior’ in the post-harvest season.
- We introduce a new, innovative and relatively inexpensive method for crowdsourcing the prices farmers are actually paid for their crops
- This crowdsourcing method is suited to low-income countries, where internet connections are unstable but mobile phones are common
- The application is demonstrated for three harvest seasons in Malawi
- The vast majority of Malawian farmers sell their maize and pigeon peas at substantially less than the minimum farmgate prices (MFG) for these crops. This was also the case for soybeans in 2020 (but not in 2021).

What is Crowdsourcing?

- “Crowdsourcing represents the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call”.
(Howe in *Wired*, 2006).
- ‘Take-off’ of crowdsourcing was linked to the development of mobile phones and the internet in the late 20th and early 21st centuries.

Notable examples: Pebble, Uber and Waze

- Crowdsourced tasks are directly outsourced to individuals, who are not required to be employers/professionals to perform the outsourced work.
- Crowdsourcing is a portmanteau term: some of the different types of crowdsourcing include: crowd coding, crowd creating of content, crowd funding, crowd identification (pests & diseases), crowd solving of problems, crowd shipping and even crowd voting.

Application to 'Farmgate' Prices in Malawi

Basic Method

During the harvest season, [radio jingles](#) were broadcast inviting farmers to report their crop sales to a free call center operated by Farm Radio Trust.

Phone numbers of farmers who responded were entered a (biweekly) raffle for agro-inputs coupons worth MWK 25,000 (about \$33).

Responses

2019 Pilot: 637 legume sales from 15 southern districts called FRT

2020 Main Season: 1048 maize and 1265 soybean sales in 27 districts called FRT.

2021 Main Season (to mid-June): 684 maize and 1126 soybean sales in 27 districts

Some Further Details

- Duplicate calls: Call center ‘alerts’ on repeat calls from the same number.

A small number (about 50) duplicate calls were then eliminated in 2020

Costs

- Cost of 2020 crowdsourcing exercise was approx. MWK 12.8 million (US\$ 17,250), of which 52% was for broadcasting of the radio jingles, 37 % for operating costs of the call center, and 11 % for coupons
- This equates to a unit cost of about, MWK 5,550 (US\$7.45) per completed call
- We expect unit costs in 2021 to be slightly lower.

Radio Stations

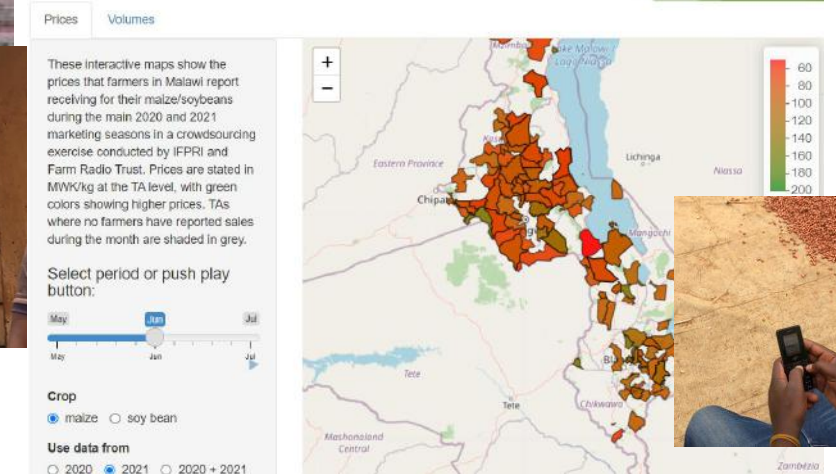
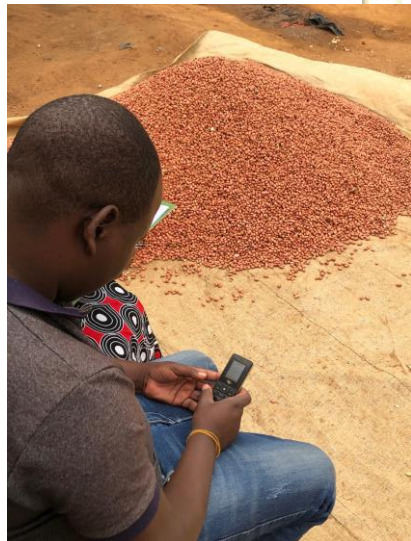
- About 55% of calls in 2020 were from Zodiak listeners, followed by MBC
- Other radio stations used were Angliba, Gaka and Mzati (2019 pilot) and the Voice of Livingstonia (2020). This year we are also using Mzimba and Tunfuye Community Radio.

Alternatives

- In the 2019 pilot, SMS ‘pushes’ to farmers were tried but the response rate for these was very low.



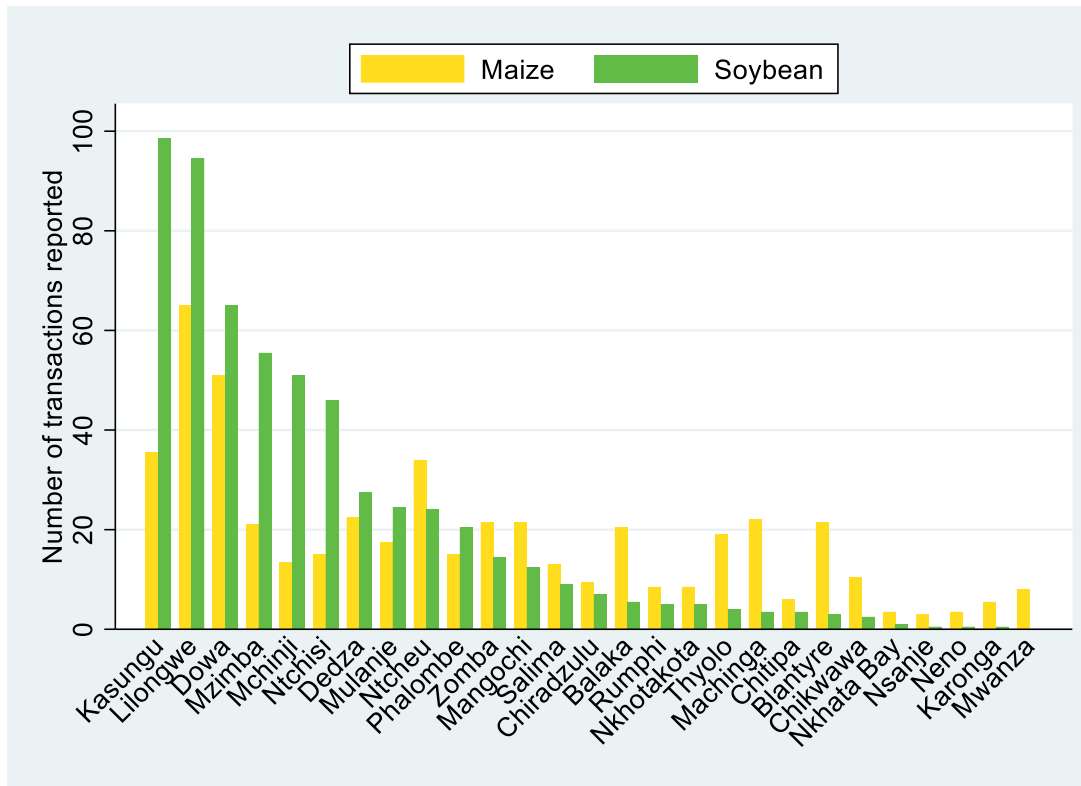
Crowdsourcing of Maize and Soybean Prices



2020 and 2021 Exercises - Results

Sales transactions by district

May – July 2020



May 2021

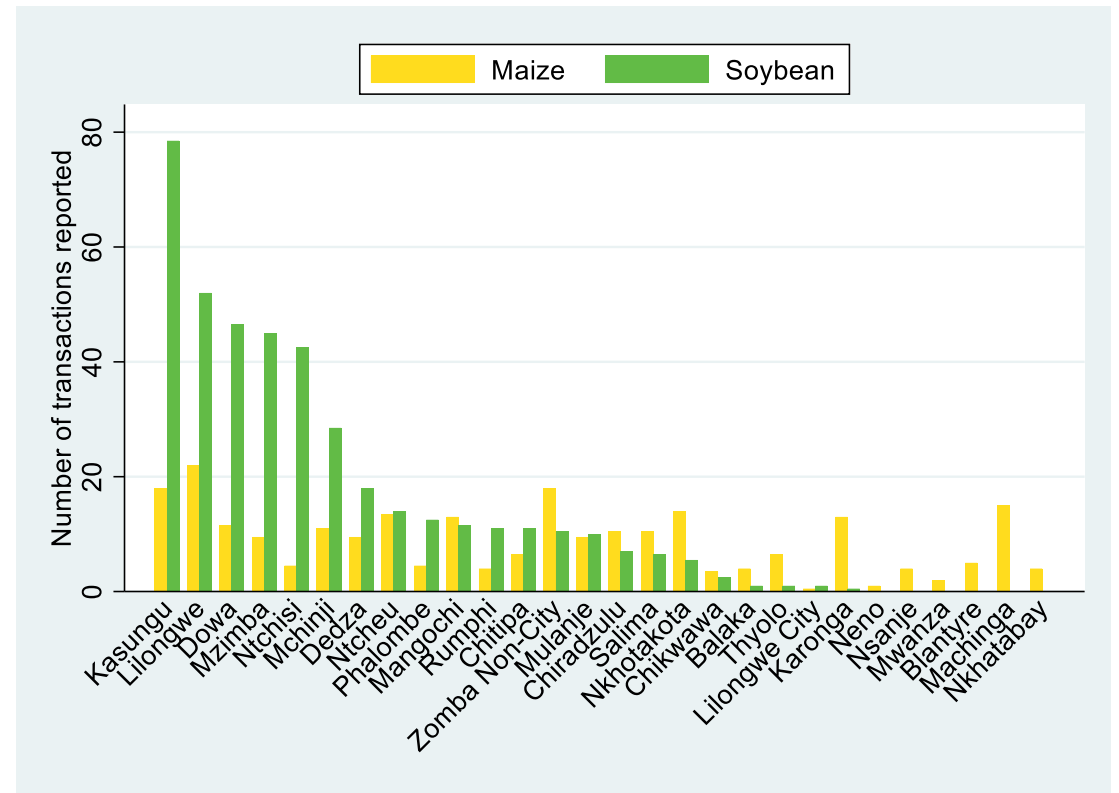


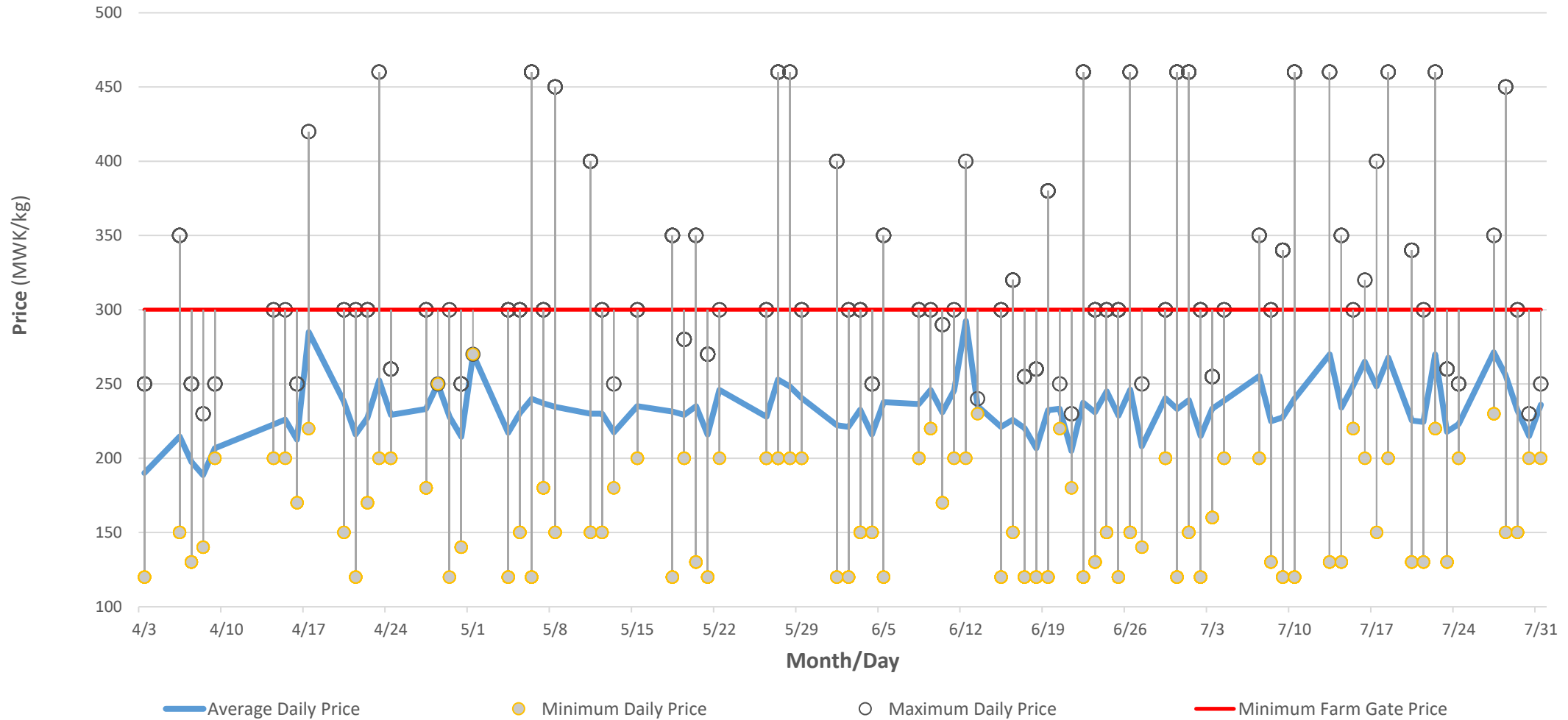
Table 1: Descriptive statistics for transactions May – July 2020

Variable	Soybean (n=1,245)		Maize (n=1,018)	
	Mean	Std. Dev.	Mean	Std. Dev.
Quantity sold (kg)	517.5	930.7	811.2	3081.6
Final sales price (MWK/kg)	231.6	48.1	151.1	36
Type of buyer				
Assembler/small trader	89.9		79.9	
Larger trader/processor	8.1		14.2	
ADMARC	1.8		5.2	
Number of previous transactions with buyer	2.1	2	2.1	1.9
Number of potential buyers in the last 7 days	2.6	4.1	2.4	3.8
Did you agree on crop quality? (1=yes)	0.75	0.43	0.76	0.43

Table 2: Descriptive Statistics for Sellers May – July 2020

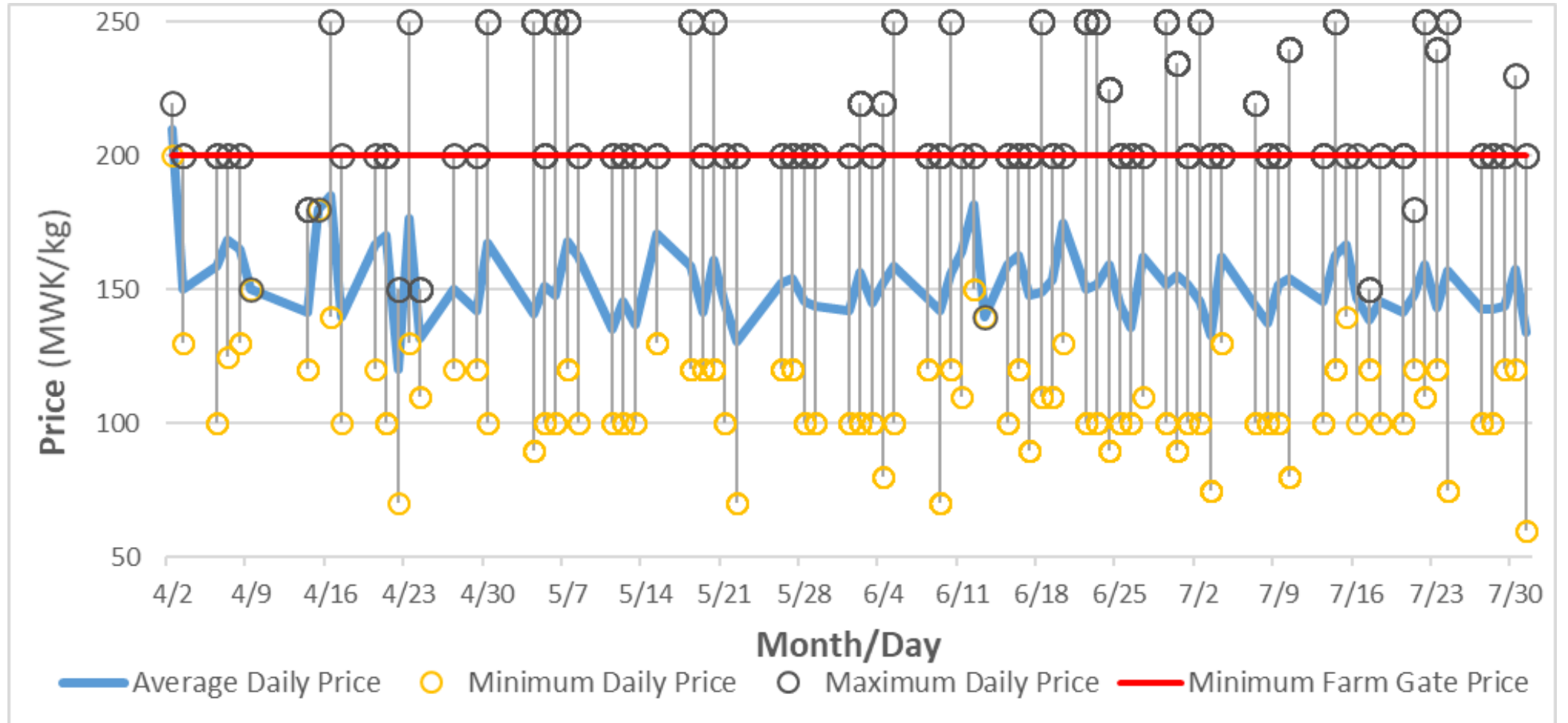
Variable	Soybean (n=1,245)		Maize (n=1,018)	
	Mean	Std. Dev.	Mean	Std. Dev.
Gender of farmer (1=male)	0.9	0.3	0.9	0.3
Age of farmer	35.98	10.82	36.35	11.38
Education level of farmer (1=primary; 2=secondary)	1.62	0.59	1.66	0.63
Farming experience	12.09	8.62	12.48	9.28
Farm size (acres)	3.97	3.68	3.47	3.24
Area under crop (acres)	1.58	2	2.04	1.67
Distance to nearest main road	7.33	11.38	6.98	10.72

Daily soybean prices received by farmers, MWK/kg , April–July 2020



Daily maize prices received by farmers

MWK/kg April–July 2020



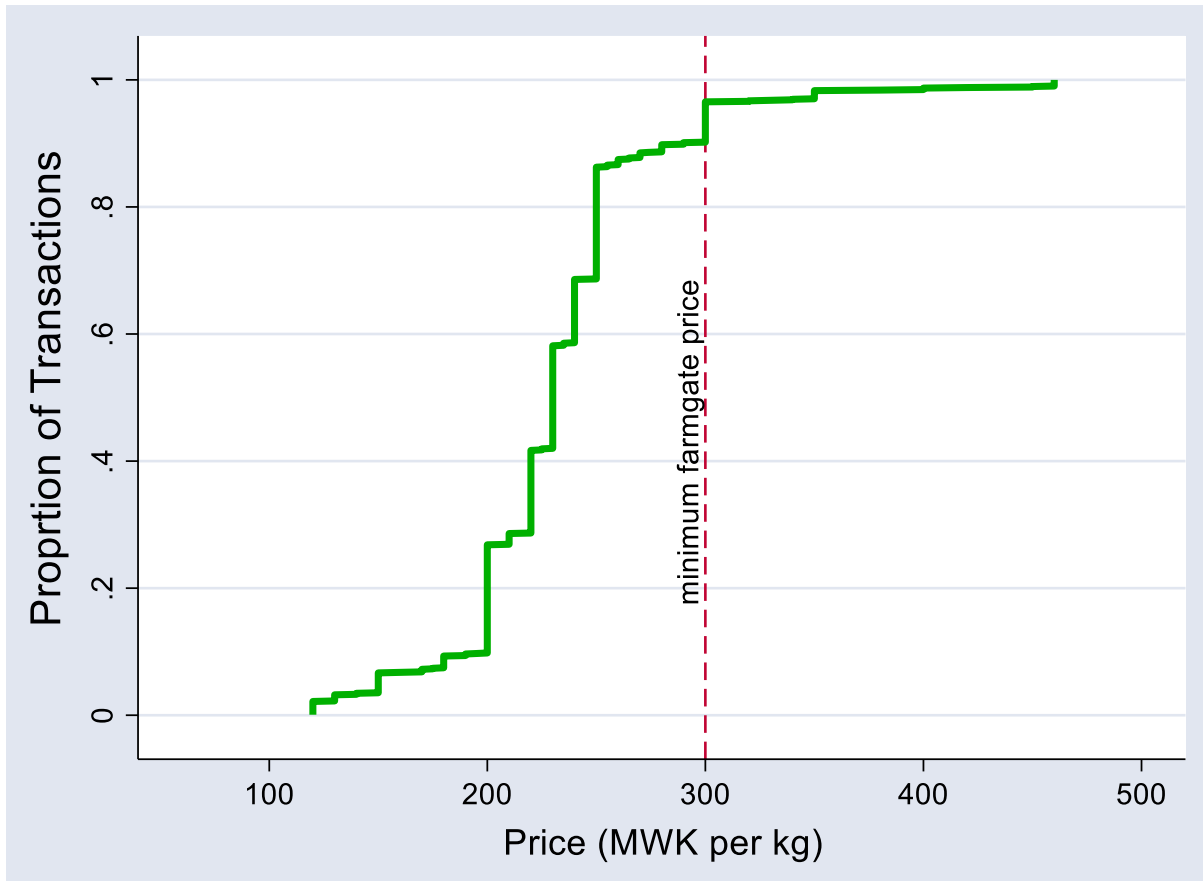
Prices Received by Farmers in 2020

- Soybeans: 9.8% of farmers received prices equal to/greater than the MFG price
- Maize: 24.5 % of farmers received prices equal to/greater than the MFG price

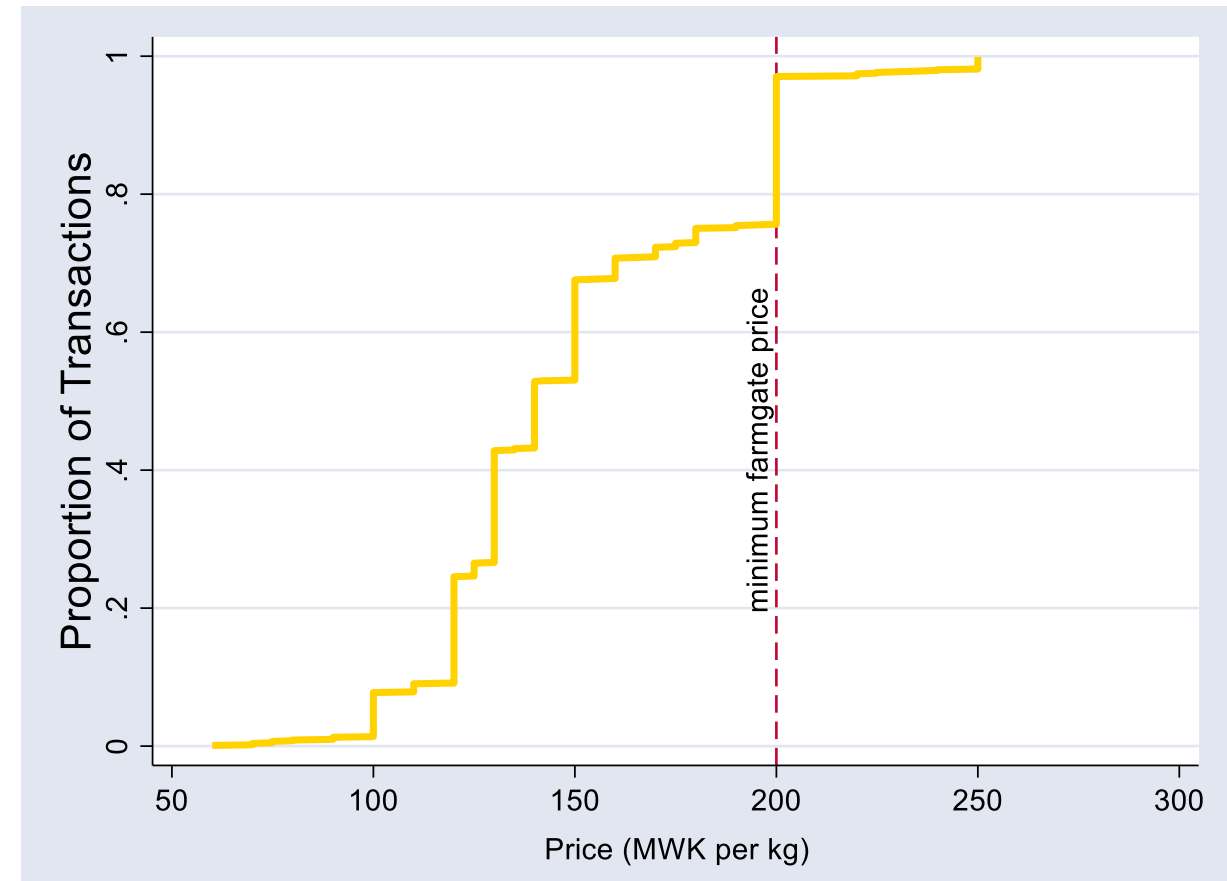
	Mean	Median	10th percentile	90th percentile	Number of Transactions
Soybeans					
Price (MWK/kg)	231	230	200	290	1,245
Maize					
Price (MWK/kg)	151	140	120	200	1,018
% of MFGP	75%	70%	60%	100%	

Farmer Prices of % of Minimum Farmgate Price

Soybean

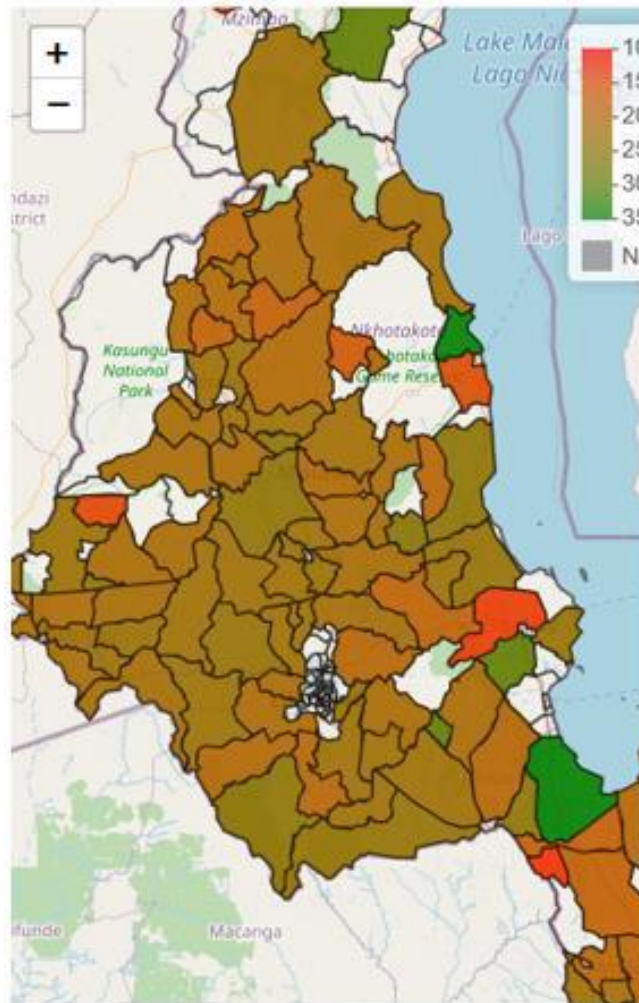


Maize

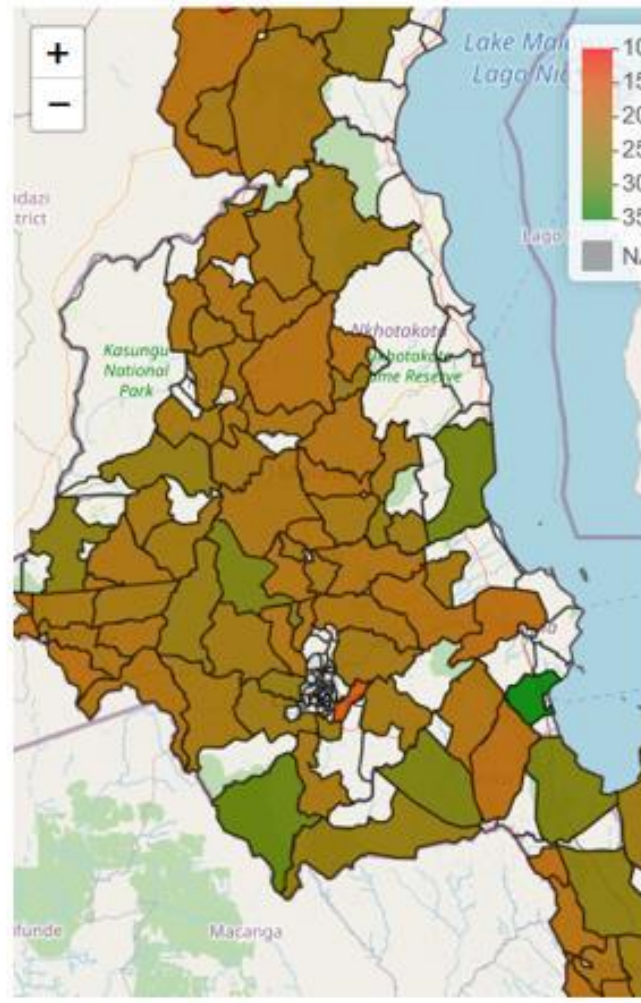


Evolution of Soybean Prices During 2020

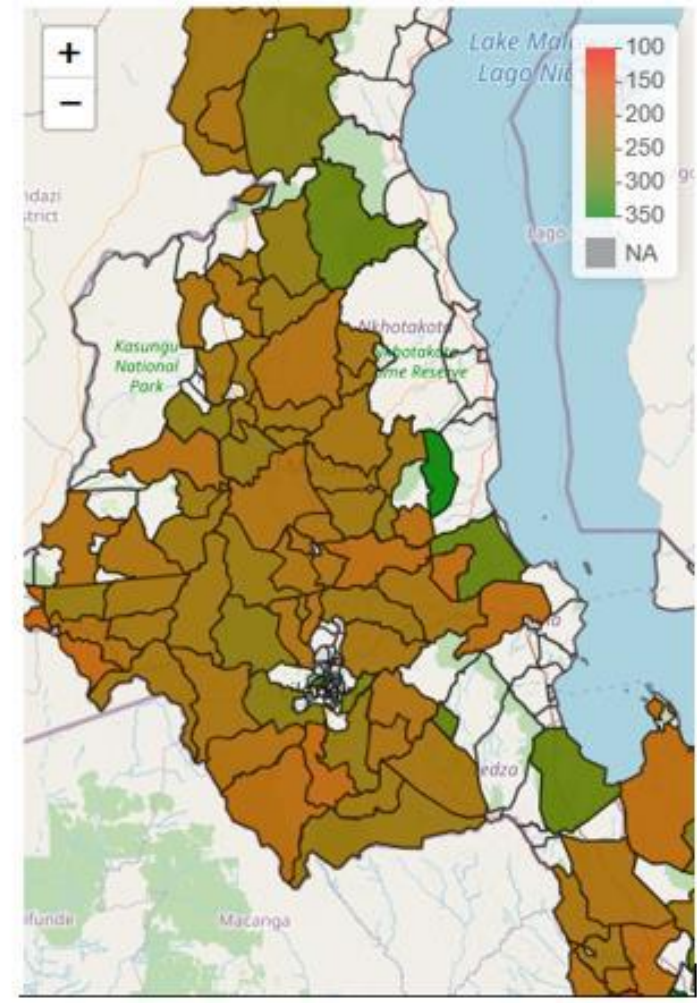
May



June

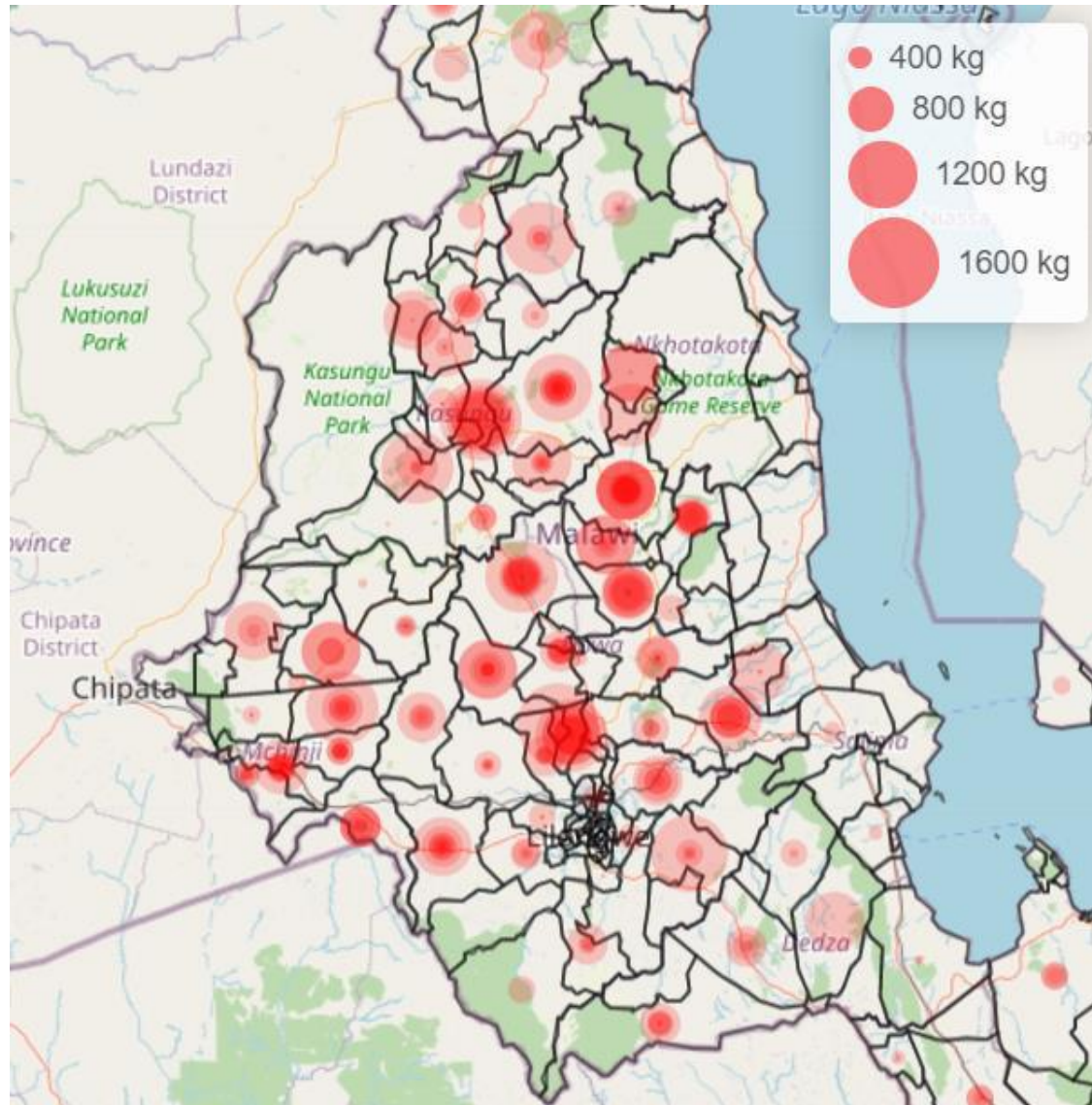


July

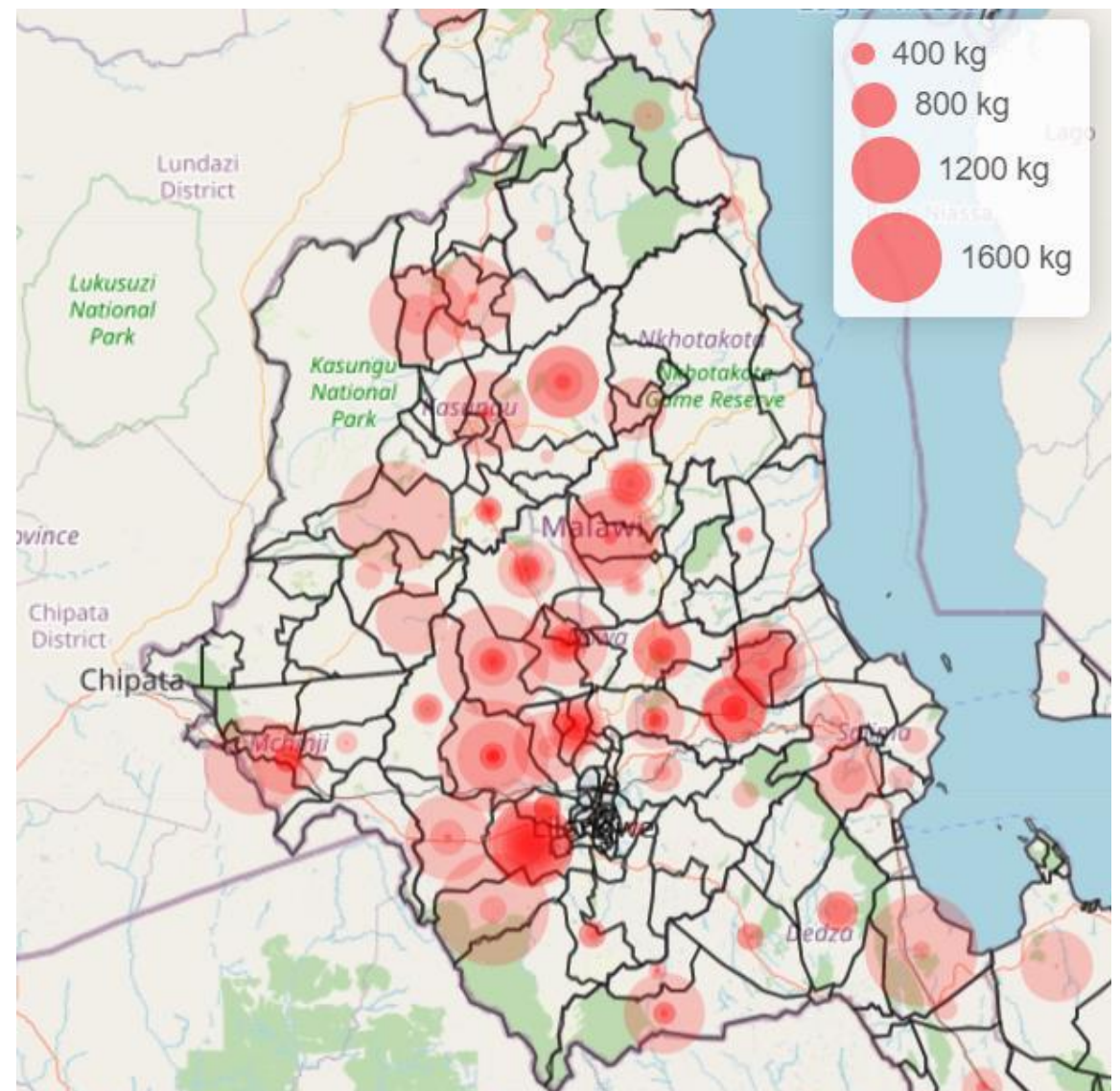


Volumes Sold by TA in June 2020

Soybean

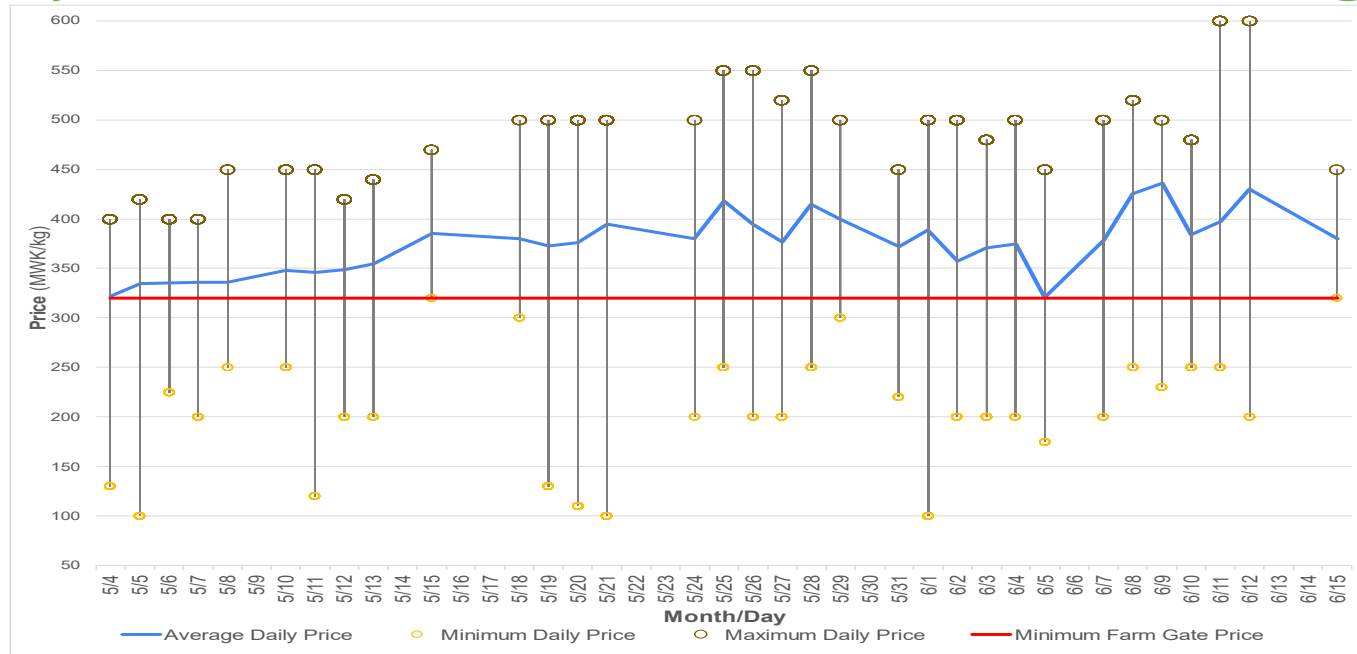


Maize

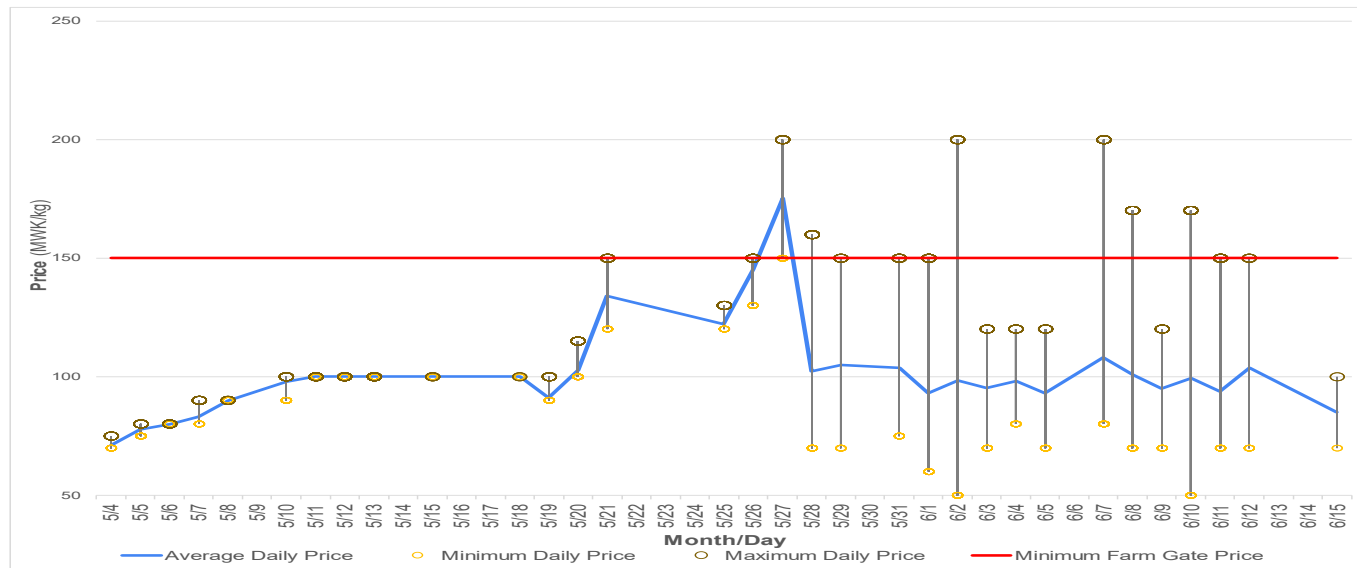


Preliminary Results from 2021 Crowdsourcing, May – Mid June

Soybean
(n=1126)



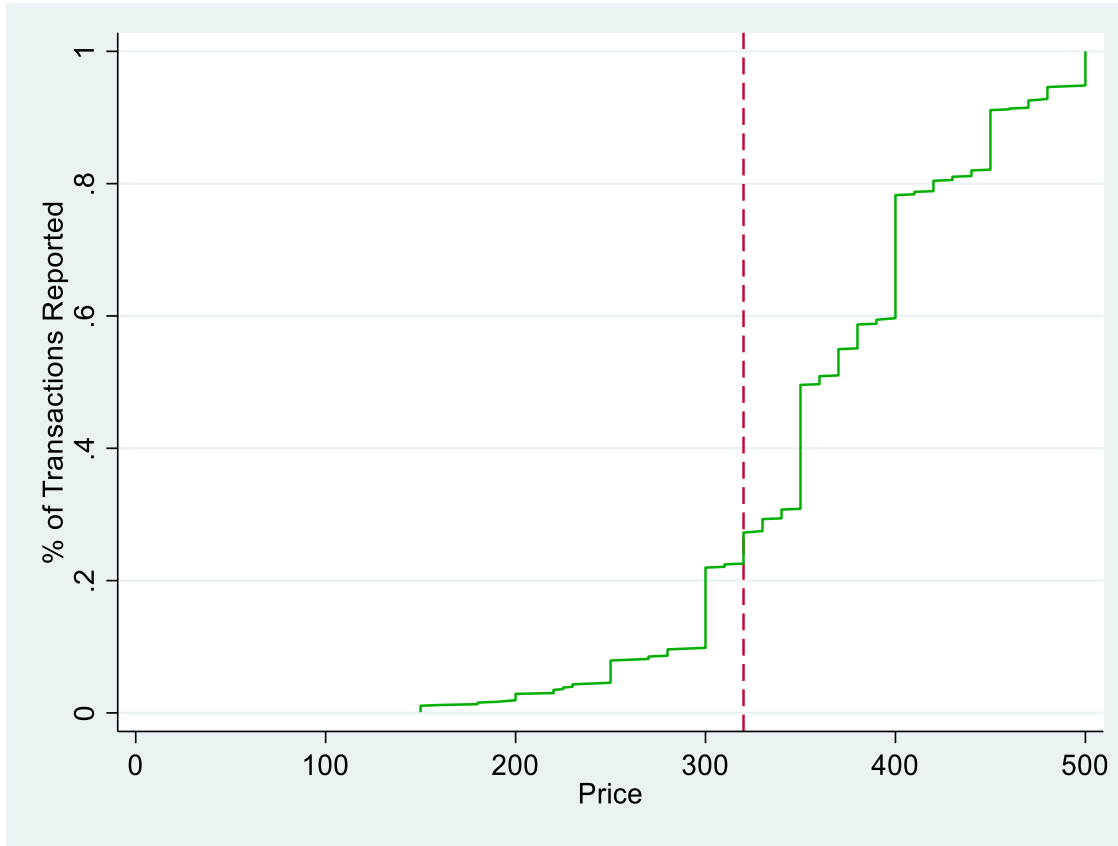
Maize
(n=684)



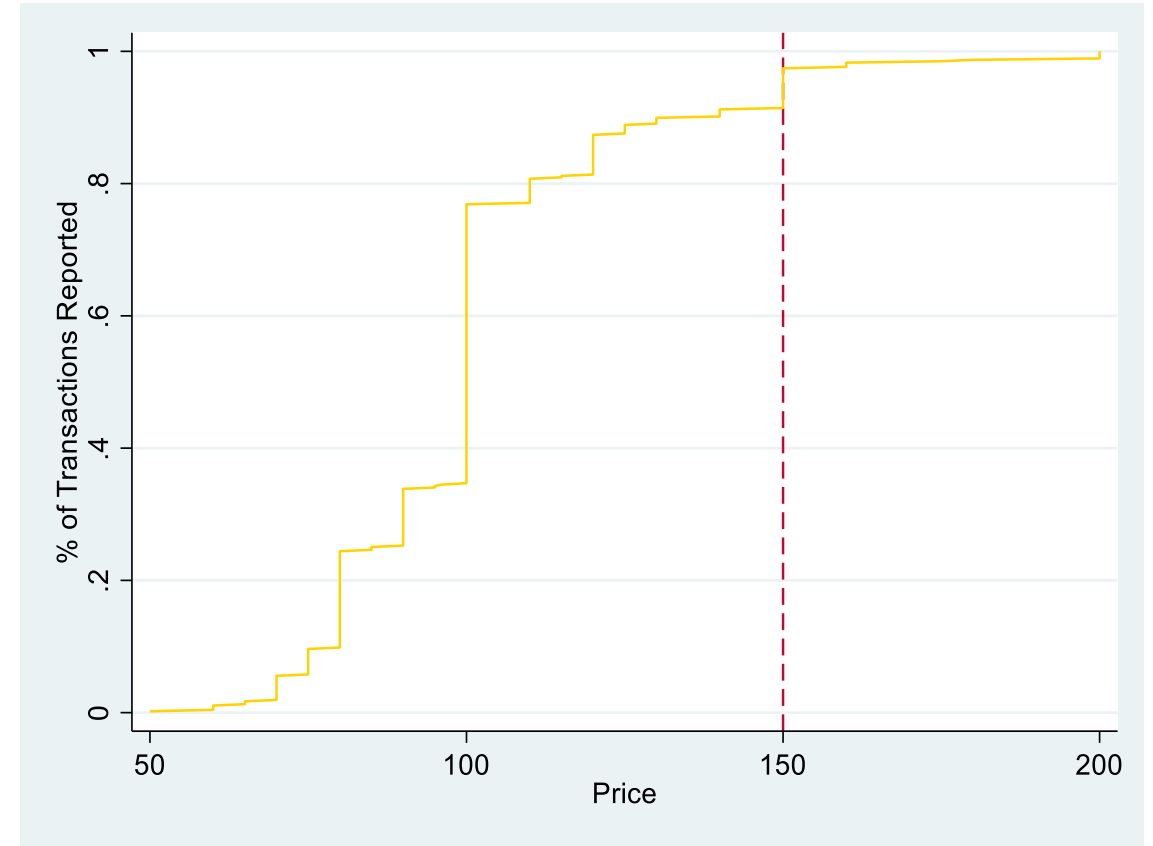
Farmer Prices as % of Minimum Farmgate Price

May 2021

Soybean



Maize



In 2021 (to mid June) 78% of soybean farmers received prices equal to or greater than the MFG price, compared to 10% in 2020. For maize, 9.56 % of farmers have received prices equal to/greater than the MFG price in 2021 compared to 24.5% in 2020.

Comparison of Soybean and Maize Prices Received by Farmers in May 2020 and May 2021

Soybean

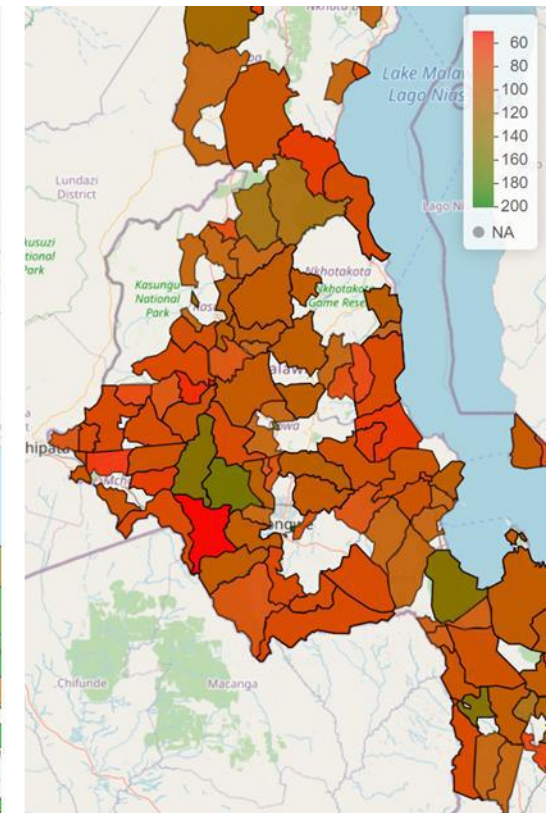
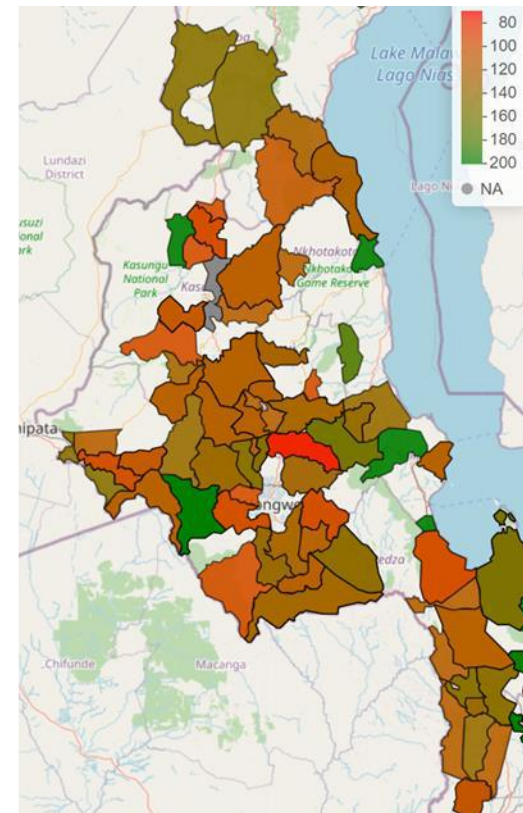
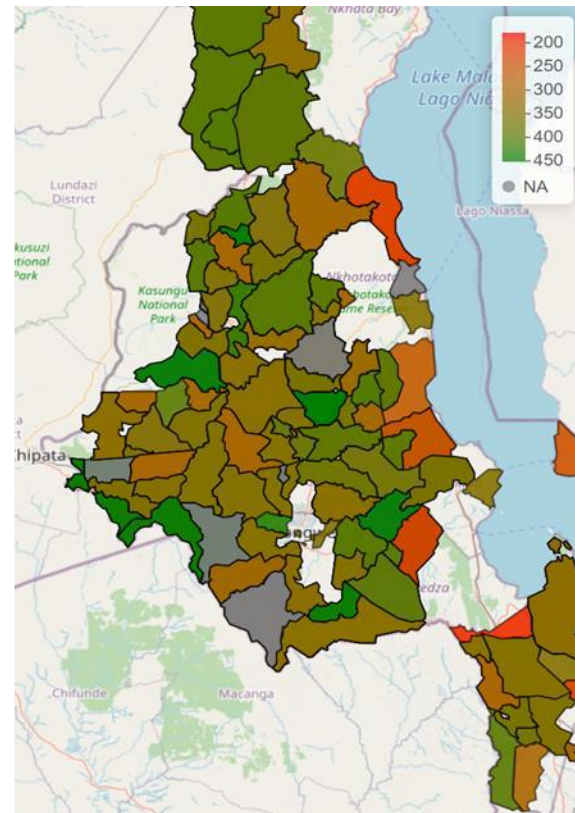
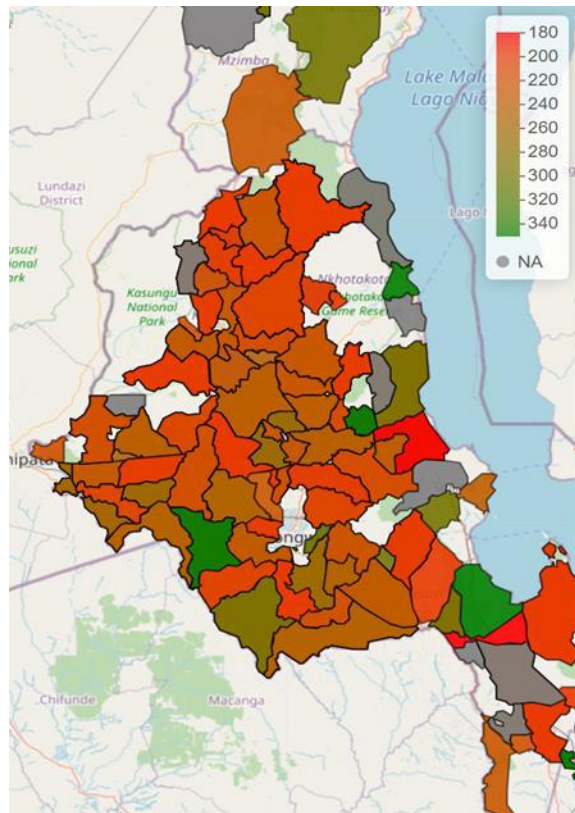
Maize

May 2020

May 2021

May 2020

May 2021



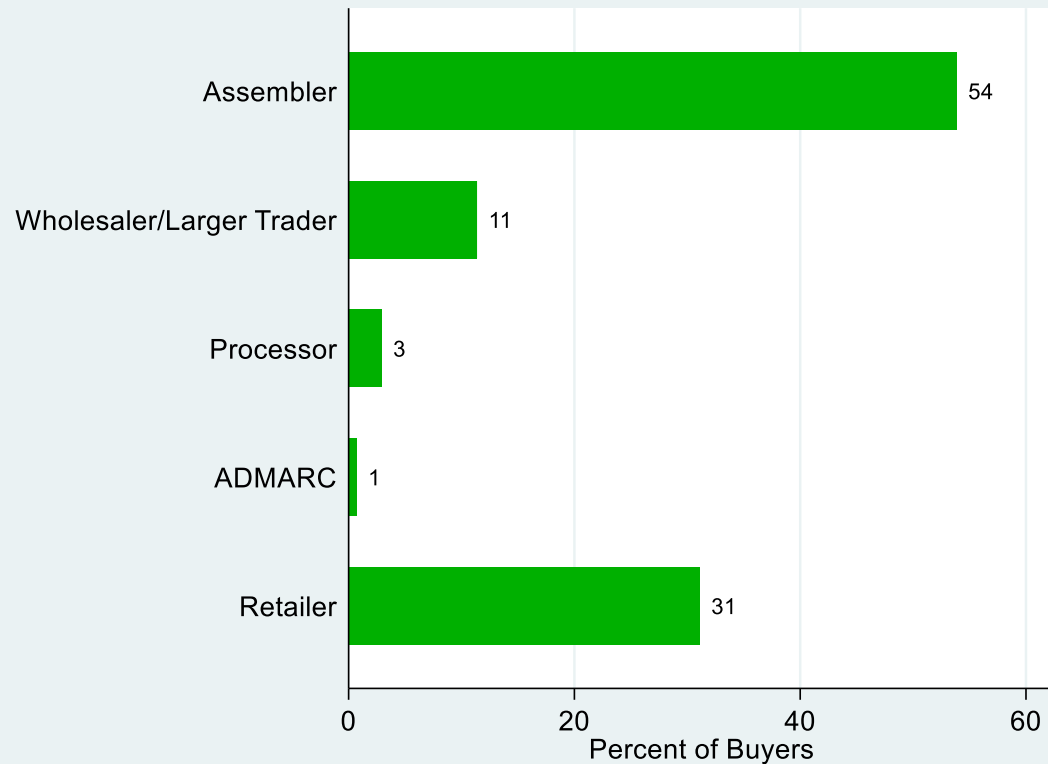
To access these and other interactive maps, see: <https://massp.ifpri.info/2021/06/14/interactive-heat-maps-on-crowdsourcing-exercise/>

Type of Buyers

May – mid June, 2021

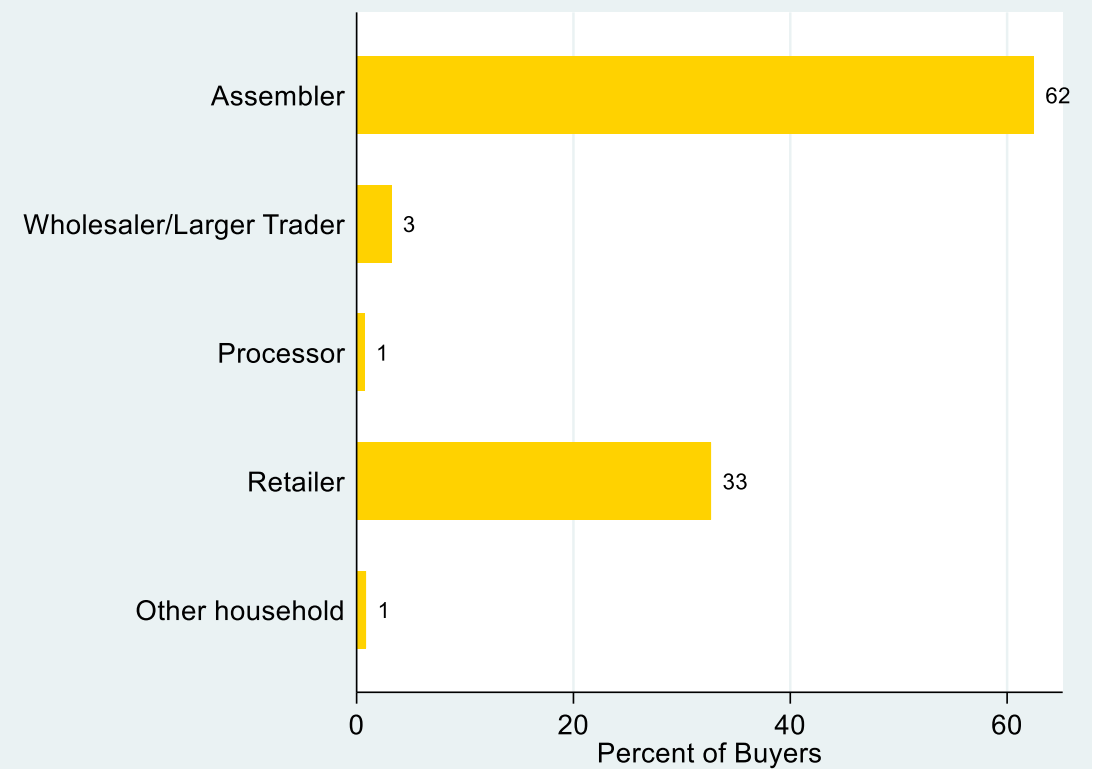
Soybean

N=1,125



Maize

N=685



Summary and Conclusions

- Crowdsourcing of 'farmgate' prices via radio jingles and a call center is an effective and reasonably inexpensive way
- In 2019 and 2020, the vast majority of farmers in Malawi received substantially less than the MFG prices
- The situation has improved for soybean farmers in 2021 so far, with 78% receiving at least the MFG price, compared to just 10% in 2020.
- However, only a small percentage of maize farmers received more than the MFG in both 2020 and 2021 to date (25% and 10% respectively).
- The average farmer received just 75 percent of the MFG price for maize and 77 percent of the MFG price for soybeans between April and July 2020. (The corresponding figures for May 2021 are 69% and 114% of the MFG price.)

What is to be done?

- Many commentators and policy makers instinctive reaction to these findings is that MFG prices should be enforced by the authorities.
- But do the Ministries of Agriculture and Trade, the Malawian Bureau of Standards and the Police really have the capacity to enforce widespread adherence to MFG prices?
- Promoting competition is likely to do more to raise the prices farmers receive than penalties imposed on some traders who do not adhere to them.

Zikomo kwambili

Questions and Comments

<https://massp.ifpri.info/2021/06/14/interactive-heat-maps-on-crowdsourcing-exercise/>