

Is There Scope for Commercially Upscaling the Groundnut Value Chain in Malawi? A Systematic Analysis of Groundnut Production, Processing and Marketing in Malawi

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Introduction

A groundnut value chain study was commissioned by the Government of Malawi to identify priority investments for commercial up-scaling of the groundnut sub-sector, using support of the New Alliance Policy Acceleration Support (NAPAS: Malawi) Project. This study summarizes the findings of the groundnut value chain study.

Objectives

- To identify key issues affecting the groundnut value chain in Malawi.
- To identify priority investments that would be required for commercially upscaling the groundnut value chain.

Methodology

The methodology included:

- Literature review to identify data and knowledge gaps;
- Key Informant Interviews and Focus Group Discussions (FDGs) with 293 farmers, 22 farmer groups, 56 market retailers, 21 intermediate traders, 14 processors and 10 extension workers;
- Profitability analyses for smallholder farmers and traders; and
- A Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis

Importance of Groundnuts in Malawi

- Most widely produced legume crop in Malawi. Occupied largest area under legume and pulses cultivation (29%), followed by common beans (25%) and pigeon peas (21%) in 2016/17 season.
- Second most important legume in terms of volume accounting for 29% of the total volume produced of legumes and pulses in the 2016/17 season. Pigeon peas were the most important, making up 35% of total volume (MoAIWD APES 2016/17).

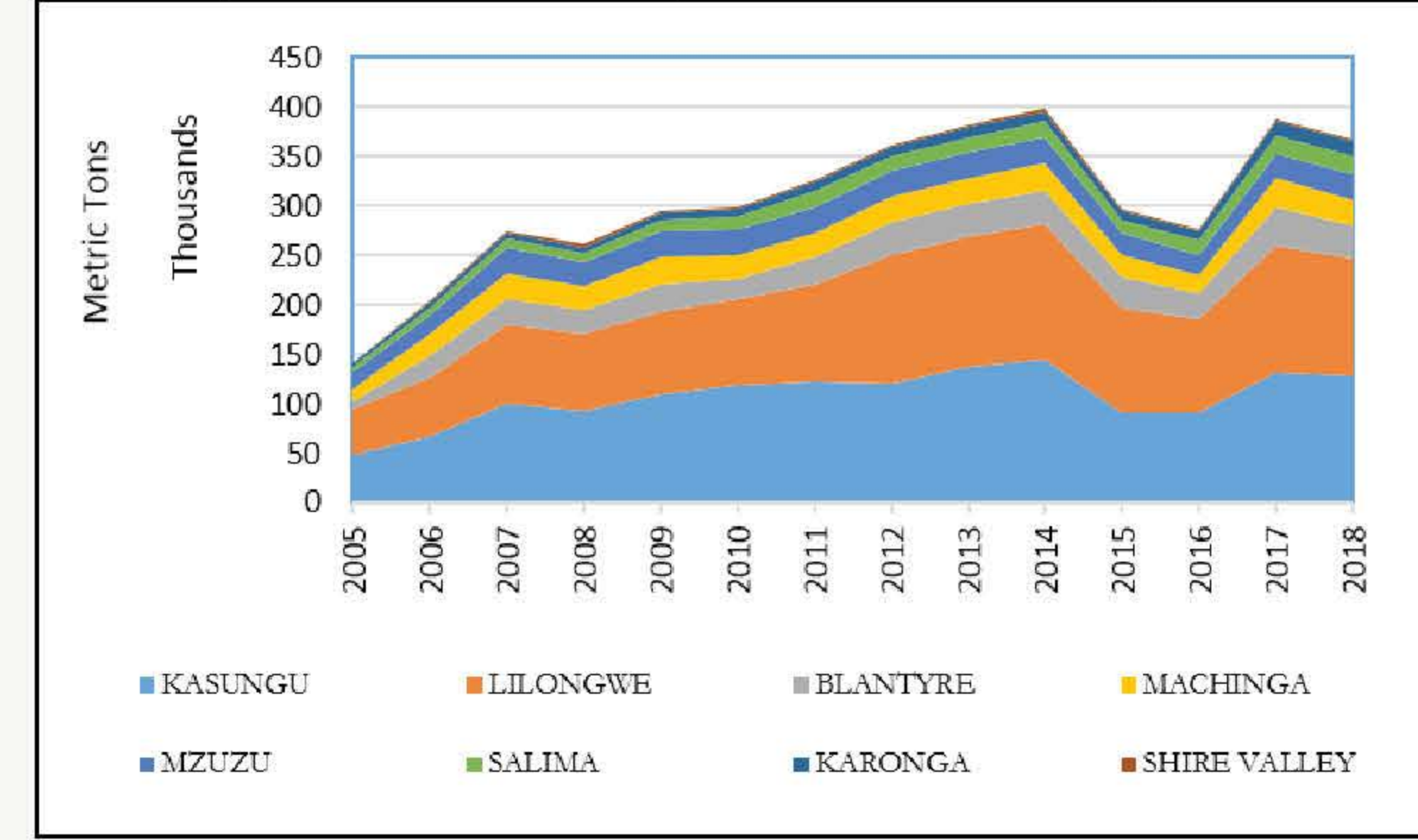
Key Findings

- Low productivity at smallholder farmer level due to smallholders' inability to access certified seed and follow recommended agronomic practices. Groundnut has a dual problem of a high seed rate (80 – 100 kgs needed per ha,) and a low seed multiplication ratio making its certified seed economically inaccessible to smallholder farmers. Recycling of seed is the most common source of planting material.
- Varieties grown by most farmers are not responding to current industry or export market demands.
- Underdeveloped formal output market systems with <1% of traded groundnuts marketed through the two commodity exchange markets in Malawi.
- Aflatoxin contamination is a major problem affecting peoples' health and access to lucrative markets access. Studies show that Malawi suffers 6,344 deaths annually due to aflatoxin-induced liver cancer. These deaths are estimated to cost the economy between US\$ 25 million to US\$ 1.3 billion annually (exclusive of costs associated with loss of export markets). Groundnuts used to be an important export earner for Malawi before imposition of stringent food safety/aflatoxin standards in the European markets.
- Proliferation of informal groundnut trading for the regional export markets from which Government is unable to enjoy benefits of increased foreign reserves or government revenue.

Production and Productivity Trends

The central region of Malawi, through Lilongwe and Kasungu Agricultural Development Divisions (ADDs), account for more than half of total national production (Figure 1). Smallholder production systems exclusively rely on rain-fed agriculture.

Figure 1: Groundnut production by Agricultural Development Divisions (2004/05-2017/18)

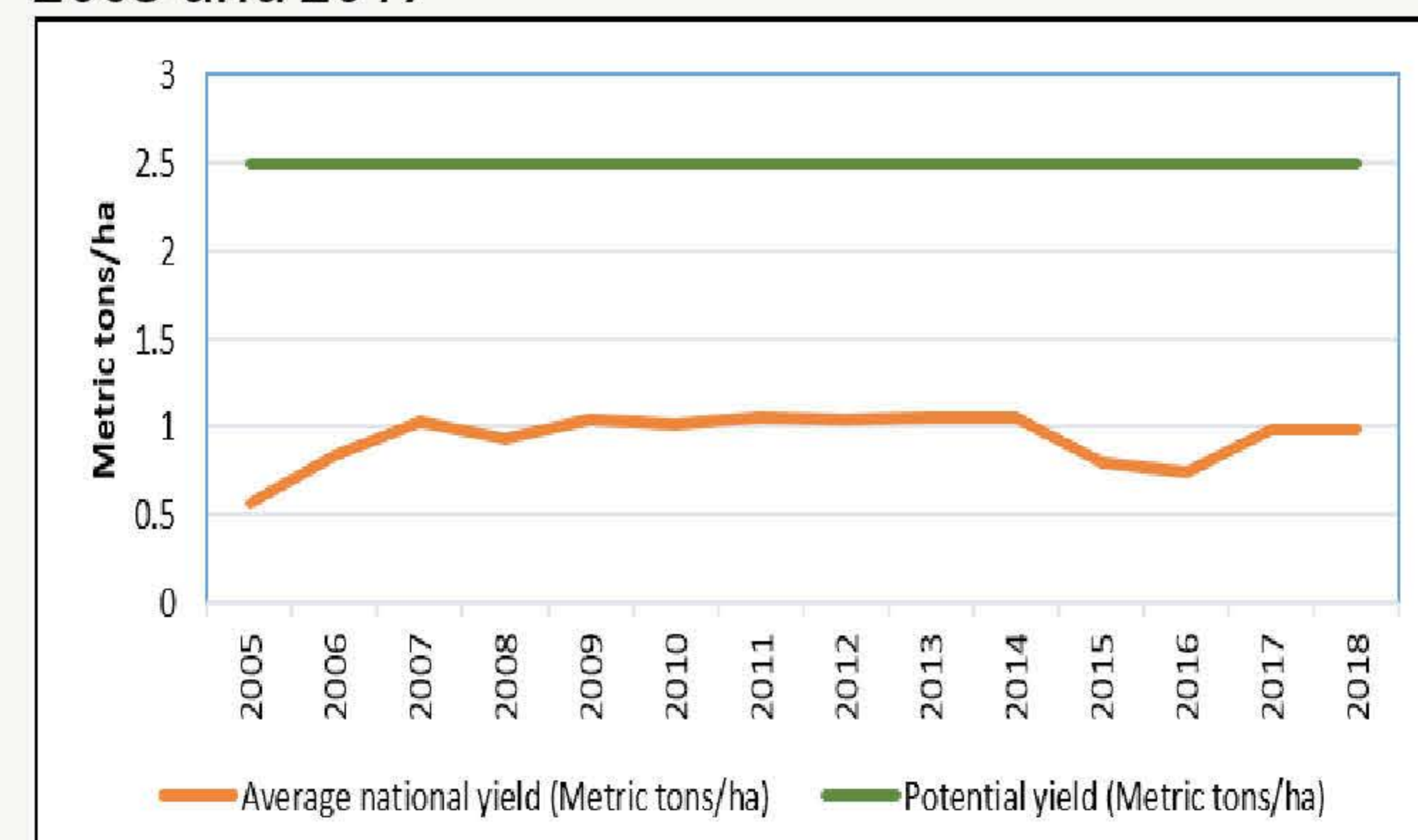


Source: MoAIWD Agricultural Productions Estimates Survey (APES) data

Note: Blantyre, Machinga and Shire Valley ADDs are in the Southern region, Lilongwe, Kasungu and Salima ADDs are in the Central region while Karonga and Mzuzu ADDs are in the Northern region

- Thus, the reliability of rainfall in a particular season determines the success or failure of the crop as reflected in the 2015/16 season in Figure 1 when El Nino caused droughts and flooding that affected production negatively.
- Yields have remained stagnant at about 1 MT/ha against a maximum potential of 2.5 MT/ha (Figure 2)

Figure 2: Productivity trend of smallholder groundnuts compared to potential for the period 2005 and 2017



Source: MoAIWD Agricultural Production Estimates Survey (APES) Data (2017)

Groundnut Trade and Marketing

- An estimated 25% of locally produced groundnuts are traded domestically across Malawi and 15% in the regional market (FAO, 2014; Emmott & Stephens, 2012; Chemonics International, 2009).
- Insignificant (small) quantities cross-over to the international overseas market because of high levels of aflatoxin contamination.
- Groundnuts are mostly traded through an informal underdeveloped market system, where most manufacturers and large traders do not engage farmers in formal contract farming arrangements. Malawi has attempted to solve the grain marketing problems by establishing two commodity exchange markets (Agriculture Commodity Exchange for Africa (ACE) and Auction Holdings Commodity Exchange (AHCX)). However few of the traded groundnuts (<0.5%) pass through the structured markets (CEMs) (see Table 1).

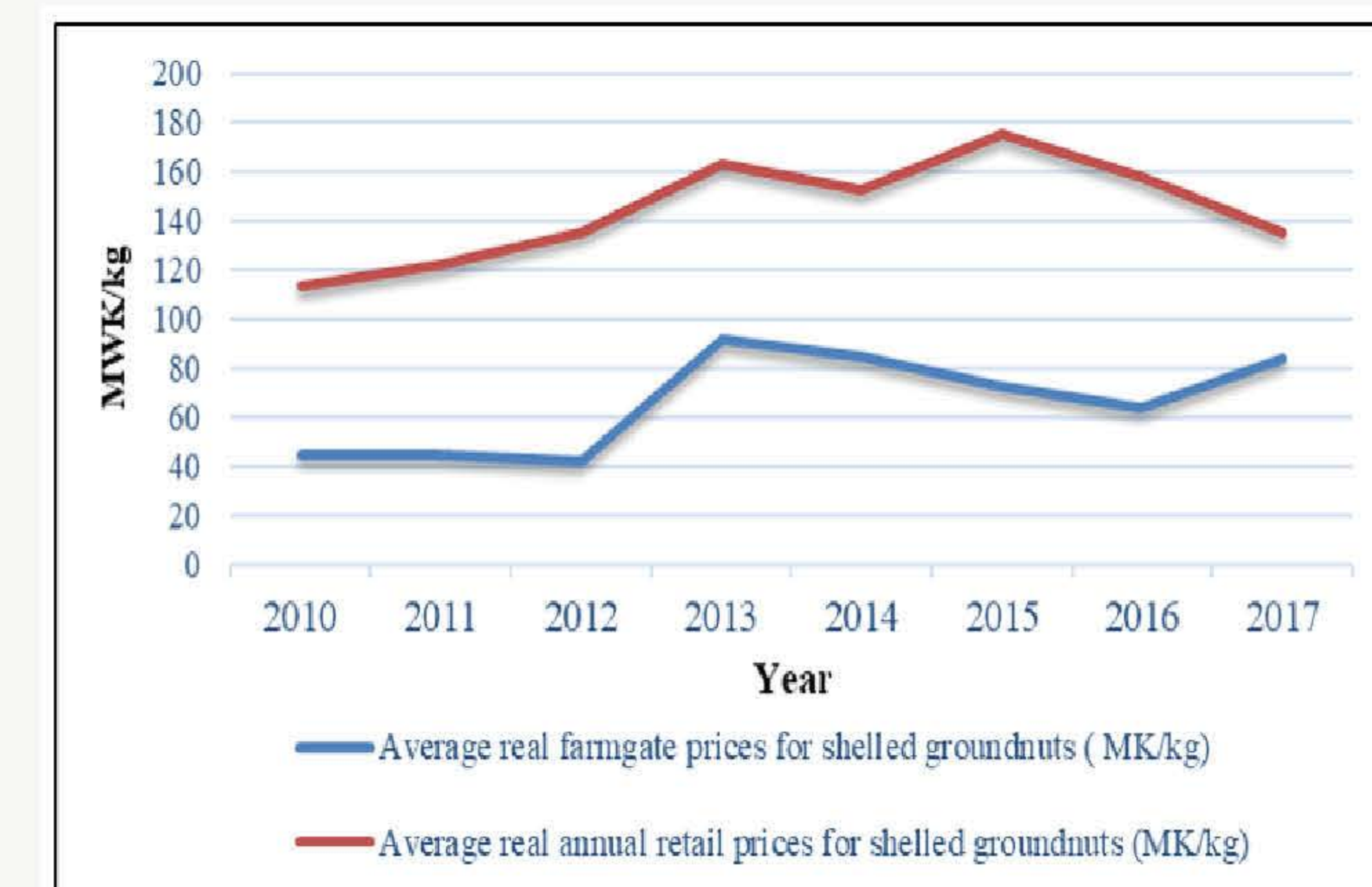
Table 1: Total share of groundnuts sold through the commodity exchange system between 2012 - 2016

Year	Quantity traded through CEMs (mt)	Total quantity of traded groundnuts (mt)	% of traded groundnuts sold through CEMs
2012	33.7	126466	0.03
2013	630.6	133280	0.47
2014	645.3	139126	0.46
2015	197.7	103774	0.19
2016	188.4	96275	0.17
Total	1675.7	598921	0.28

Source: Computed from MOAIWD's Agricultural Production Estimates (APES) data and ACE/AHCX sales data

- The informal market is dominated by itinerant traders/vendors who buy directly from small-scale producers at farmgate prices, during the harvest season of April to early June for resale during the lean season of October to March.
- The absence of well-developed structured markets, seasonality of production and the dominance of informal trade have contributed to high price variability between farmgate and lean season prices (see Figure 3).
- Lean season prices can be two times higher than farmgate prices. A year of bad harvest can be accompanied by even extremely high lean season prices.

Figure 3: Seasonal variation of real farmgate and retail market prices for shelled groundnuts between 2010 and 2017



Source: MoAIWD Agricultural Management Information System (AMIS)

Profitability Analysis

- The average yield of farmers in the groundnut survey was estimated at 600kg/ha and the farmgate price at MK440/kg.
- The gross return on investment at this farmgate price and production level was estimated at MK20,056/ha.
- The gross return rises to MK856,056/ha at a farmgate price of MK440/kg for a high input farmer with a productivity level of 2.5MT/ha
- At the average lean season price from the agricultural market information system (AMIS) of the Ministry of Agriculture, the gross return on investment rises to MK233,056/ha (representing a gross profit margin of 48%) (see Table 2).

Table 2: Profitability analysis for low/high input farmer based on the gross margins per hectare in Malawi Kwacha and 2016/17 unit prices

	Low input (farmgate prices)	Low input (Lean season prices)
Income	273,000	477,000
Total variable costs	243,944	243,944
Gross margins	29,056	233,056
Gross margins (% of income)	7	48

US\$=725MK

Unit price MK440/kg

Source: NAPAS: Malawi groundnut value chain study, 2017

Price Variability Across the Value Chain

- Figure 4 shows movement of price from farmer to processor in the groundnut value chain. At the processor level of therapeutic groundnut products (Sibusiso), the price is more than 9 times the price the farmer receives at farmgate.

Figure 4: Price changes along the groundnut value chain

	Farmer	Trader/vendor	Supermarket/Retailer	Processor					
				Cooking oil	Nsinjiro	Roast ed nuts	Peanut butter Sibusiso*		
Average raw/processed groundnut prices (MK/kg)	440	620	1,500	1,600	1,760	2,347	3,430	4,170	
Percentage price change	Base	41%	141%	14%	27%	32%	46%	22%	
Farmer to processor				240%	284%	308%	433%	480%	848%

Source: Groundnut value chain survey, 2017

Notes

*The price of cooking oil for a one litre bottle

*Sibusiso is a form of therapeutic supplementary food product

Transformation of the Nut Along the Chain

- Groundnuts are consumed in the form of roast/salted nuts or Nsinjiro (groundnut flour) at household level. Nsinjiro is a condiment in local dishes. About 60% of total production is consumed in Nsinjiro form.
- Sometimes water is sprinkled onto groundnuts to soften the shell for easier shelling. According to Rios, et al., (2008), Gokah, et. at., (2013) and Emmott (2012), this common practice increases the risk of aflatoxin contamination by about 73%.
- Very small quantities are used for oil extraction. Oil extraction is mostly done at community level.
- At industrial level, groundnuts are transformed into blanched nuts, peanut butter, Sibusiso, Ready to Use Therapeutic Foods, and other similar products.
- Industrial processors prefer sunflower seed and soybean to groundnuts in oil extraction because these have a much superior oil yield than groundnuts.
- The majority of smallholder farmers choose their varieties based on other biological characteristics (e.g. maturation period) rather than industrial and export market preferences

Recommendations on Investment Priorities

In order to commercially up-scale the groundnut value chain in Malawi, there is need to:

- Improve productivity at smallholder level by enhancing smallholder access to certified seeds;
- Increase investments in research and extension to develop varieties that that respond to the needs of the manufacturing industry (e.g. varieties with higher oil content) or preferences of export markets;
- Strengthen farmer organizations through deliberate capacitation programmes as one way of upgrading the value chain;
- Promote better storage and post harvest handling practices for groundnuts to minimize the risks of aflatoxin contamination (e.g. promotion of trade in nuts in shell (NIS));
- Address the problem of aflatoxin contamination to improve quality. This will improve prospects for increased access to lucrative markets. This would also result in reduced deaths associated with aflatoxin induced liver cancers;
- Conduct awareness campaigns on the dangers of ingesting groundnuts that have been contaminated with aflatoxin;
- Reform and make commodity exchange markets more inclusive for smallholder farmers;
- Explore and take full advantage of the regional export markets;
- Invest, formalize and regulate the existing large informal domestic market;

Conclusions

- Groundnuts is a popular crop among smallholder farmers in Malawi. Improving its value chain will have significant poverty reducing effects for Malawi.
- Groundnuts are also a nutrition enhancing product.
- Malawi has to deal with low productivity of the crop, the aflatoxin safety issues and strategize on increasing groundnut use in the domestic industry and penetrating regional and overseas markets.

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