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PPVC Deep-Dive

Malawi – Soybeans

Stakeholder Engagement

28 May 2024



Malawi soybean industry: Towards an ideal state



Largest challenges observed in the marketing & trading of soybean products

Opportunity



- Through a market-led lens, more sustainable production targets for Malawi can be developed.
- Development of the Malawian feed market through targeted reforms aimed at transforming the local poultry industry.
- Import replacement and export growth of soybean primary- and secondary products:
 - a. Malawi is a net importer of soybean pieces (texturized vegetable protein (TVP)) products. Malawi is cost competitive in supplying soybean pieces to both regional- and international markets (e.g. South Africa & Philippines).
 - b. Malawi is a net importer of soybean oil which can be replaced if increasing volumes of soybeans can be processed locally.
 - c. Significant expansion in processing capacity over the past decade has occurred, but lack of volumes - prohibiting optimal utilization.
 - d. Export growth potential of non-GMO soybeans and oil cake to regional- and international markets (e.g. Zimbabwe, India and Pakistan) with the potential to receive price premiums.
- Opportunity to improve smallholder yields and incomes.

Challenges



- Soybean gross margins at farm-level highest of all actors but lack competitiveness against competing industries such as tobacco.
- Poverty and associated purchasing power by Malawian consumers have limited market space for further expansion of the feed sector.
- **Existing marketing- and trading mechanisms together with availability of accurate market information are not conducive for price discovery, transmission and transparency (buying permits, minimum price setting, export restrictions, high transportation costs & complex export protocols / regulations).**
- Significant investment in processing capacity also occurred in the region which limits regional market potential (e.g. Zambia & South Africa).
- Low soybean productivity with limited opportunity for area expansion.
- Existing government production targets has the potential to create a market failure event.

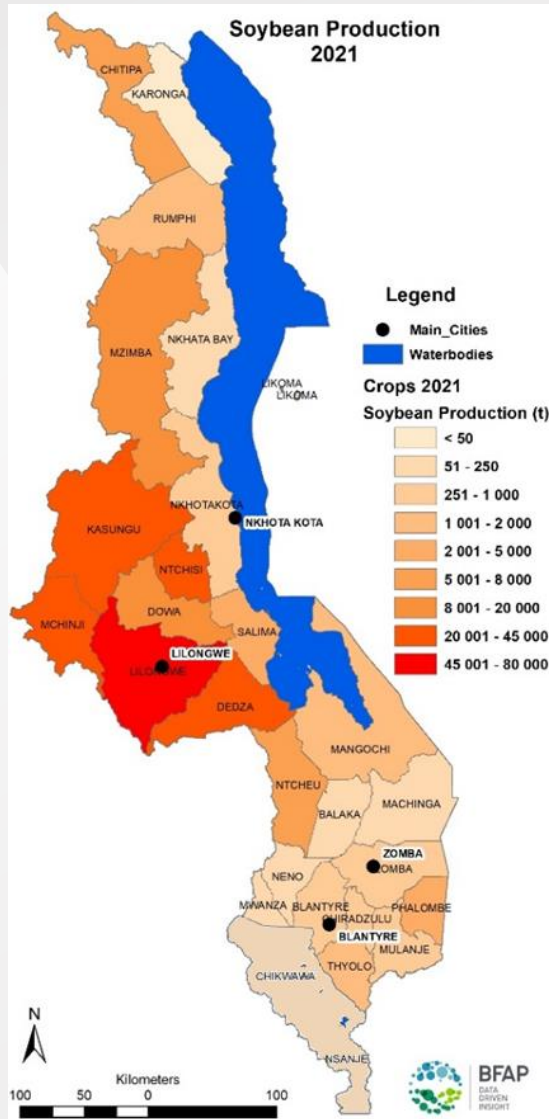
Proposed Solutions



- Local feed market development & export promotion of soybean pieces (targeted poultry reforms & efficient export licensing & market access)
- Reform targeted to improve marketing- & trading of soybean products: Revoke buying permits, setting of minimum prices, export restrictions & create a supply- and demand industry forum to promote transparency.
- Public- and private sector partnership for export promotion with productivity gains to create additional volumes for exports.

Soybean Industry Overview in Malawi

Global trend: Soybean growth underpinned by rising demand for animal feed & vegetable oils



International:

- Expansion underpinned by growth in intensive livestock sectors & biofuels
- Extraction rate of oil: soybean vs. sunflower; sunflower more conducive to replace edible oil imports

Malawi industry dynamics:

- Total area in 2023: 297,000 hectares with growth rate of 9% per annum over past decade.
- Production in 2023: 235,500 tons, increasing at 10% per annum over past decade. Production concentrated in central regions.
- Average national yields between 0.8-1.2 t/ha, lower compared to key global producers. Yield growth since 2010 = 0.8% per annum.
- Malawi has become a consistent net exporter of soybean seed and cake but remains a net importer of soybean oil and small volumes of soybean pieces.
- Significant investment has occurred in Malawi's soybean value chain in recent years, expanding the installed crush capacity to more than 600 thousand tons.
- Estimated that significant surplus crushing capacity is available. With surplus seed and import demand for edible oil, there is scope to expand crush volumes.
- Export of soybean cake: Might suggests that demand from the animal feed sector, where intensification has been slow, has not kept pace with the rate of development of the soybean value chain.
- Substantial share of the total soybean market is attributed to direct human consumption (soybean pieces).

Market structure: Supply- and demand

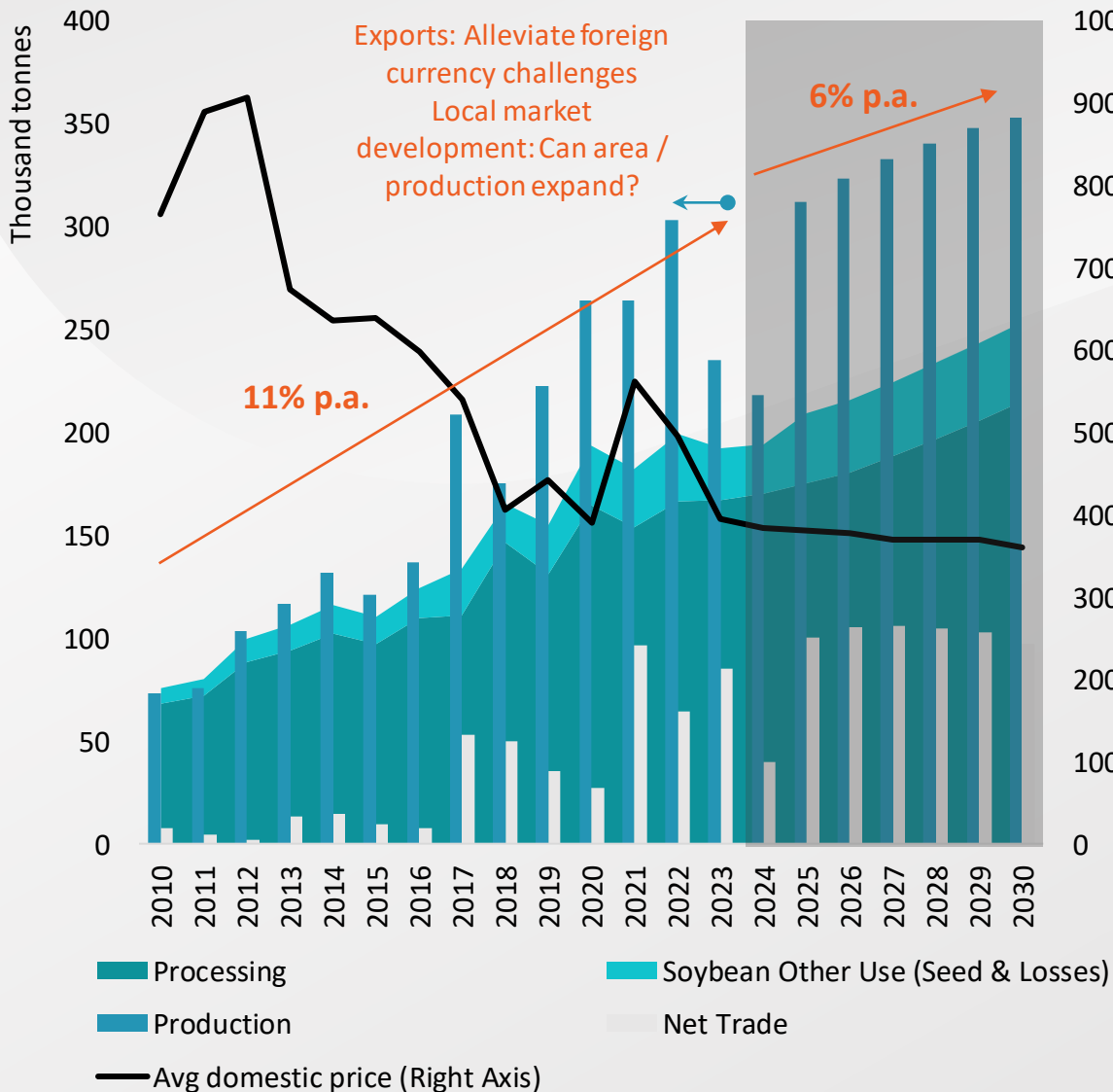
Malawi is a net exporter of soybean grain- & cake; imports oil & pieces



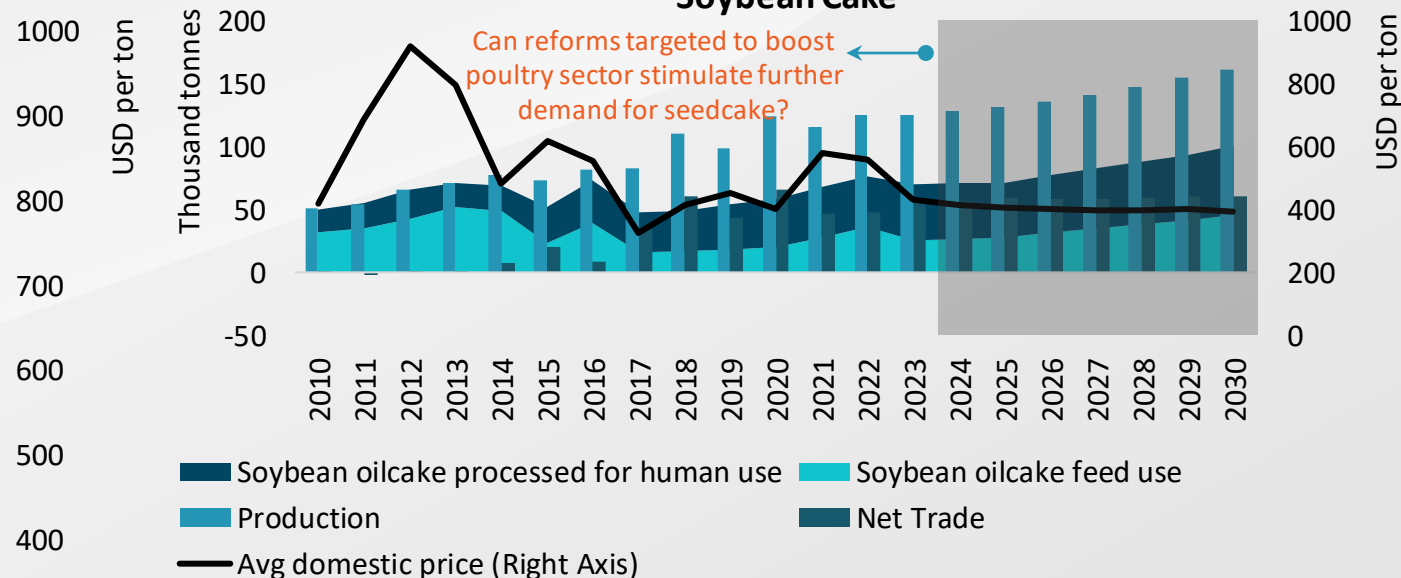
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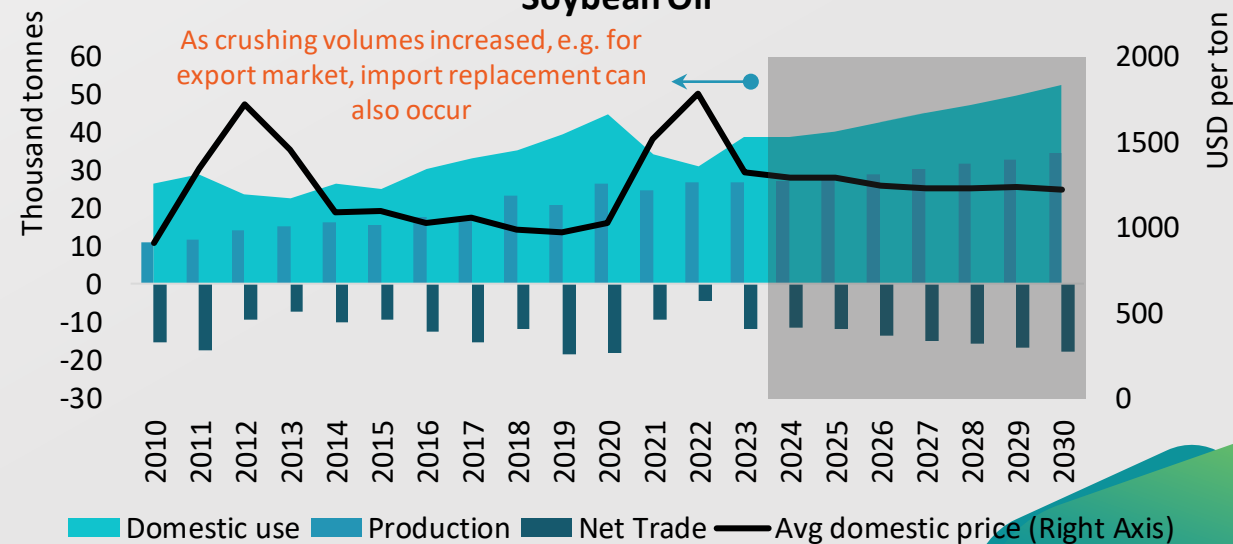
Soybeans



Soybean Cake



Soybean Oil



Soybeans have the potential to further grow FOREX earnings for Malawi through exports

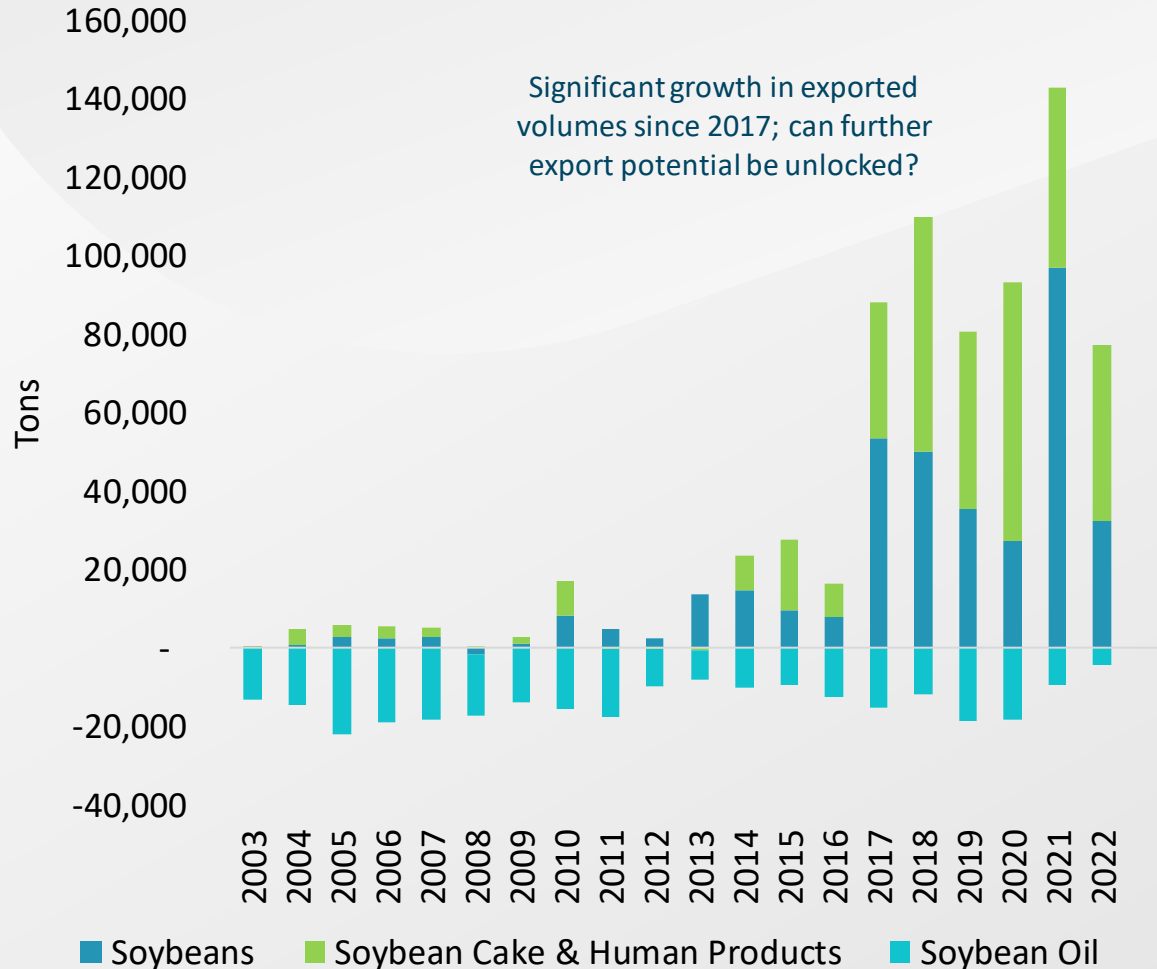
2018-2022 average: more than 60.2 million US\$ of FOREX generated



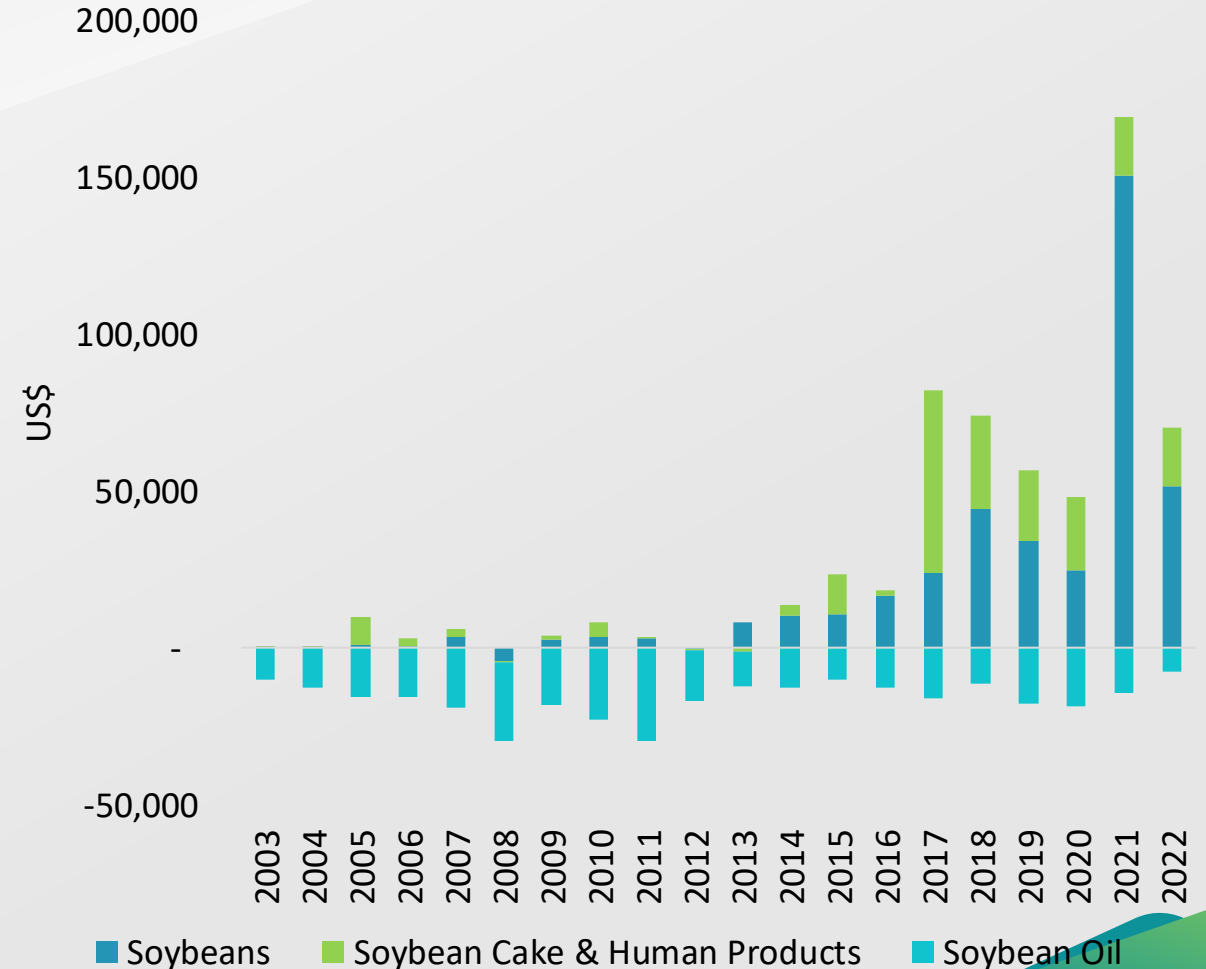
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Net trade of soybean products - Volumes



Net trade of soybean products - Value

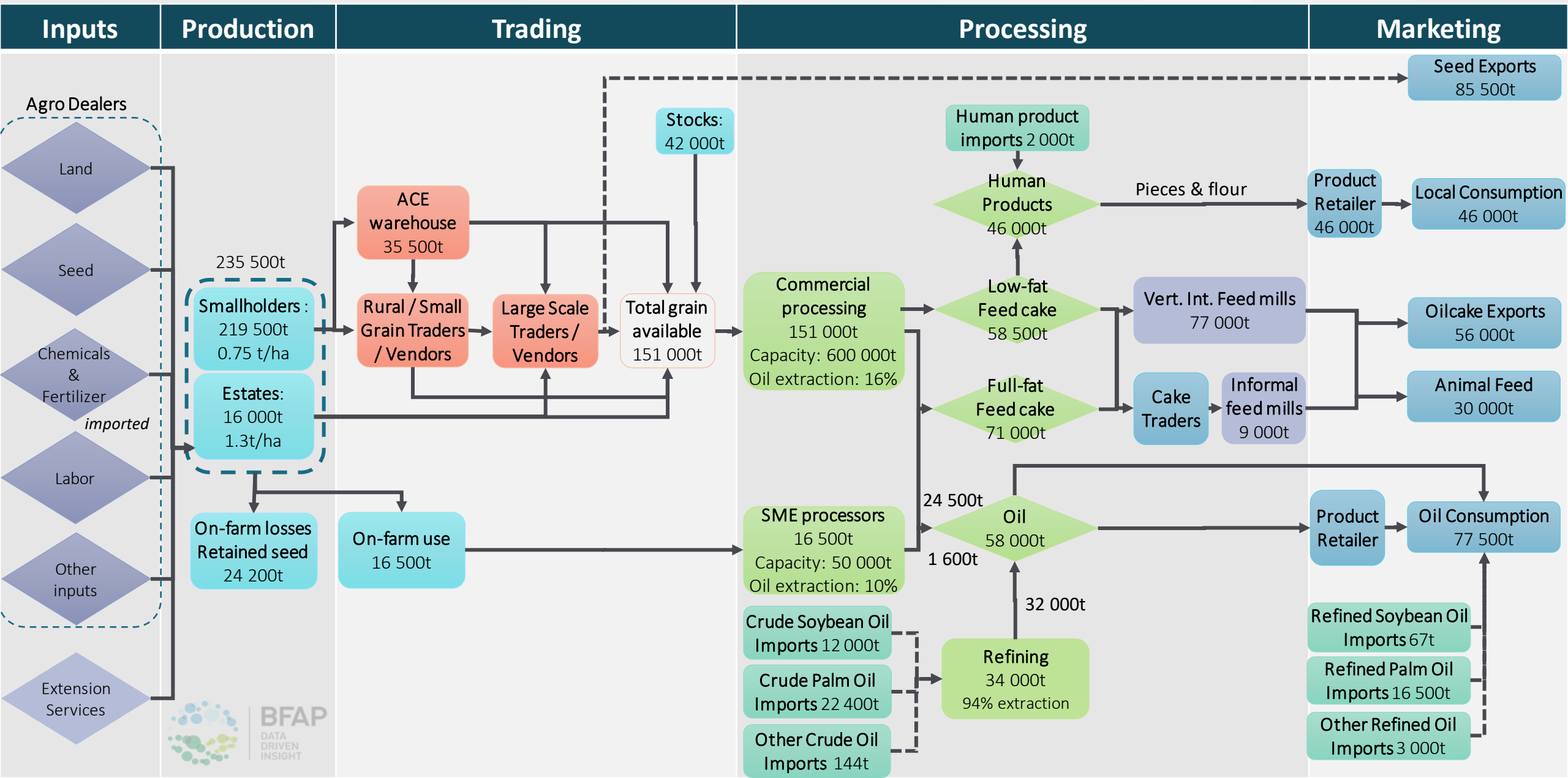


Value chain structure & product flow: Soybeans

Current state (2023)



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Value chain structure & product flow: Soybeans

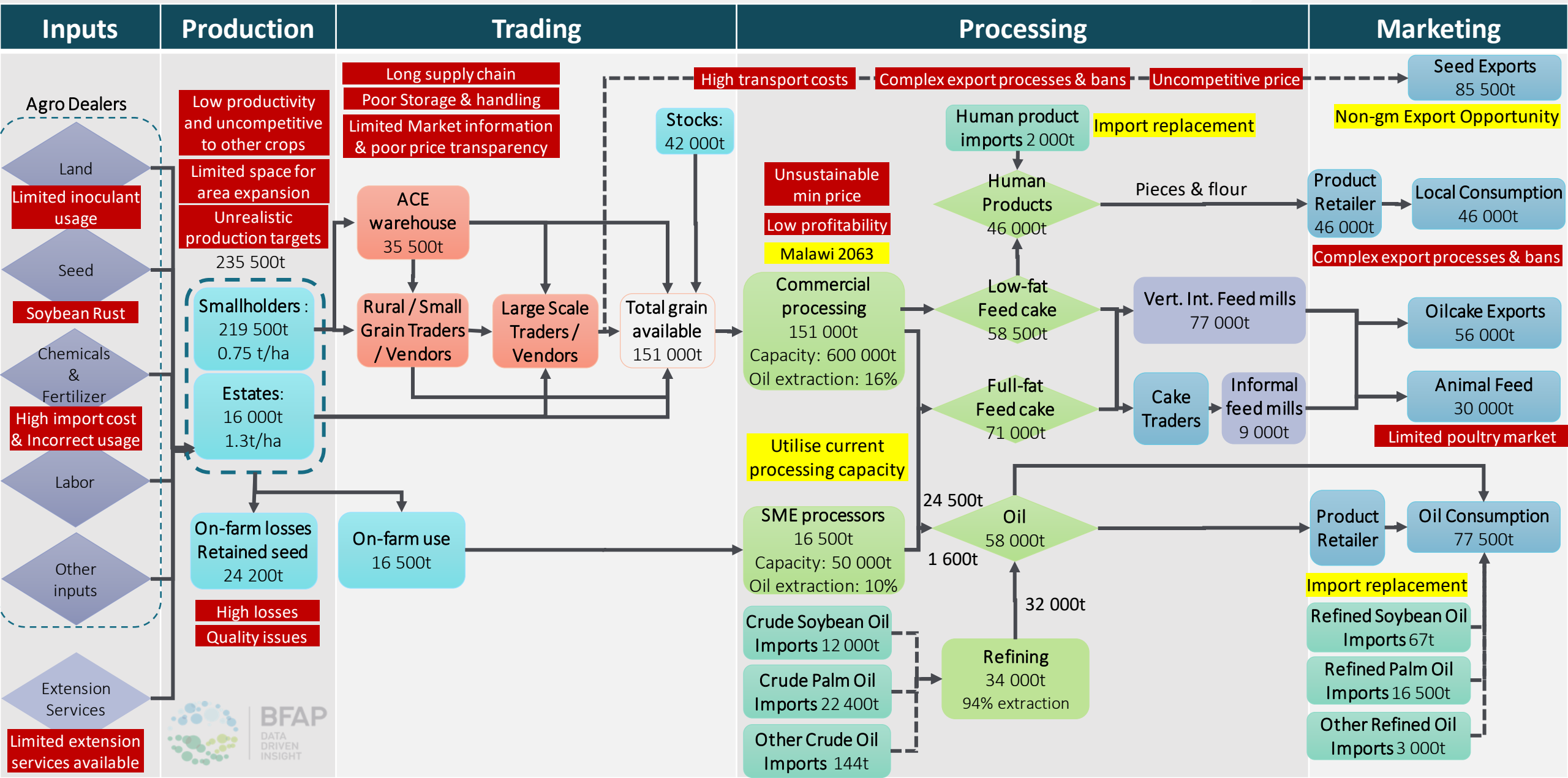
Current state (2023)

Value Chain Challenges

Value Chain Opportunity



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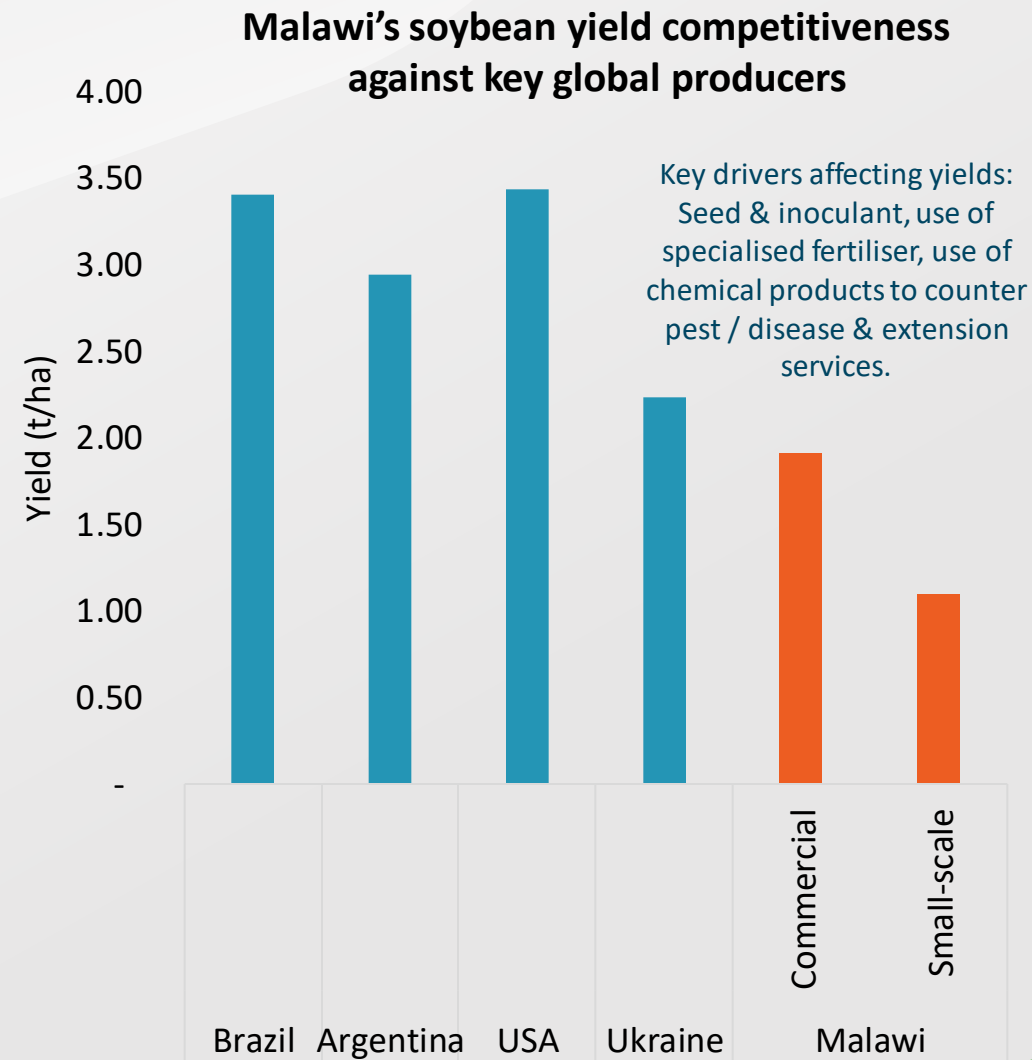
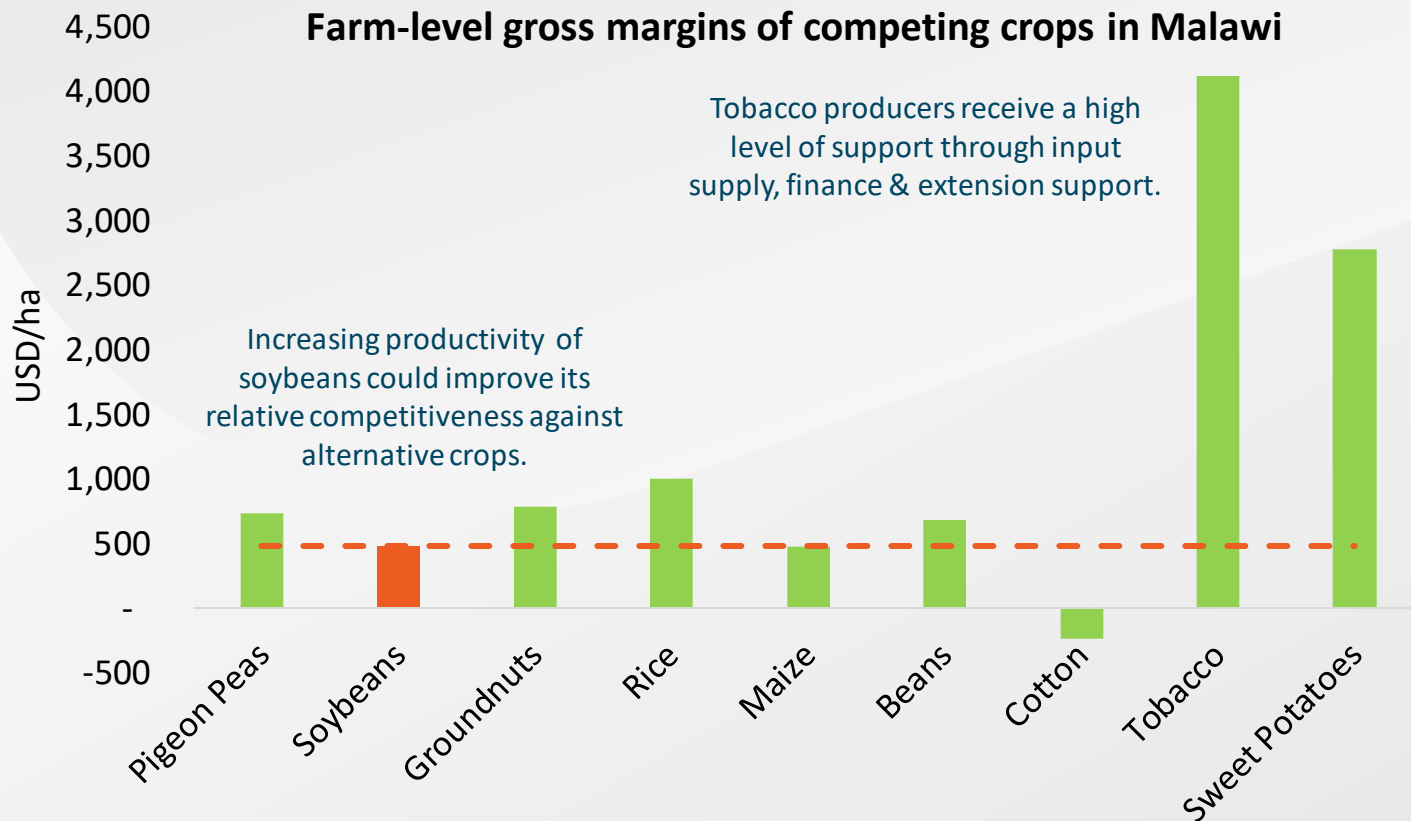


Soybeans remain uncompetitive compared to other crops

But have potential to become more competitive if productivity growth can improve



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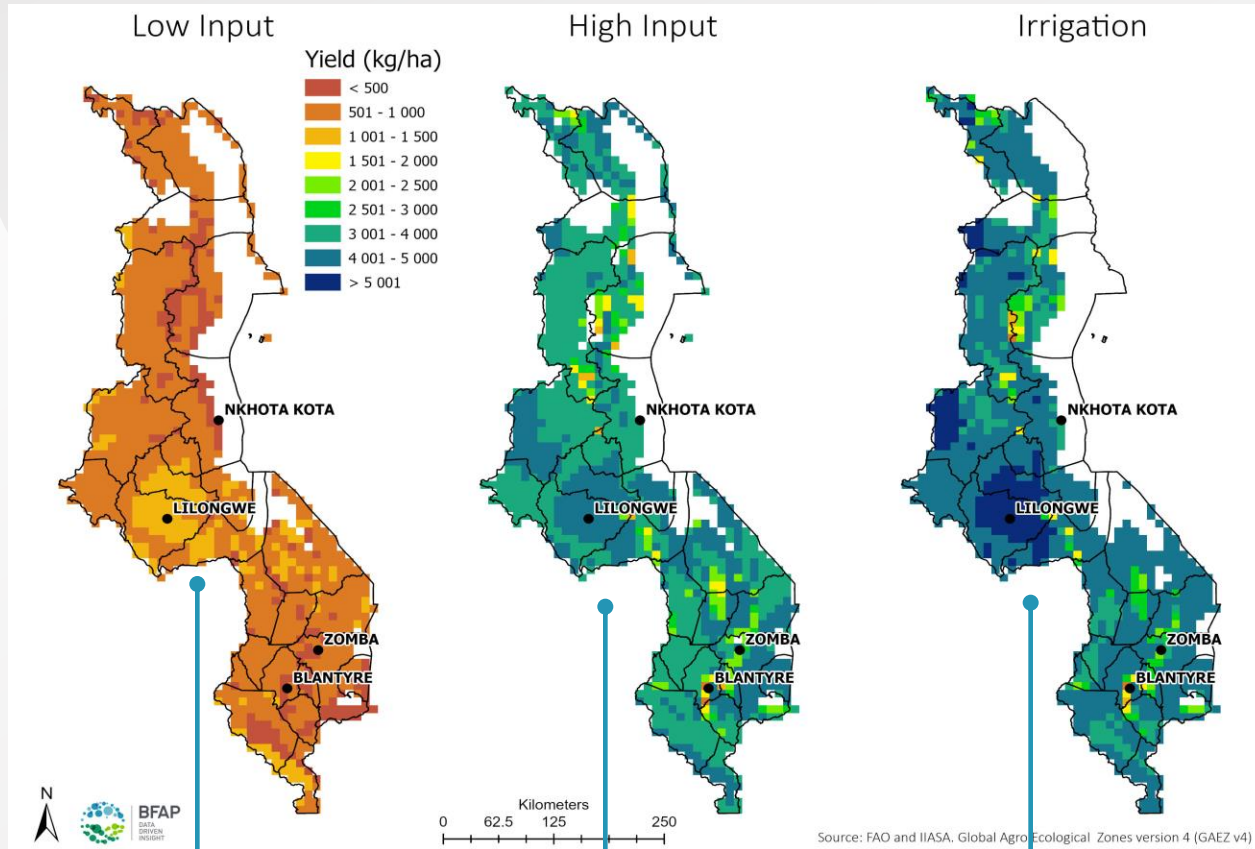
The agricultural sector remains dominated by maize and tobacco as the main staple food and source of export revenue, respectively. Maize is planted on about 50 percent of the total land cultivated while legumes only occupy about 14 percent, and the remainder is taken by the remaining crops. Tobacco alone accounted for 54.9 percent of the country's export value (Government of Malawi 2021).

Opportunity for yield growth in Malawi

Current yields not competitive & lower than potential



Soybean yield potential



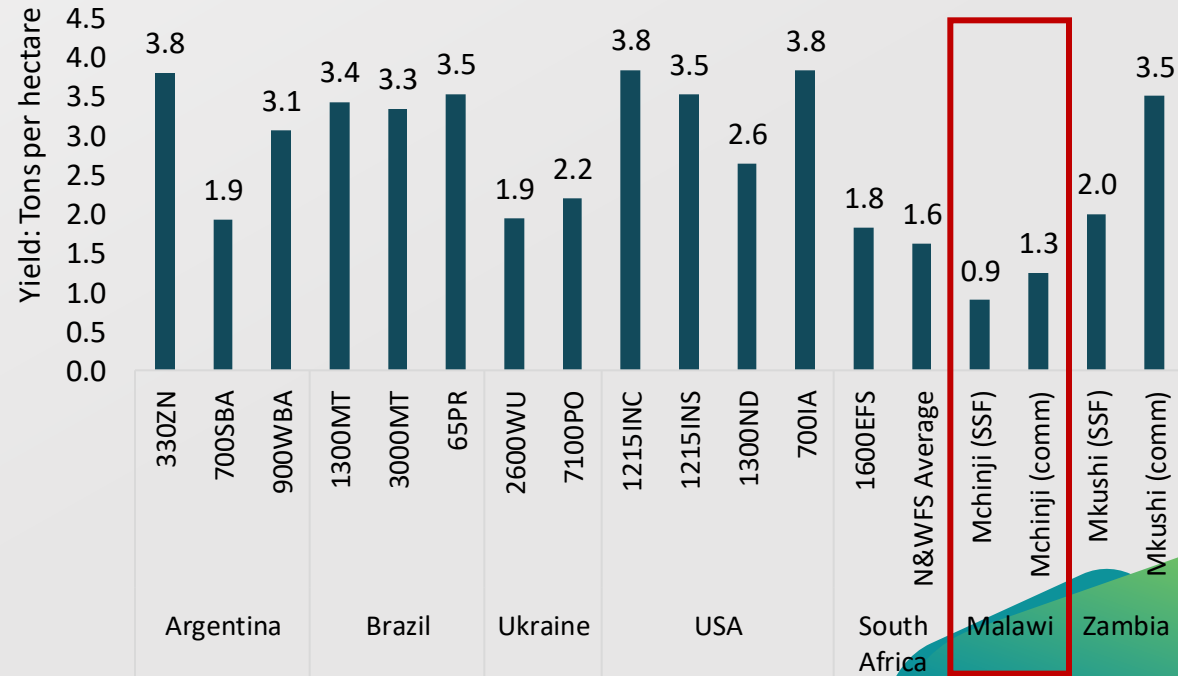
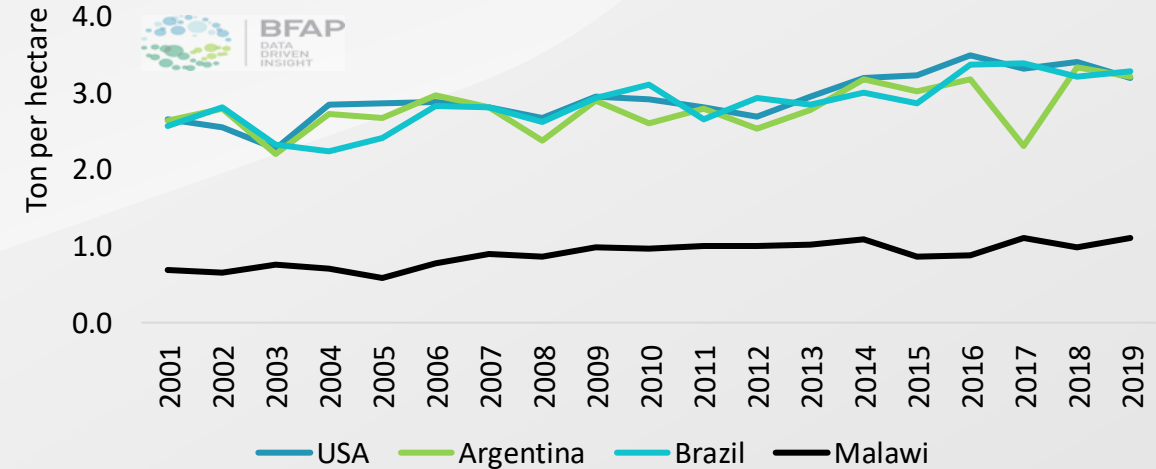
Under low-input practises, yields are not competitive (between 0.5-1.0 t/ha)

Adoption of improved farm practise coupled with input use, yields of 2.0 t/ha possible

Irrigation potential: Above 3.0 t/ha

Source: FAO and IIASA. Global Agro Ecological Zones version 4 (GAEZ v4)

Current yield performance



Overall positive gross margins in the value chain

But processors require incentive to expand crushing and increase exports

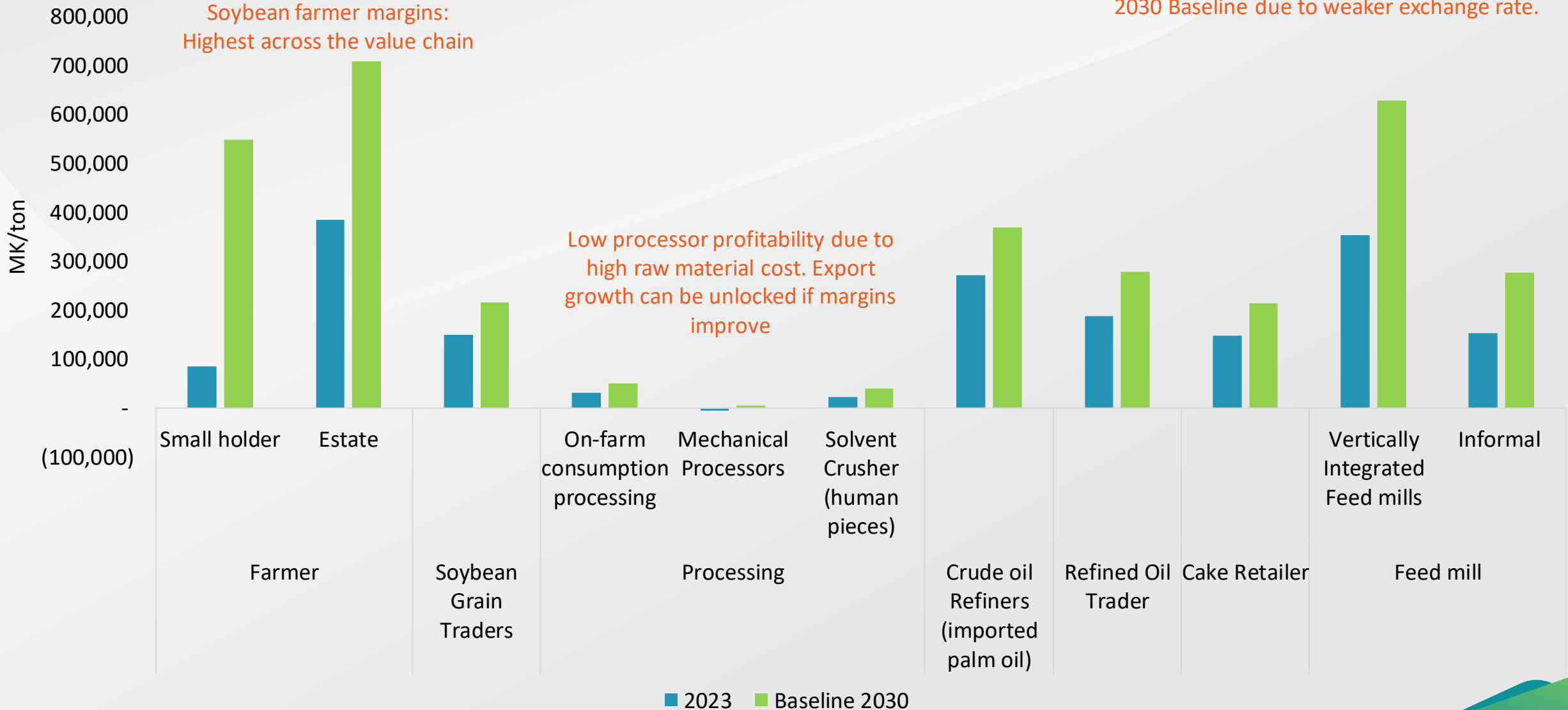


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Soybean value chain gross margins

Generally, margins in Kwacha to improve towards 2030 Baseline due to weaker exchange rate.



Marketing & trading regulations affecting growth prospects for the soybean industry; open trade & improved export efficiency can unlock further export growth



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Previous literature states that export restrictions (e.g. export bans) can create a 56% loss for the industry

Key challenges:

- 1. Buying permits** and the role of “buyer competition” in producing regions. Increased competition could stimulate higher farmgate prices.
- 2. Minimum price determination;** although the mechanism is introduced to promote higher farmgate prices, evidence suggests that this is not the case with processors paying higher than market-related prices for soybean grain and traders ultimately benefitting.
- 3. Export restrictions / bans** which create investment uncertainty and market distortion. Reductions in export volumes trigger lower prices, which in turn influences producer and consumer decisions
- 4. Complex & lengthy export regulations** together with high cost of transportation are affecting export competitiveness.
- 5. Lack of reliable supply and demand estimates** has the potential to create fear in the market in deficit seasons.

The process to obtain an export license for one consignment could take up to 56 days and requires 15 office visits / procedures and 17 documents

Step	Cost (MWK)	Time (Days)	Procedures / Office Visits	Documents	Institutions Involved
Agricultural Permit	10,000	10	3	4	MoAFS
Export Permit	0	28	3	3	MoAFS, MoIT
Currency Declaration Form	9,500	7	3	3	bank, RBM
Phyto-sanitary Certificate	2,000	7	2	0	PPS
SADC Certificate of Origin	5,000	1	1	1	CoC
Weighbridge Certificate	1,000	1	1	2	NFRA
Customs Declaration	20,000	2	2	4	MRA
Total	47,500	56	15	17	8

Mapping Export Procedures

- Export documents
 - Export license – Ministry of Trade
 - Business license – Malawi Revenue Authority (MRA)
 - Buying permit – Ministry of Agriculture and Food Security (MAFS)
 - Certificate of Origin – Chamber of Commerce
 - Certificate of SADC Origin – Chamber of Commerce
 - Phyto-sanitary certificate – MAFS – Plant Protection Serv.
 - Packing List
 - Commercial Invoice
 - Currency Declaration Form, CD1 Form – Bank
 - Customs Declaration Form, Form 12, MRA

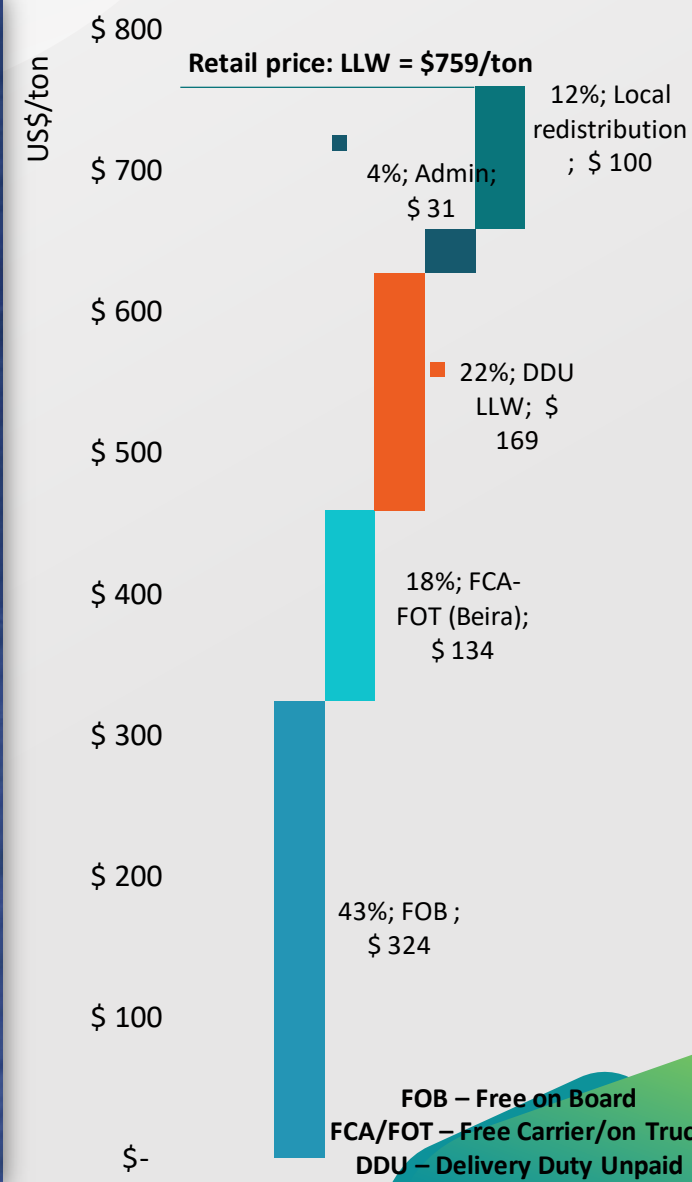
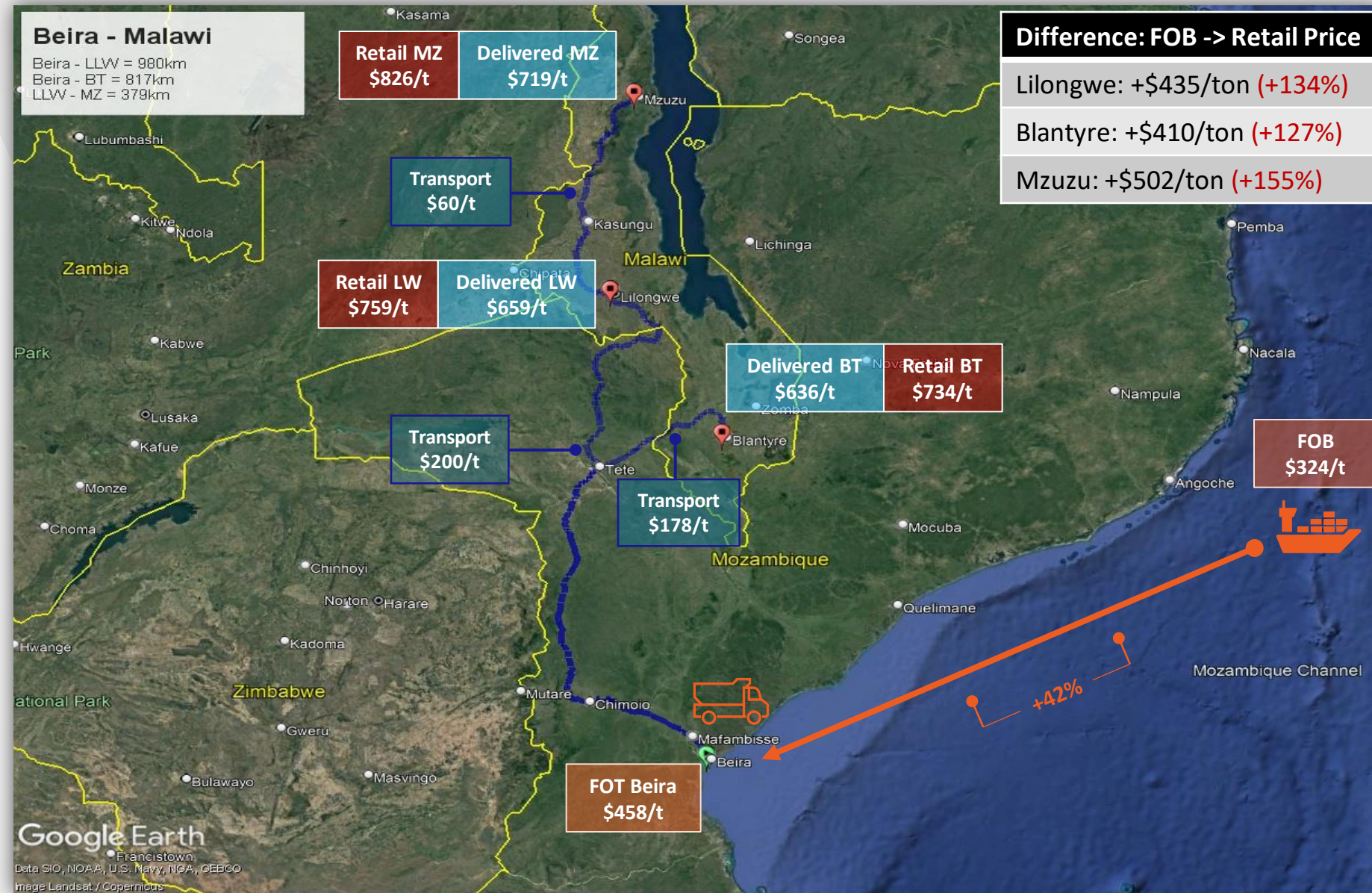


High Transport Costs

- Landlocked country. Nearest ports: Beira in Mozambique and Durban in South Africa
- Transit through Mozambique, Zimbabwe to reach South Africa. Two customs posts at every border crossing.
- Several days delays at every border, waiting for customs processing.
- Poor road conditions and long distances to reach other countries.
- Bicycles are main means to move produce to market. Internal rural market access road network barely accessible by motor vehicles.
- Restrictions on the movement of goods. Roadblocks.

Transport costs are expensive

Product prices for exports decline to such an extent that it is not economically feasible



Soybean grain price comparison & dynamics

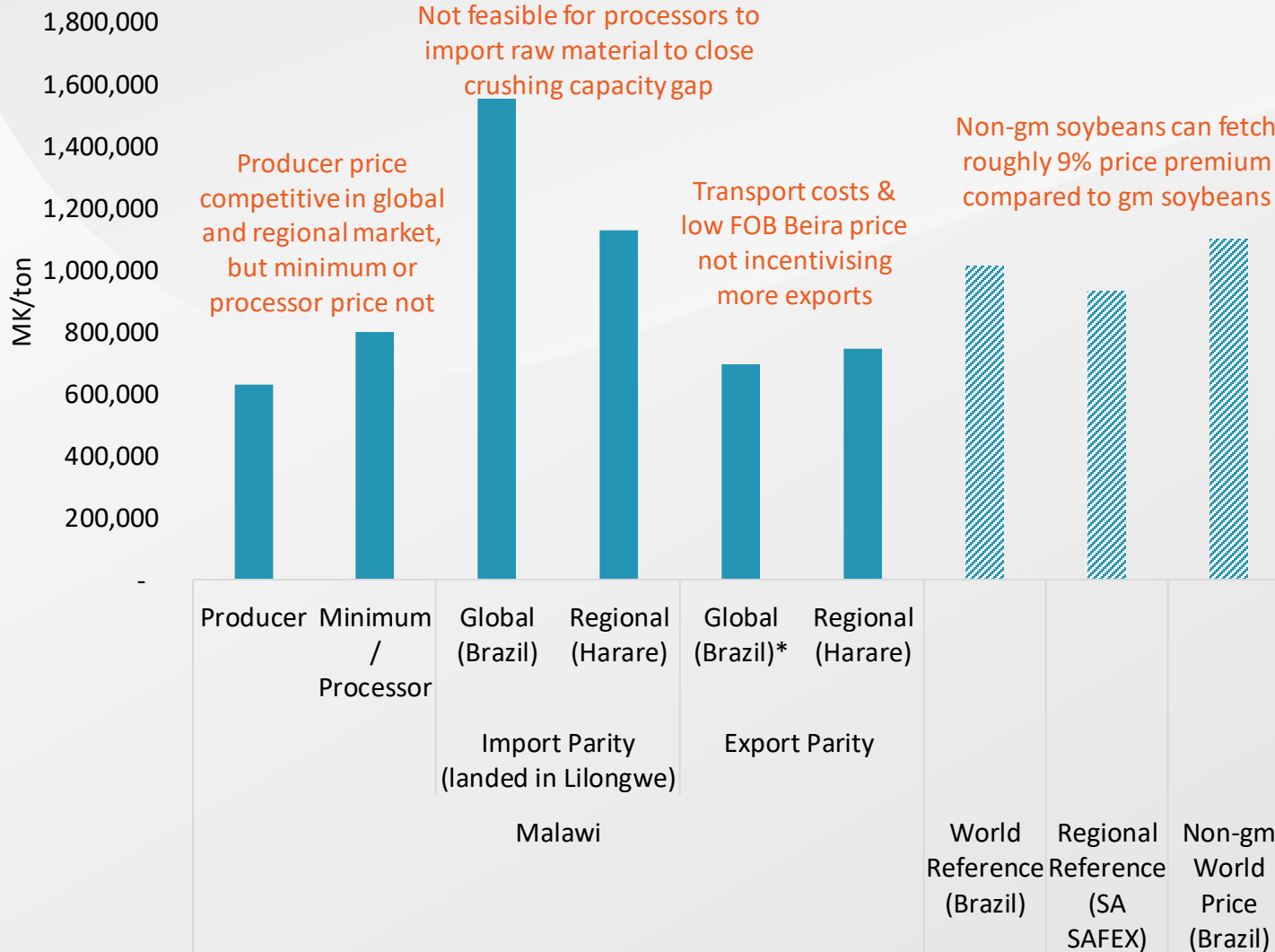


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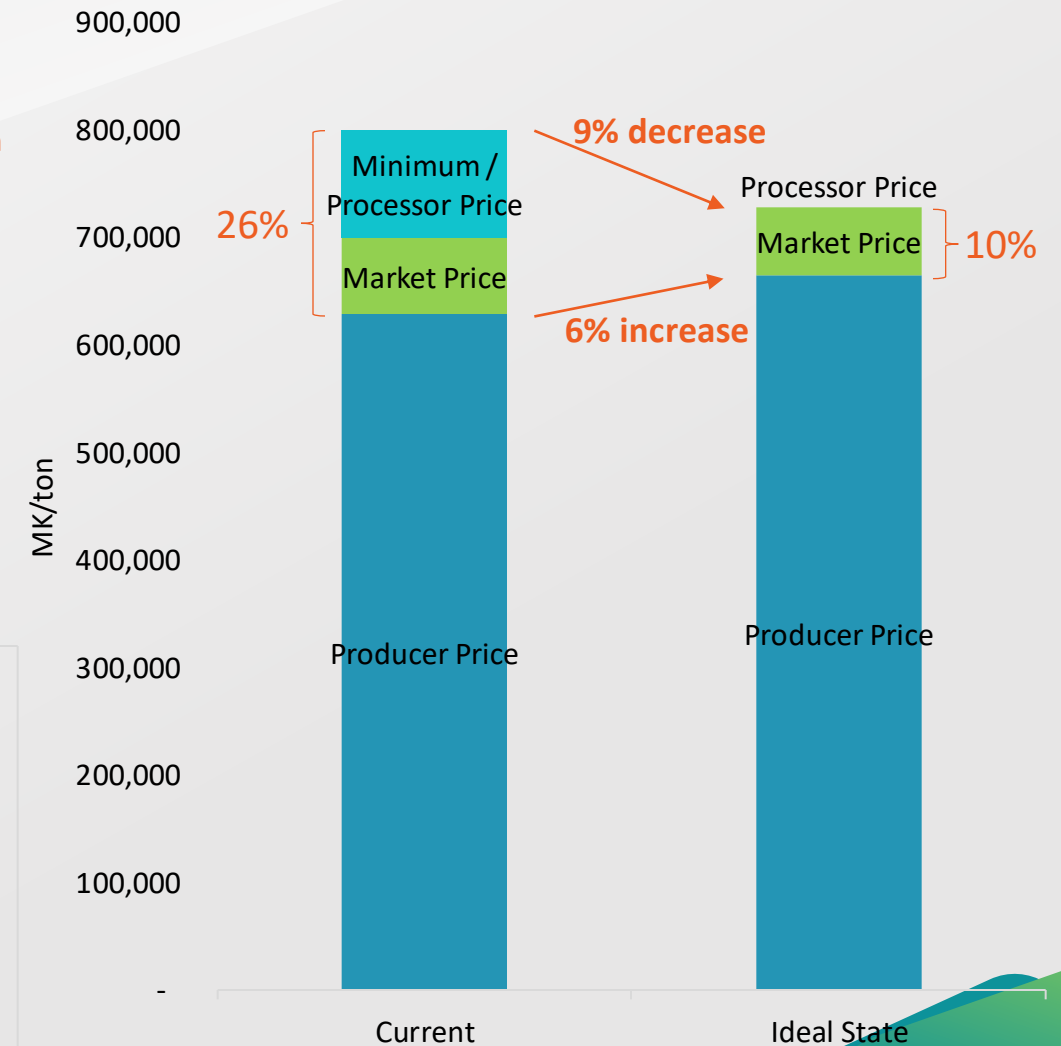


Reducing the processor purchase price, will reduce grain traders' margin, but the overall value chain will be better off, letting the industry thrive such that on absolute terms grain traders are also better off

Soybean Grain Prices (2023)



Soybean Price per Node (current vs ideal state)



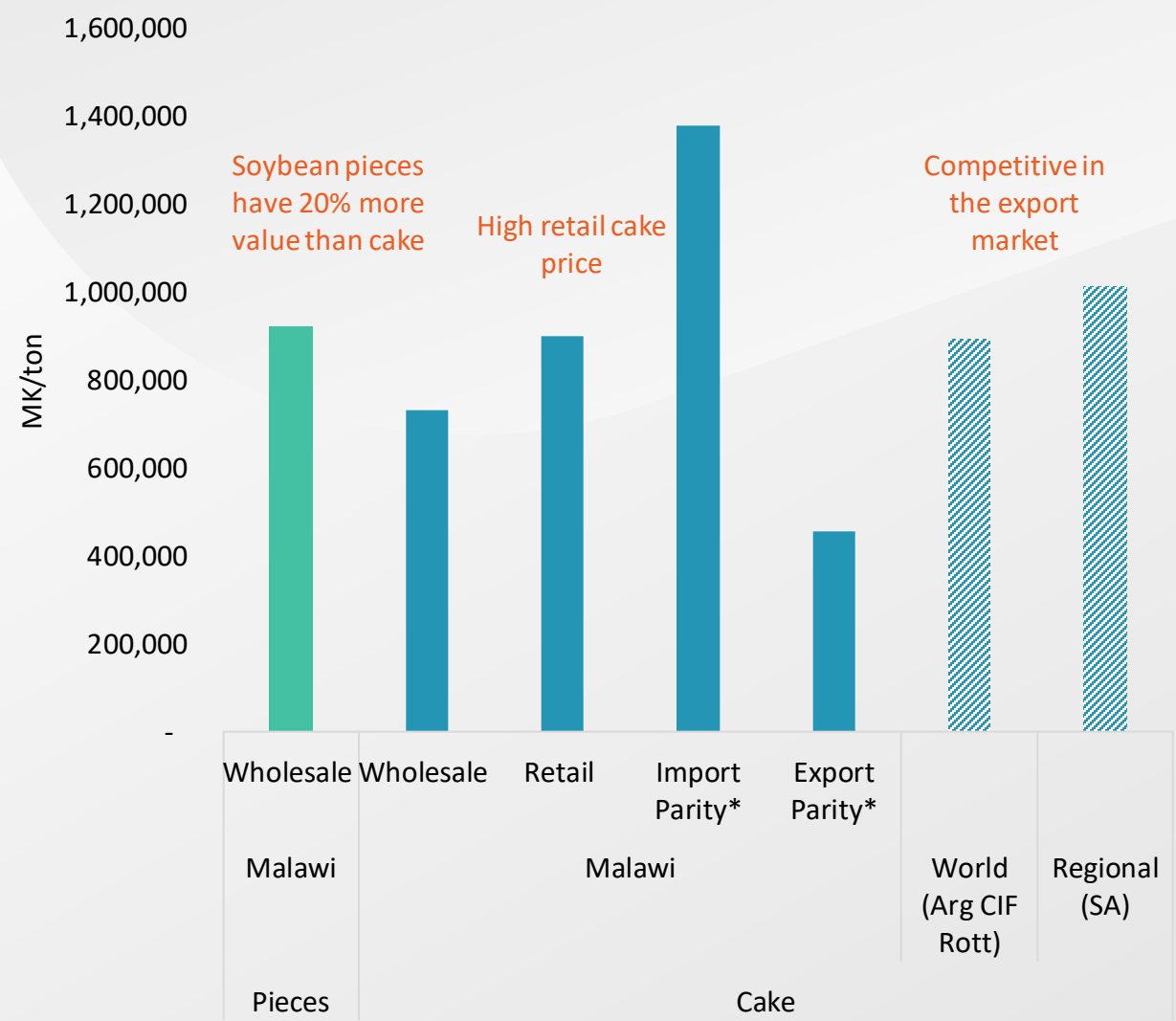
*includes non-gm premium

Price dynamics in soybean products

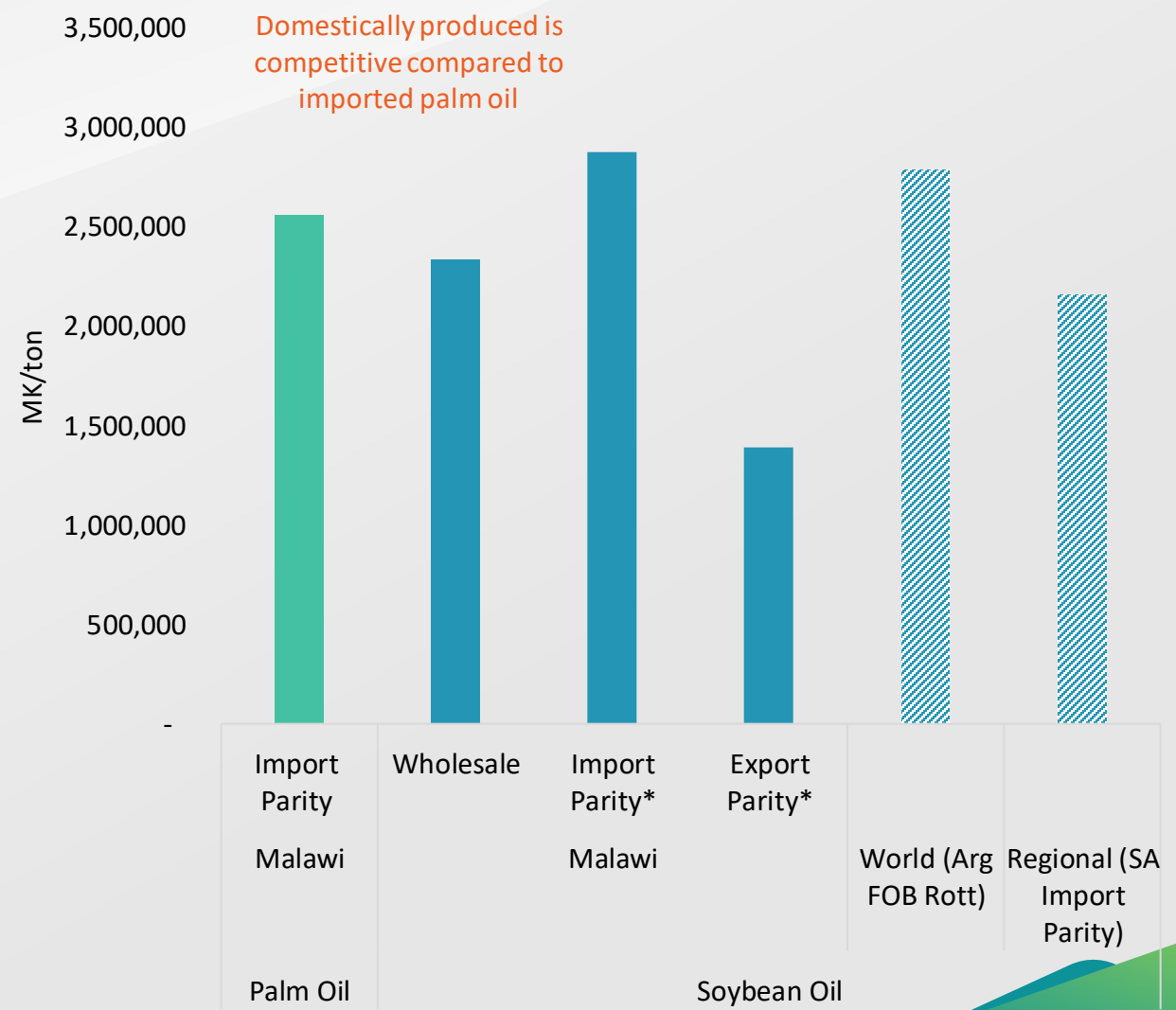
Reforms should promote more competitive pricing, especially to compete in export markets



Soybean Cake and Pieces Prices (2023)



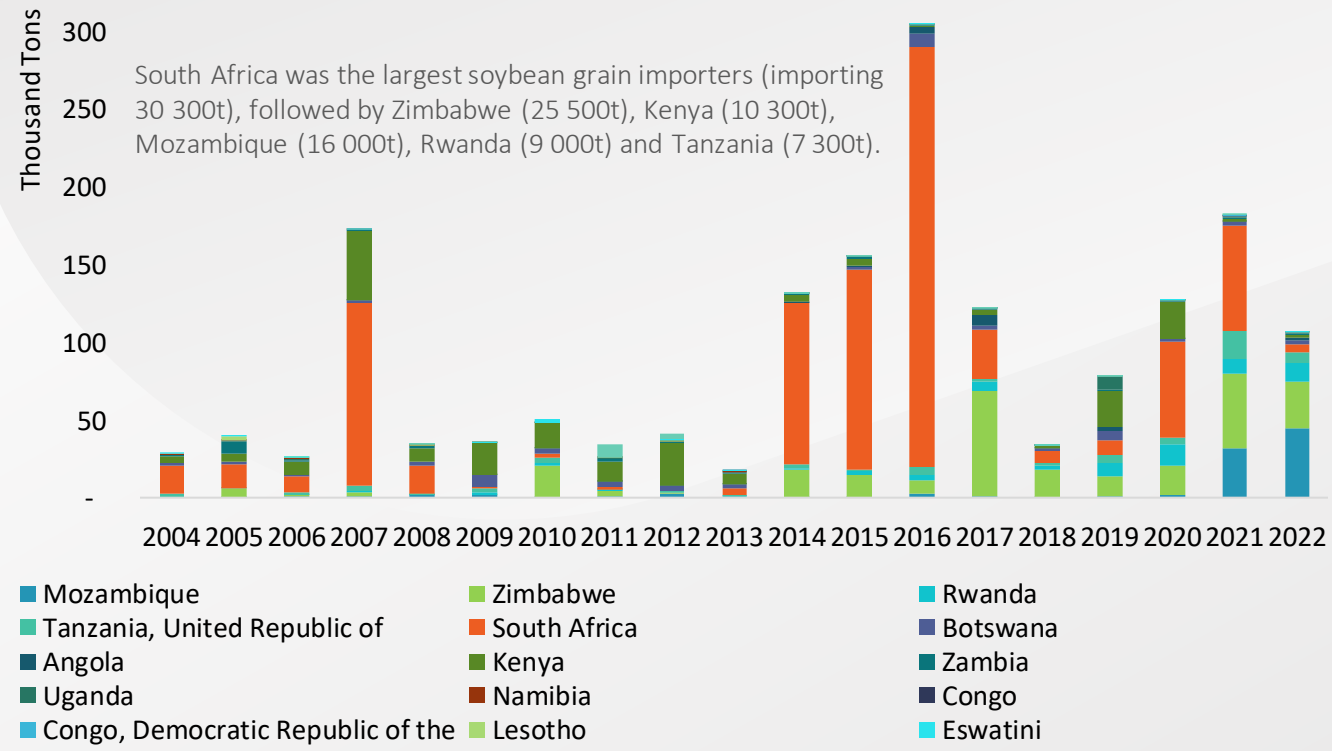
Crude Oil Prices (2023)



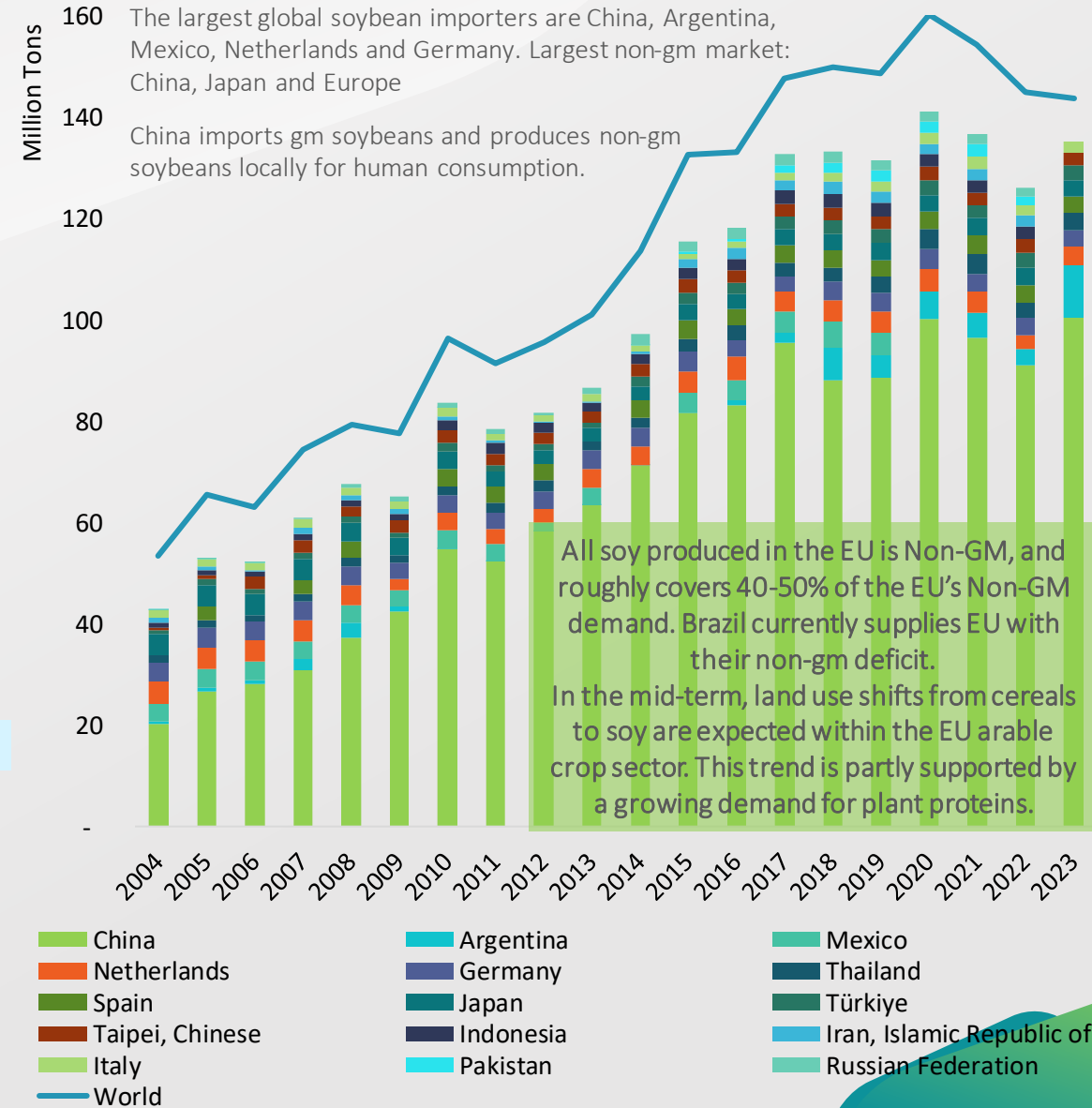
* Based on Rotterdam reference price



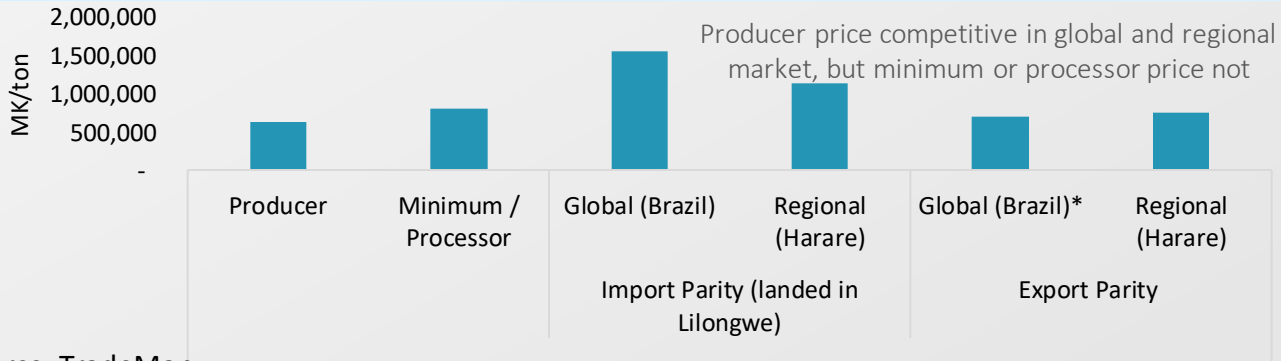
Regional Market Size (Imported Volumes)



Global Market Size (Imported Volumes)



Soybean Grain Unit Values (2023)



Soybean cake exports will face increasing competition in the regional market, but opportunities remain



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Major investments in soya crushing facilities have also occurred in the region over the past decade. (SA = 2.3mil tons, Tanzania 300 000 tons) and will compete for the same market feed markets.



- The total export market for soya meal in the region is estimated at 360 000 tons
- BUT neighbouring countries with excess crushing capacity are also driving higher production levels, which could reduce the opportunity for Malawi regional exports.
- Several countries in the region are non-GM soybean producers and only allow non-GM soybean and soymeal imports. These countries include Tanzania, Kenya, Rwanda, and Uganda. Zimbabwe is a non-GM producer but has allowed GM imports for several years. Mozambique a non-GM producer but uncertain if they will allow GM imports. Malawi is already competing with South African GM imports in Zimbabwe.
- India and Pakistan are alternative markets for non-GM soyabean exports.

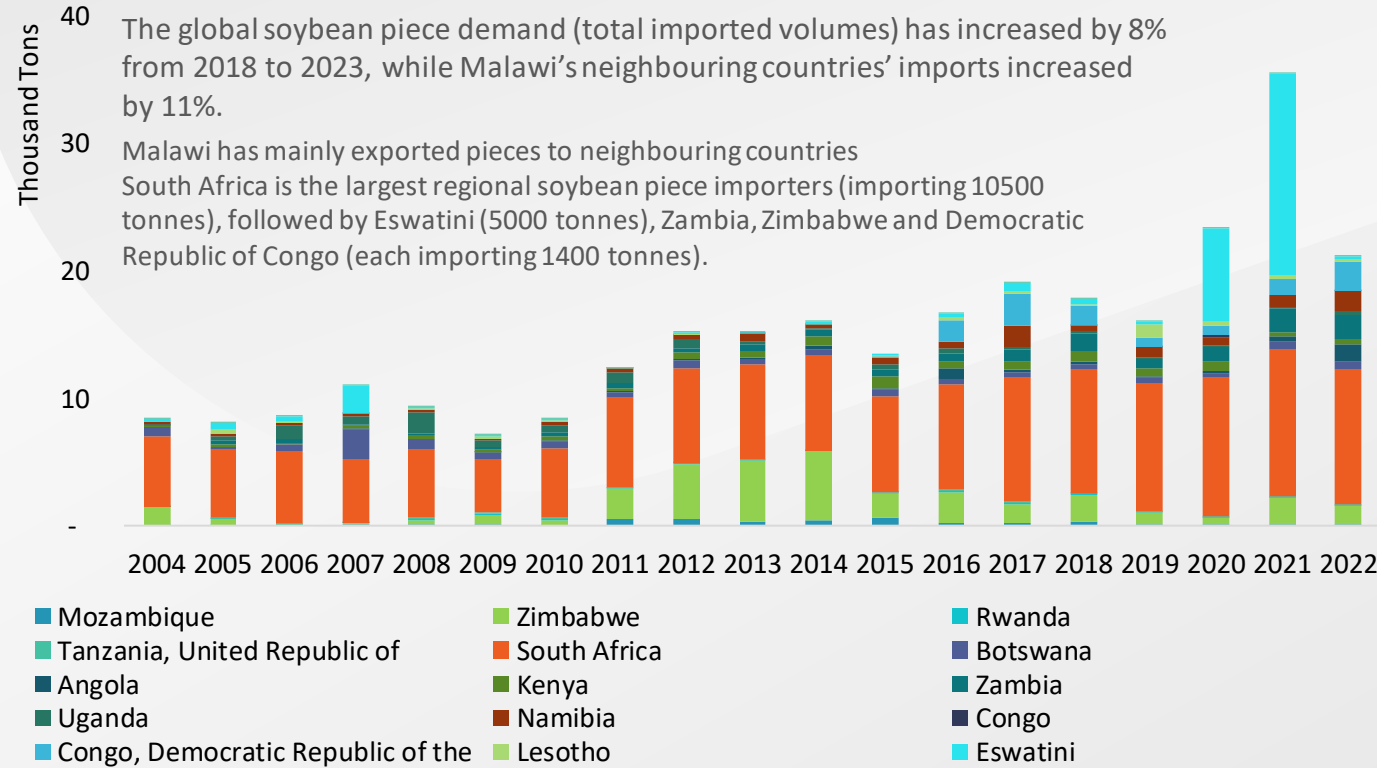
Soybean Pieces (TVP) Market Potential



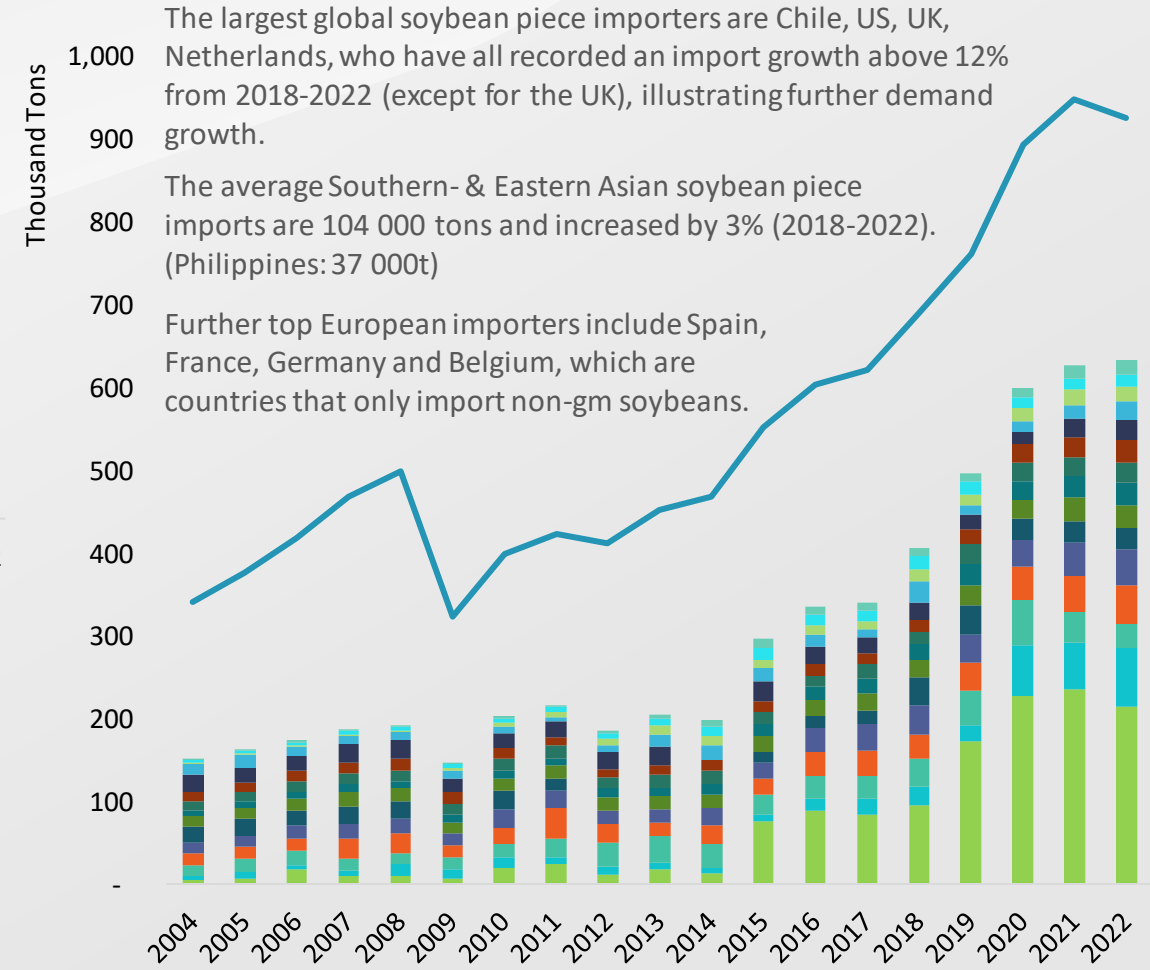
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Regional Market Size (Imported Volumes)



Global Market Size (Imported Volumes)



Soybean Pieces Unit Values (2023)



Conservative target setting in Malawi required

Current government target for soybean volumes of 1 million tons by 2029 has the risk for market failure



MINISTRY OF AGRICULTURE



Agriculture Productivity and Commercialization 2024 and 2030 Production Projections

	2023 Prod. MT	2024 Targets MT	2029 Targets MT
Maize	3,716,479	4,831,423	7,432,958
Rice	136,083	176,908	272,166
Wheat	Less 10		
Soybean	400,000	600,000	1,000,000
Groundnuts	434,762	652,143	869,524
Beans	218,889	306,445	437,778
Pigeon Peas	428,609	600,053	857,218
Cotton	20,666	24,799	41,332
Banana	935,429	1,122,515	1,870,858
Macadamia	11,400	13,680	22,800
Dairy milk	57,000	68,400	114,000
Beef	1,950,000	2,340,000	3,900,000
Goat	11,104,382	13,325,258	22,208,764
Piggery	9,312,073	11,174,488	18,624,146
Poultry	216,342,218	259,610,662	432,684,436



- Government aims to increase production volumes to 1 million tons by 2029 from existing levels of around 300,000 tons.
- Assuming the following:
 - Area remain constant = yield response of 4.7 t/ha is required.
 - Yield remain constant = area expansion of 860,000 ha required.
- At these production targets:
 - Further investment in processing capacity will be required.
 - Not sufficient local demand to absorb these volumes.
 - Soybean product prices will have to decrease to shift additional volumes into the regional- and international markets.
 - Consequently, gross margins of value chain actors will decrease, for some, turning negative.
- From a market-led lens, more sustainable targets need to be set.



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Quantifying impacts of interventions

Reforms suggested from deep dive



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Interventions proposed to upgrade VC to future state

1

Local feed market development & soy-pieces export promotion

- Feed market development & export promotion of soybean pieces
 - targeted poultry reforms to absorb more oilcake in domestic animal feed market
 - efficient export licensing & market access

Objective: Development of local feed market & divert exported seedcake into further domestic processing destined for TVC export market.

3

Soybean & oil cake export promotion

- Public- and private sector partnership for export promotion with productivity gains to create additional volumes for exports.

Objective: Improved export efficiency, reduced costs (including opportunity) and surety to drive up exports of oil cake and non-GMO raw material.

2

Marketing & trading regulation reforms

- Reforms targeted to enhance marketing- & trading of soybean products:
 - Removal of buying permits, setting of minimum prices, export restrictions (promote open market)
 - Create a supply- and demand industry forum to promote transparency & market information

Objective: Create incentive for producers & processors by improving farmgate prices and reducing raw material purchase price by processors to expand production- and exported volumes.

All nodes in the value chain realise a higher gross margin, except for grain traders

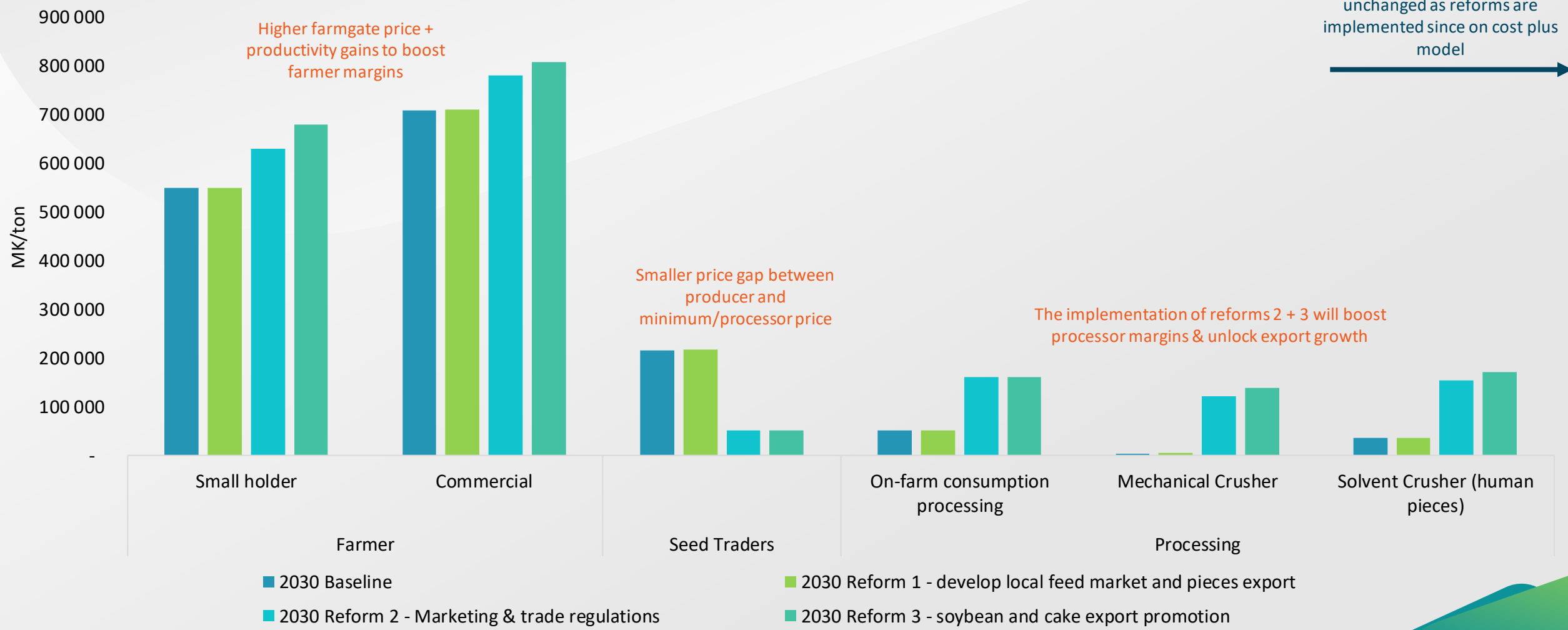
Significant improvement for producer and processor gross margins



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Soybean Value Chain Gross Margin per Node



Impact of reforms in Malawi soybean industry

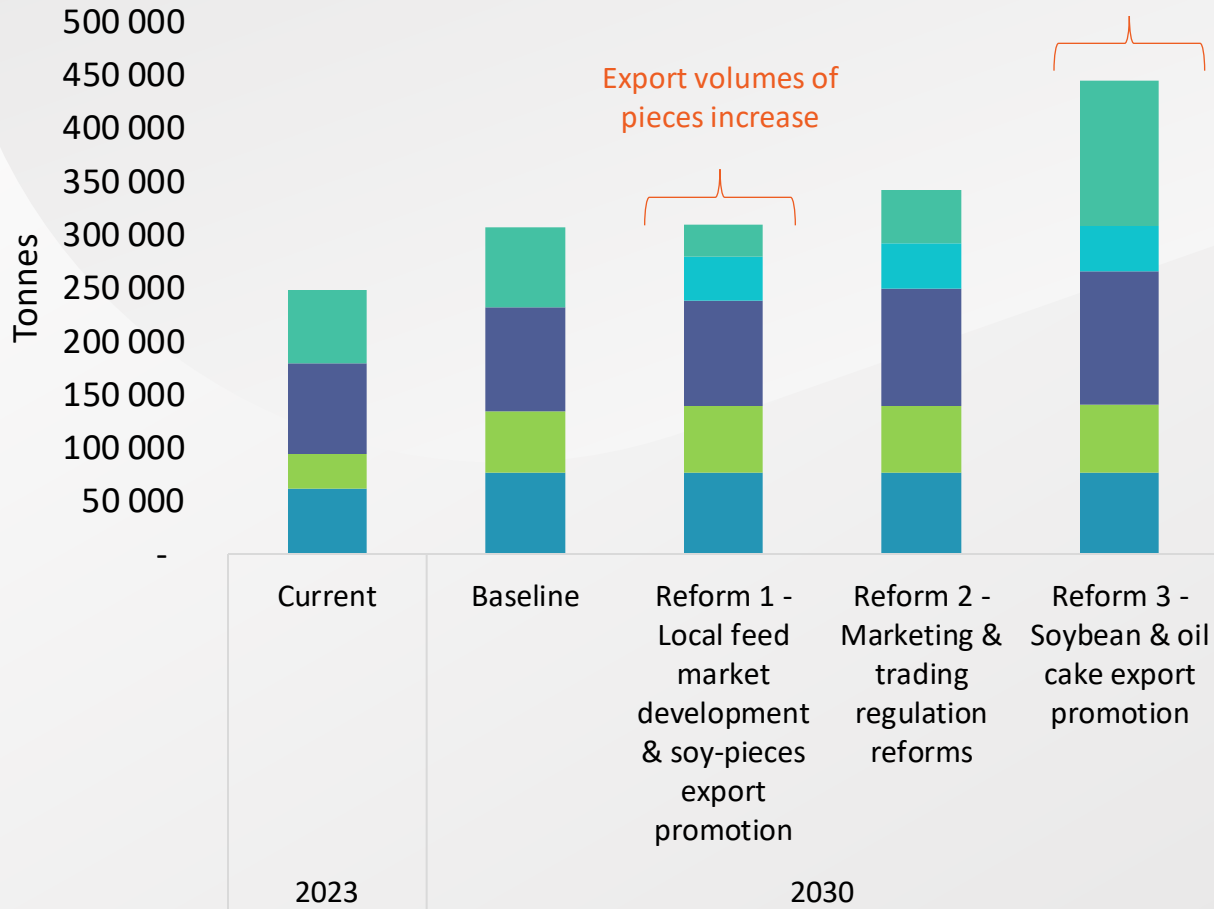
Targeted reforms can add 150,000 tons of soybeans above the 2030 baseline



Raw Material Market

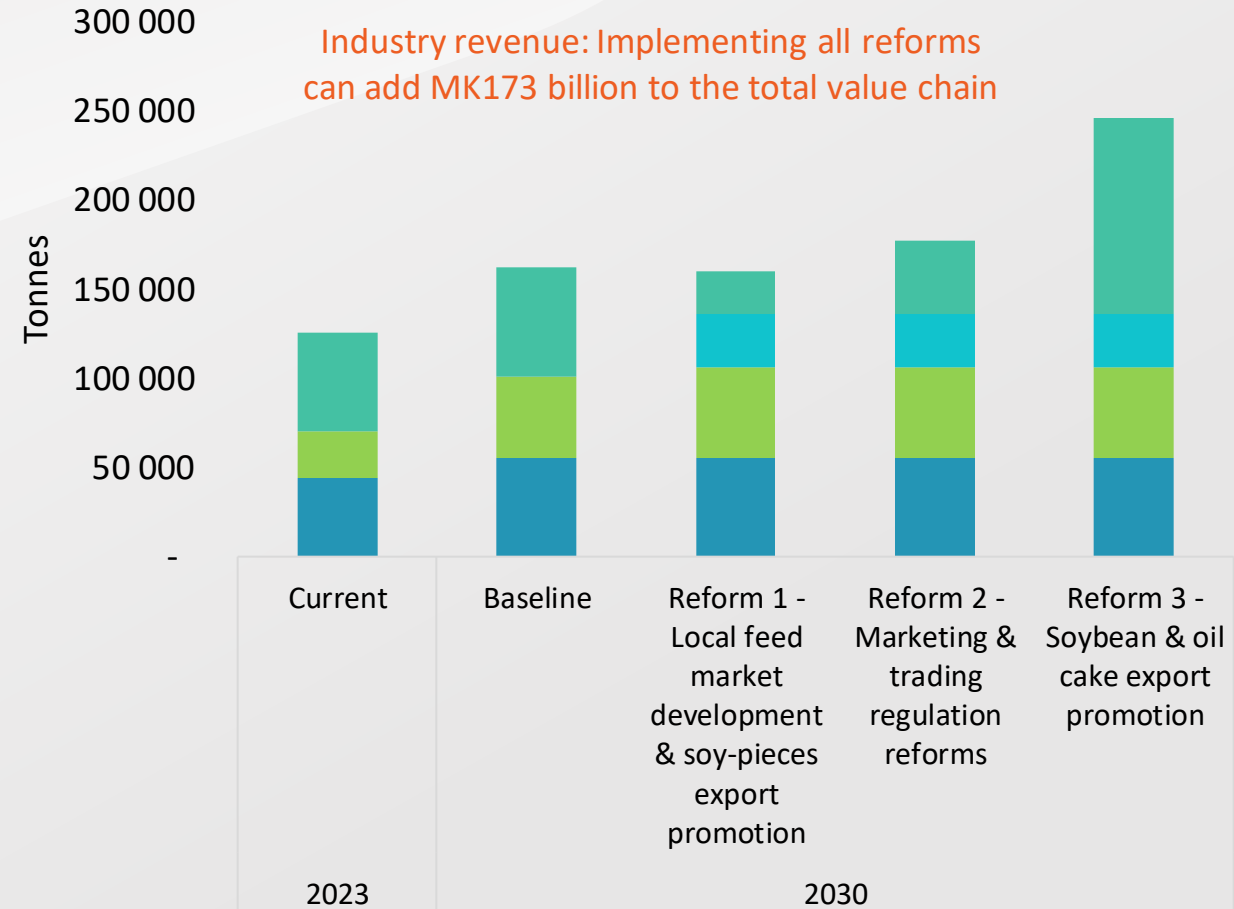
Soy oil cake + soy grain exports increase

Export volumes of pieces increase



Product Market

Industry revenue: Implementing all reforms can add MK173 billion to the total value chain



- Local Soybean Piece
- Soybean Grain Exports
- Soybean Cake Export

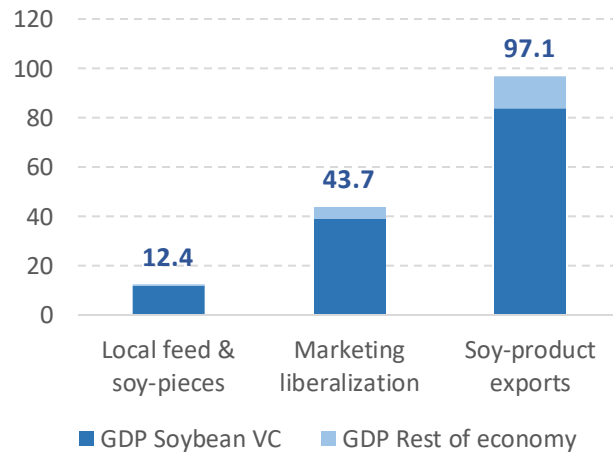
- Soybean Cake in Local Feed
- Export Soybean Pieces

- Local Soybean Piece
- Export Soybean Pieces

- Soybean Cake in Local Feed
- Soybean Cake Export

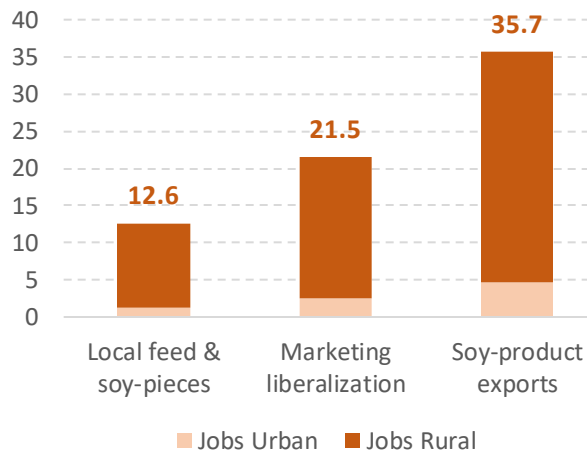
Soybean Reforms: Economywide Effects

Increase in national GDP (\$ mil.)



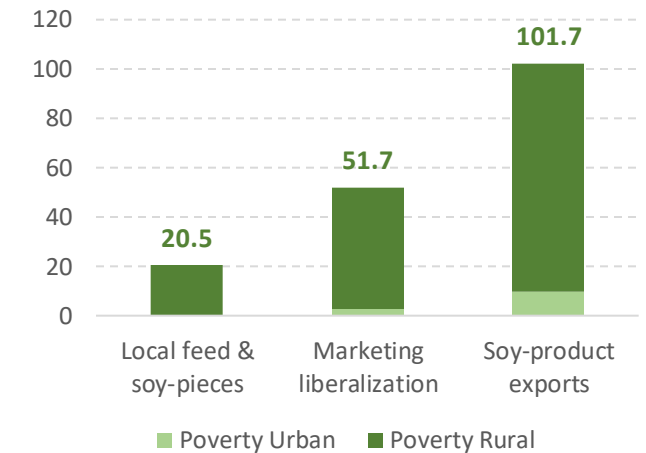
- GDP gains ranging from \$12 to \$97 mil. by 2030 relative to baseline (in the third reform that equates to 0.6% of GDP)
- Soybean value chain includes soybean farming, processing (e.g., oil and oilcake), and animal feeds
- Most gains (98%) concentrated within soybean value chain under first reform
- Gradually multiplier effects strengthen, e.g., under third reform for every \$1.00 growth in the soybean value chain, \$0.16 is generated in the rest of the economy

Number of jobs created (1,000s)



- Between 12,600 and 35,700 jobs created by 2030 relative to baseline employment of 9.8 mil.
- Majority of jobs (~90%) are in rural areas in soybean farming, even though reforms entail significant capacity expansion and productivity gains in the off-farm components of the chain

People lifted out of poverty (1,000s)



- Relatively strong poverty impacts, with between 20,500 and 101,700 people lifted out of poverty by 2030 relative to baseline poverty of 9.4 mil. people.
- Most poverty reduction in rural areas, which is also where 95% of the poor live in 2030



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Thank you

Industry revenue: Implementing all reforms can add 173 billion additional MK to the total value chain

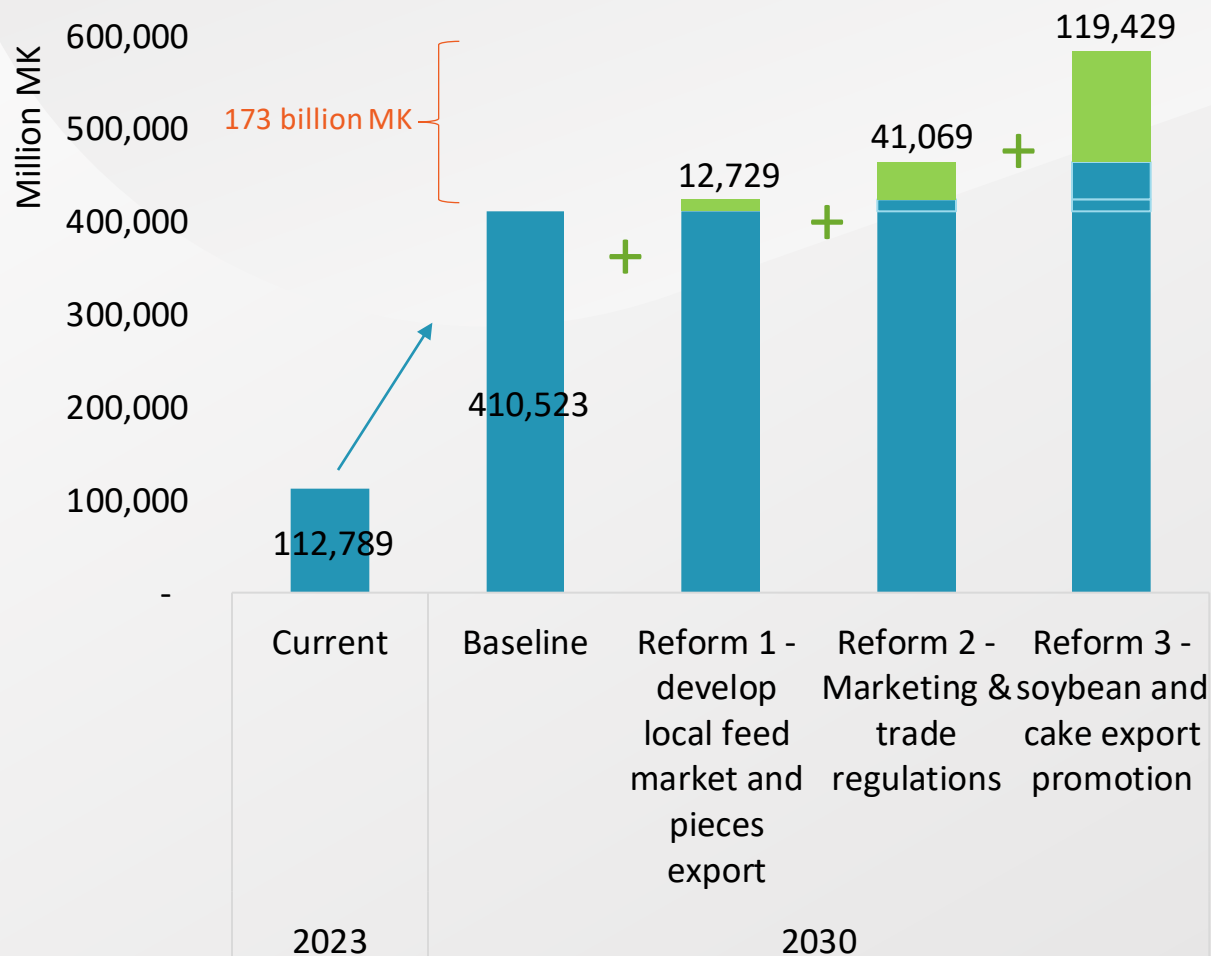


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Additional revenue generated by reform

Total value of absolute gross margins (volume x margin) – Value Chain



Total value of absolute gross margins (volume x margin) - Producers

