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PPVC: Policy and investment prioritization through VC analysis

Broiler Value Chain Deep Dive

Stakeholder Feedback, Lilongwe

28 May 2024

Malawi has ample potential to grow poultry production, unlocking widespread benefits through its highly integrated value chain

Opportunity

Chicken is a **preferred protein source** in Malawi and despite limited spending power, consumption has grown rapidly – more growth is possible if **affordability can be improved**

Given its **integrated nature** – expansion in chicken production can also create growth in multiple other value chains, such as feed, maize and soybeans

Malawi already uses **top genetics** – feed cost improvements will be more beneficial than in many neighbouring countries

Challenges & constraints

Feed costs are high and exceptionally volatile due to volatility in raw material markets, particularly maize as the main energy source in rations – high input costs keep chicken expensive

Foreign exchange constraints make it difficult to procure imported inputs which are critical to productivity

Proposed interventions

Remove VAT on soybean oilcake to improve affordability for inclusion in feed

Promote maize production under irrigation through targeted AIP program & **enable maize exports** – **consistent surplus production** ensures affordability but requires improved productivity

Facilitate formalization of chicken exports to unlock additional market in Mozambique

Recalibrating targets to industry size

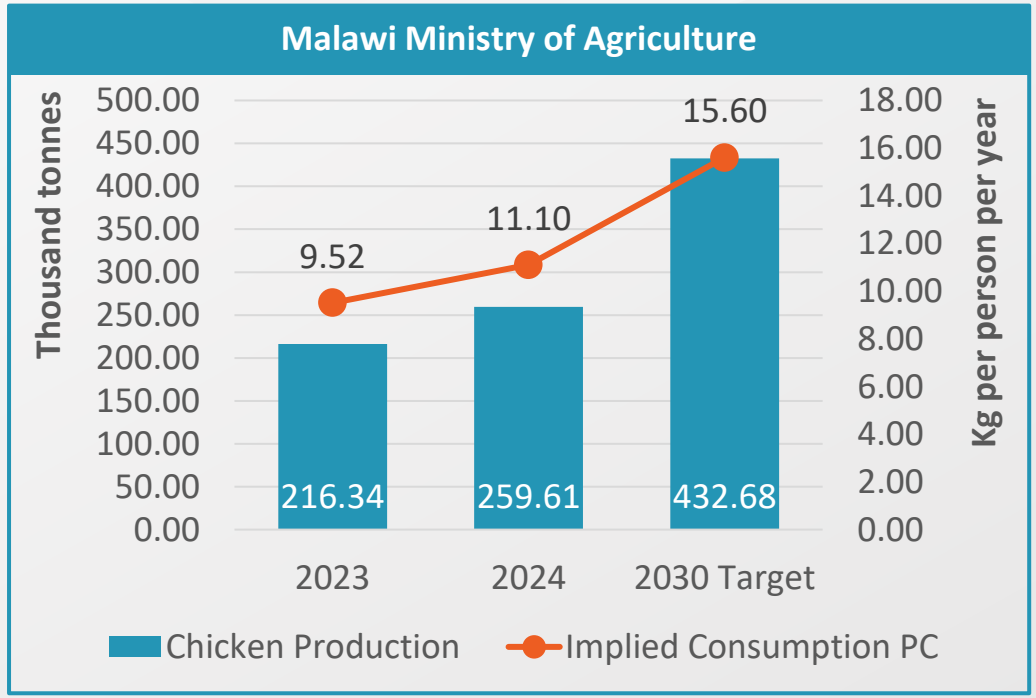
PPVC Deep Dive suggests that the poultry industry is less than 40% of what current ministry estimates suggests

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
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

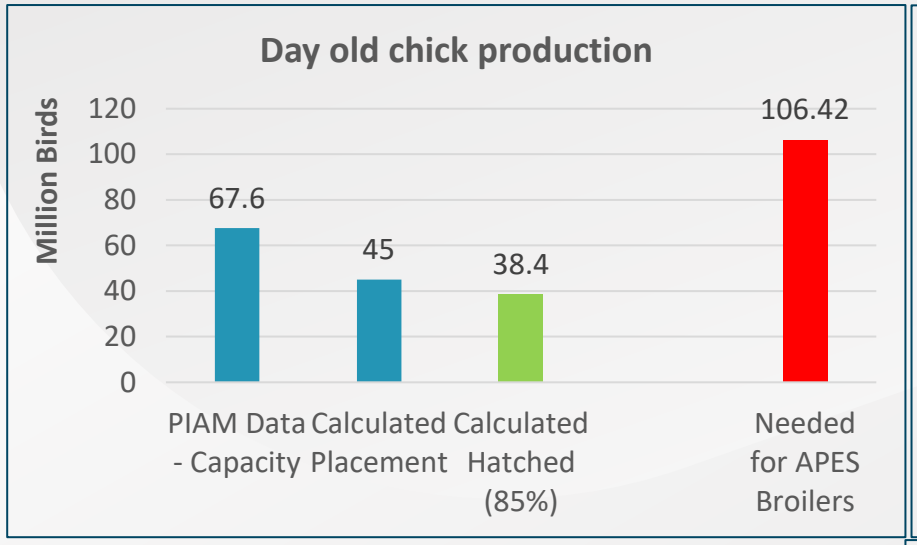


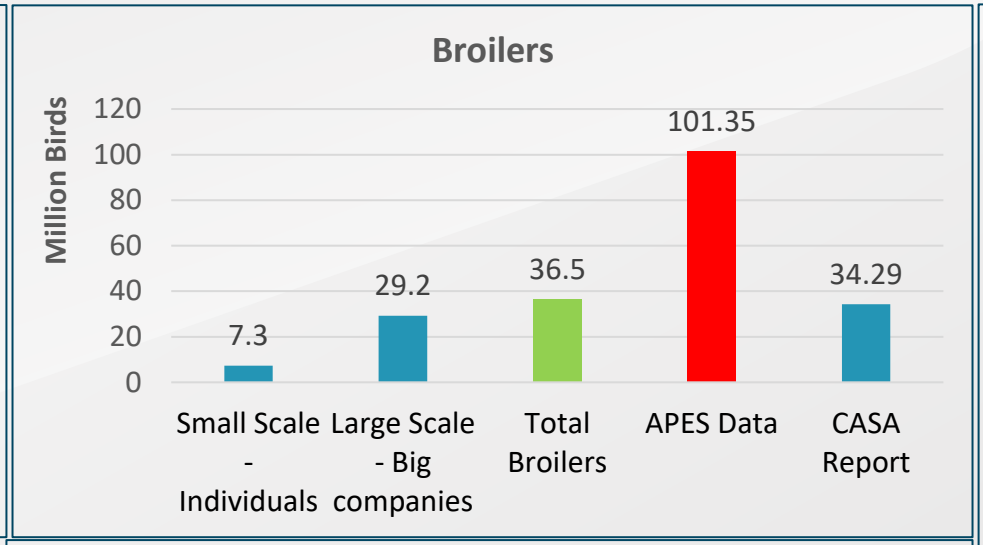
Different data sources considered and various triangulations and crosschecks – but we cant find that many chickens!

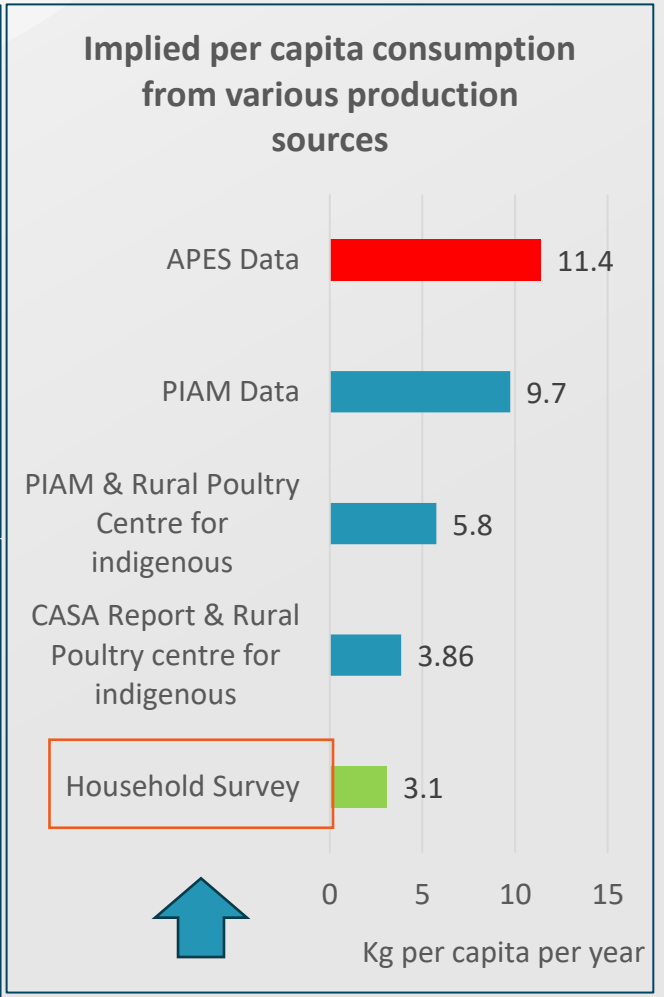
Sources: APES, PIAM, Rural Poultry Centre, CASA, Household Survey, industry role-players

Chicken production numbers were derived from consumption reported in Household Survey

Data triangulation based on comparison of different sources and interviews at VC levels



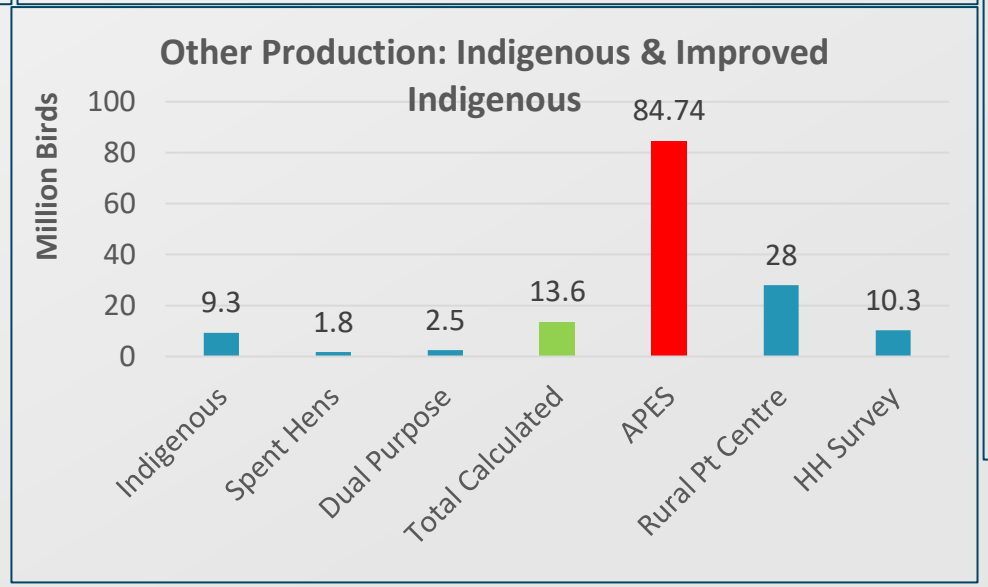




Almost 39 million additional broiler chicks required above PIAM reported data to reach APES / Livestock Census numbers for broiler production

Production numbers calculated using relevant carcass weights for different categories of birds

Share of broilers in total production reflects broader stakeholder consultation and literature



**Household survey is reported consumption nr, not implied from production

Recalibrating targets to industry size

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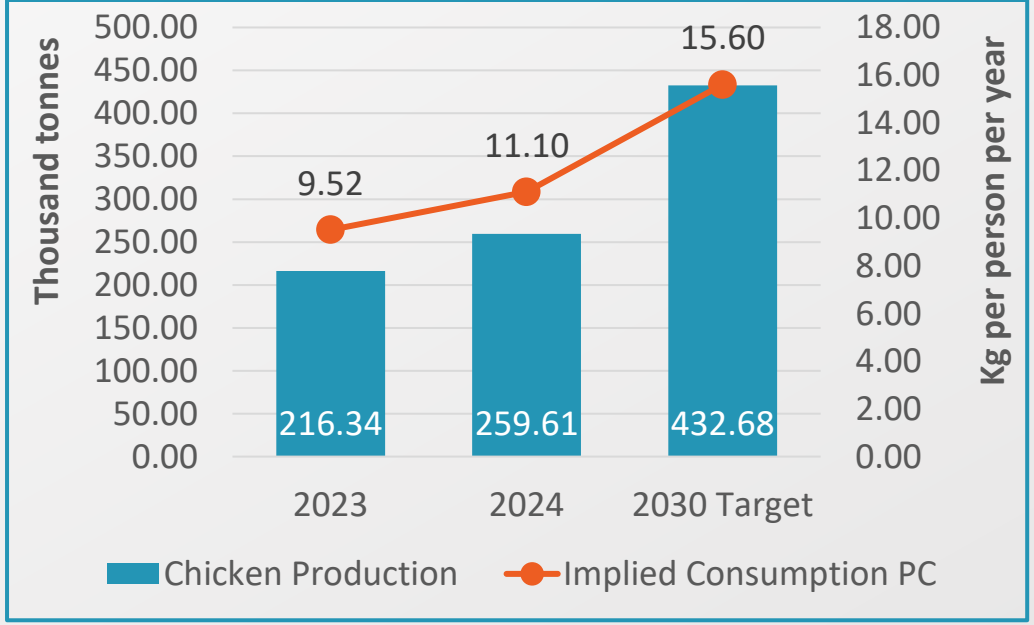
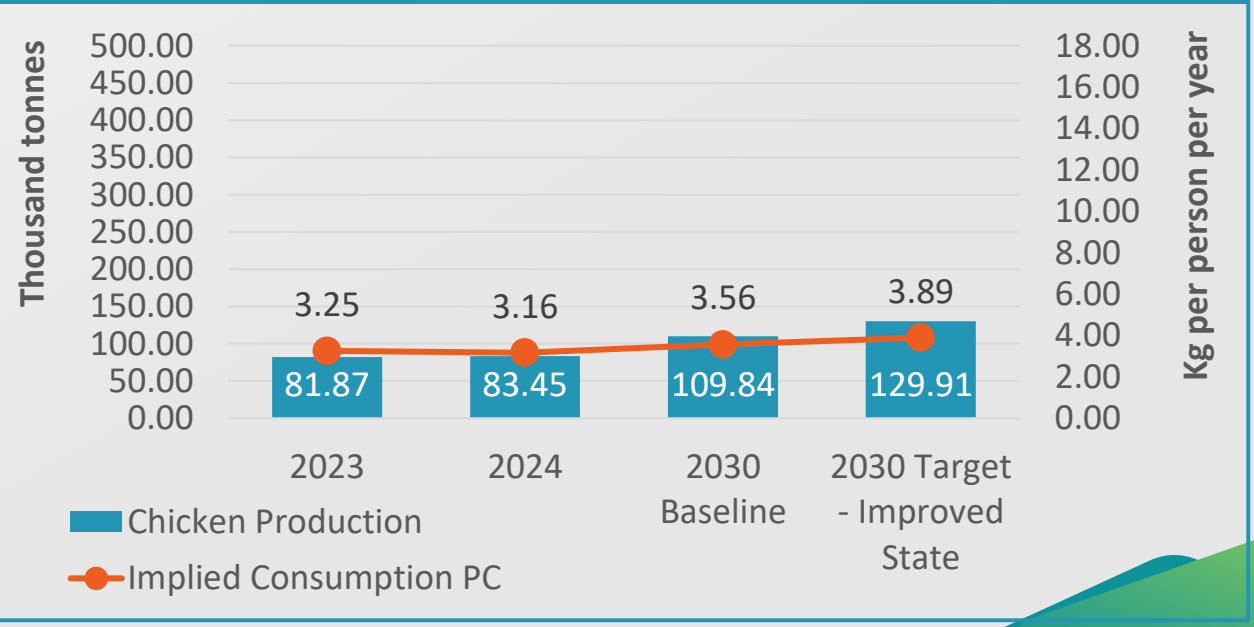
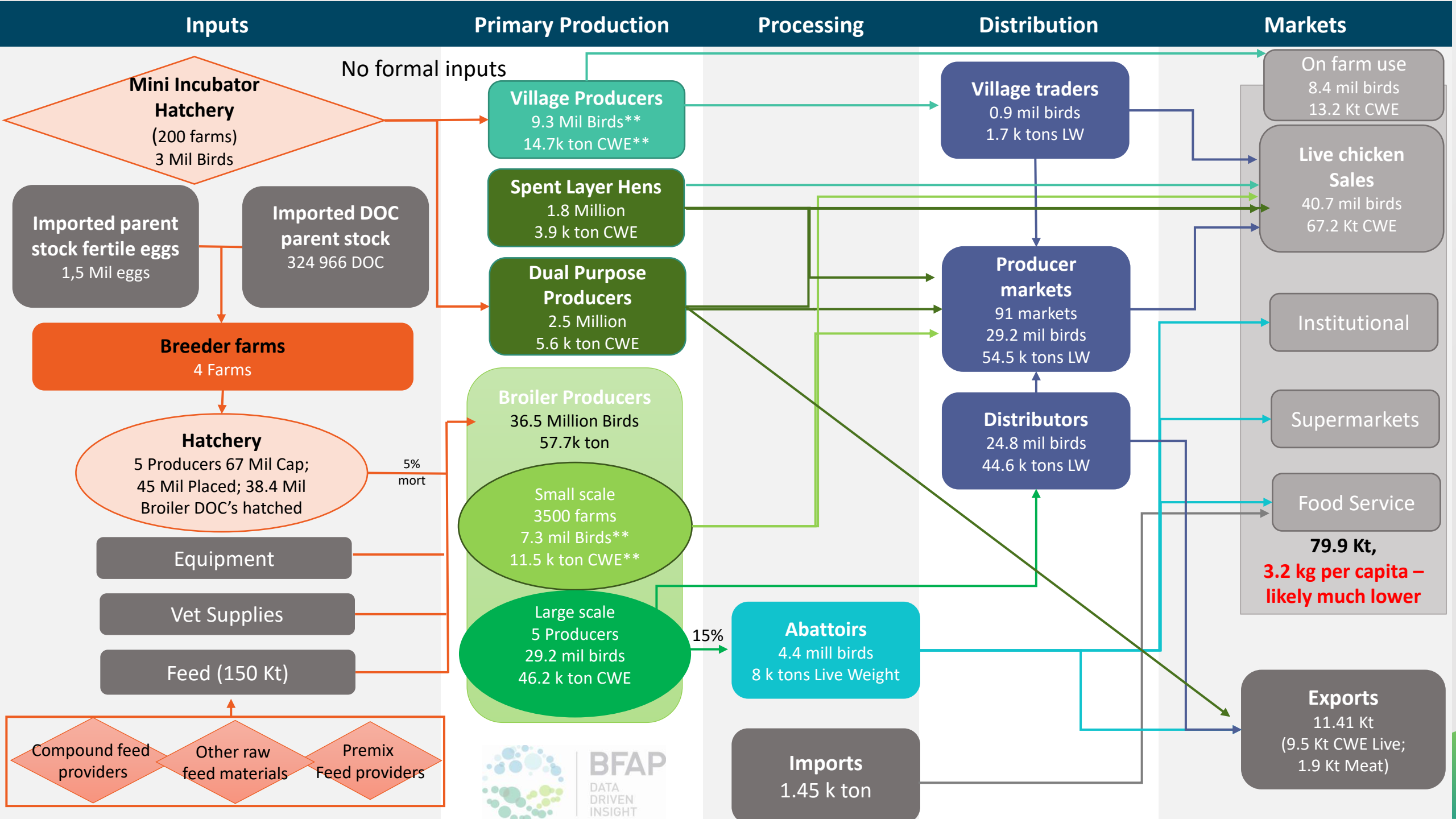
- Growth targets should consider **relevant current size**, as well as **spending power constraints** in country
- Poultry consumption is expected to grow by 27 thousand tonnes by 2030
- Reforms proposed by PPVC could expand chicken production by 48 thousand tonnes above current levels and 20 million tonnes above the baseline outlook

Malawi Ministry of Agriculture



PPVC Estimates and Projections




Inputs
Primary Production
Processing
Distribution
Markets
No formal inputs
Mini Incubator Hatchery
(200 farms)
3 Mil Birds
Imported parent stock fertile eggs
1,5 Mil eggs
Imported DOC parent stock
324 966 DOC
Breeder farms
4 Farms
Hatchery
5 Producers 67 Mil Cap;
45 Mil Placed; 38.4 Mil
Broiler DOC's hatched
5% mort
Equipment
Vet Supplies
Feed (150 Kt)
Compound feed providers
Other raw feed materials
Premix Feed providers
Village Producers
9.3 Mil Birds**
14.7k ton CWE**
Spent Layer Hens
1.8 Million
3.9 k ton CWE
Dual Purpose Producers
2.5 Million
5.6 k ton CWE
Broiler Producers
36.5 Million Birds
57.7k ton
Small scale
3500 farms
7.3 mil Birds**
11.5 k ton CWE**
Large scale
5 Producers
29.2 mil birds
46.2 k ton CWE
15%
Village traders
0.9 mil birds
1.7 k tons LW
Producer markets
91 markets
29.2 mil birds
54.5 k tons LW
Distributors
24.8 mil birds
44.6 k tons LW
Abattoirs
4.4 mill birds
8 k tons Live Weight
Imports
1.45 k ton
BFAP
DATA DRIVEN INSIGHT
On farm use
8.4 mil birds
13.2 Kt CWE
Live chicken Sales
40.7 mil birds
67.2 Kt CWE
Institutional
Supermarkets
Food Service
79.9 Kt,
3.2 kg per capita – likely much lower
Exports
11.41 Kt
(9.5 Kt CWE Live;
1.9 Kt Meat)

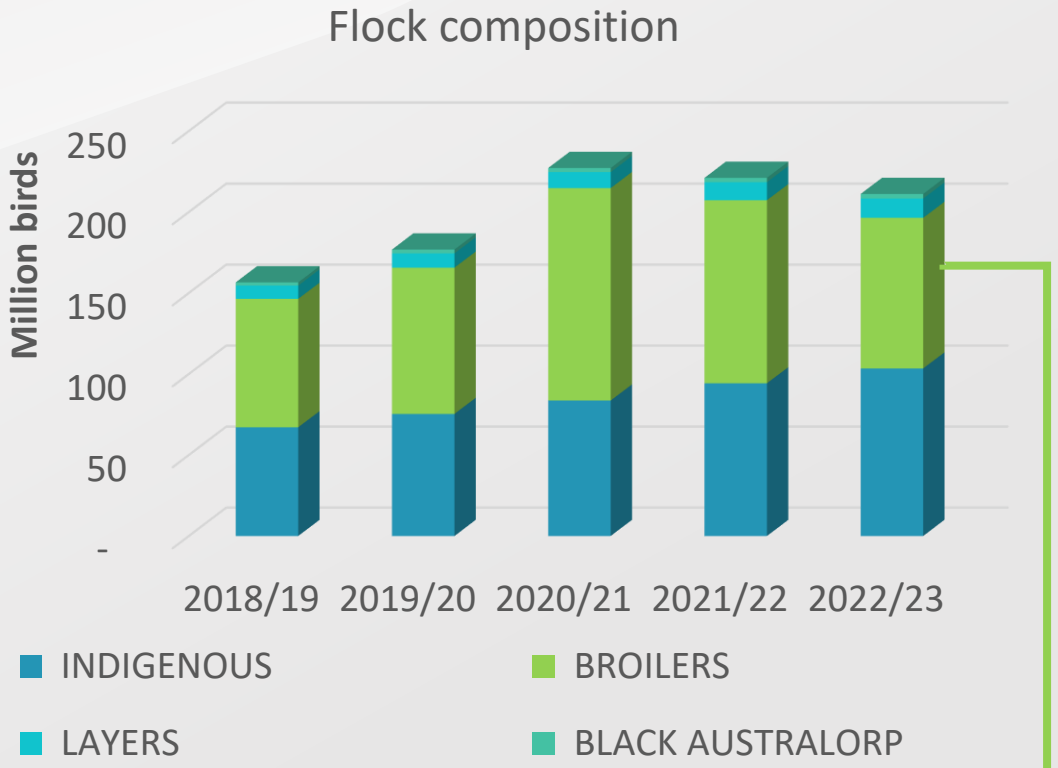
Poultry production has significant potential to grow

Several factors are already supportive of growth potential

1. **International trade environment**: Import licenses are required and not widely granted, limiting competition from imported products and therefore supporting growth in domestic production.

2. **Genetics**: Broilers are widely adopted, and the genetics are imported, enabling domestic producers to access the best performing genetics globally. Genetic potential implies that there is a possibility to obtain good returns from feed market improvements

3. **Demand**: Chicken is a preferred source of protein – given limited purchasing power, consumption is high. If affordability can be improved, demand is likely to strengthen



Source: APES

PPVC estimates suggest that the **share of broilers** in total production is **higher** – at more than 70%

Some major challenges are constraining growth

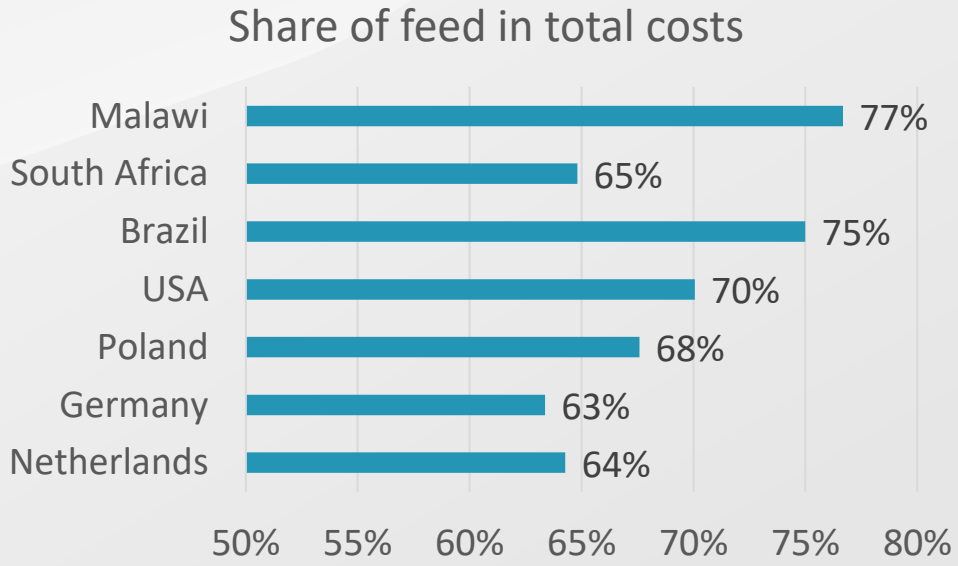
Feed costs and forex availability are significant issues, purchasing power is weak

1. **Feed costs**: Feed costs are high and exceptionally volatile due to inherent volatility in maize markets and the minimum price policy imposed

2. **Transaction cost on imported inputs**: Major inputs such as chick parent / grandparent stock, veterinary products and vitamin & mineral premixes for feed are imported – where high transaction costs and foreign exchange limitations inhibit cost competitiveness

3. **Procurement & distribution legislation**: Rules related to direct procurement and the forced inclusion of vendors and aggregators enable greater inclusion, but add costs in the VC

4. **Financing**: Growth amongst smaller producers is constrained by cash flow, with finance options limited. Many aspects of production require significant capital to expand quickly

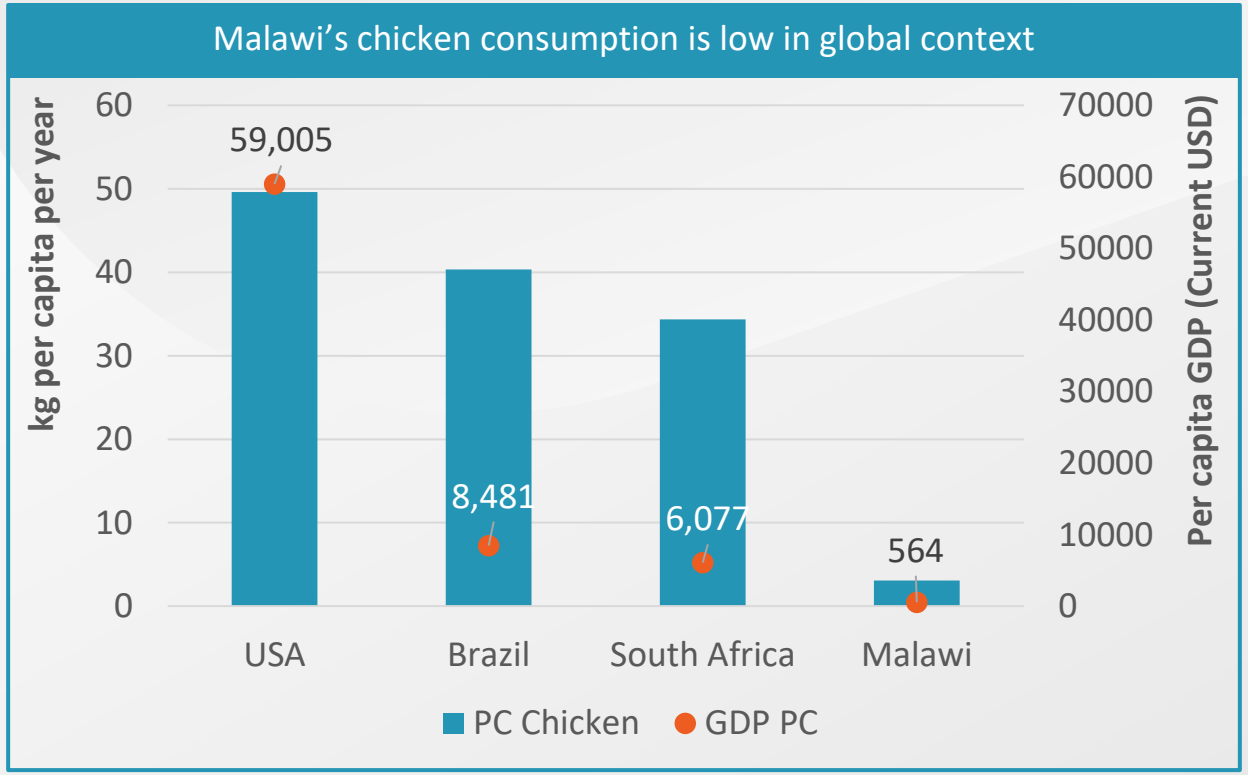


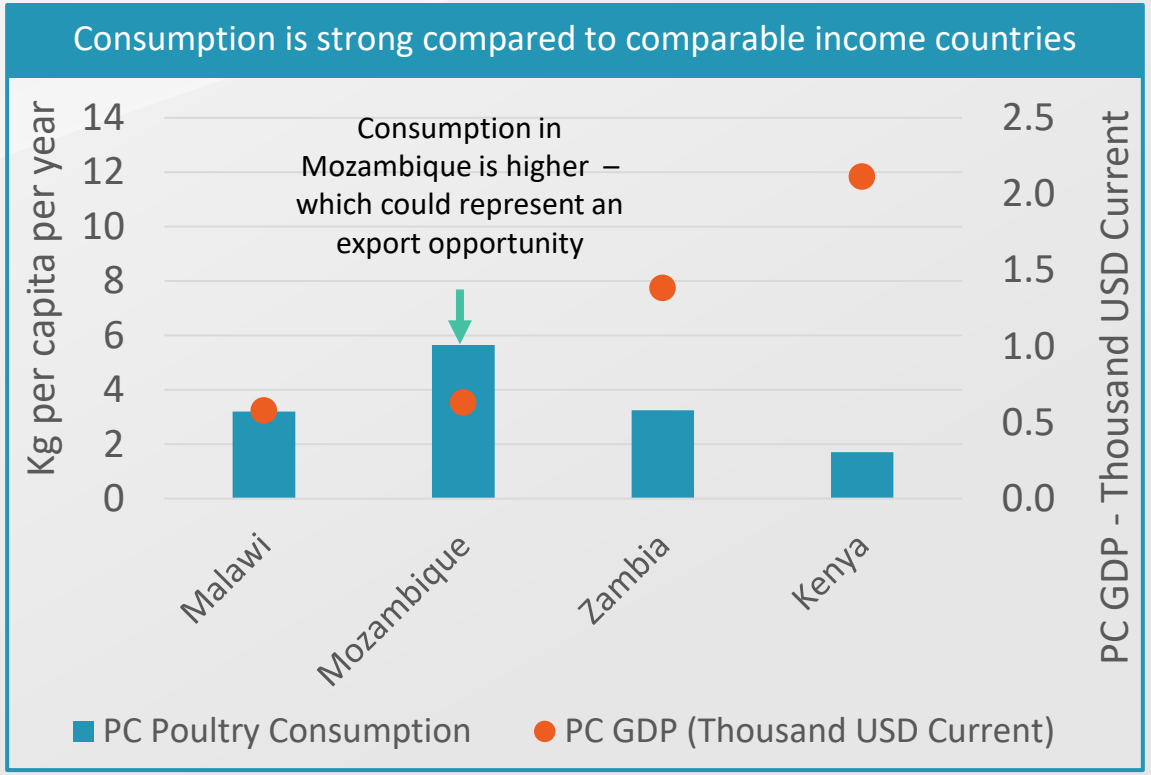
5. **Weak domestic spending power**: Weak spending power amongst Malawi's generally lower income consumers implies that affordability is a challenge and growth is slow

6. **Exports constrained by inefficiencies in process**: Large number of permits & processes prior to export – high costs of feeding longer when delays occur in process

Chicken is popular and widely consumed in Malawi

Despite low per capita income, chicken consumption is comparable to Zambia and higher than Kenya – chicken is a preferred protein source in Malawi



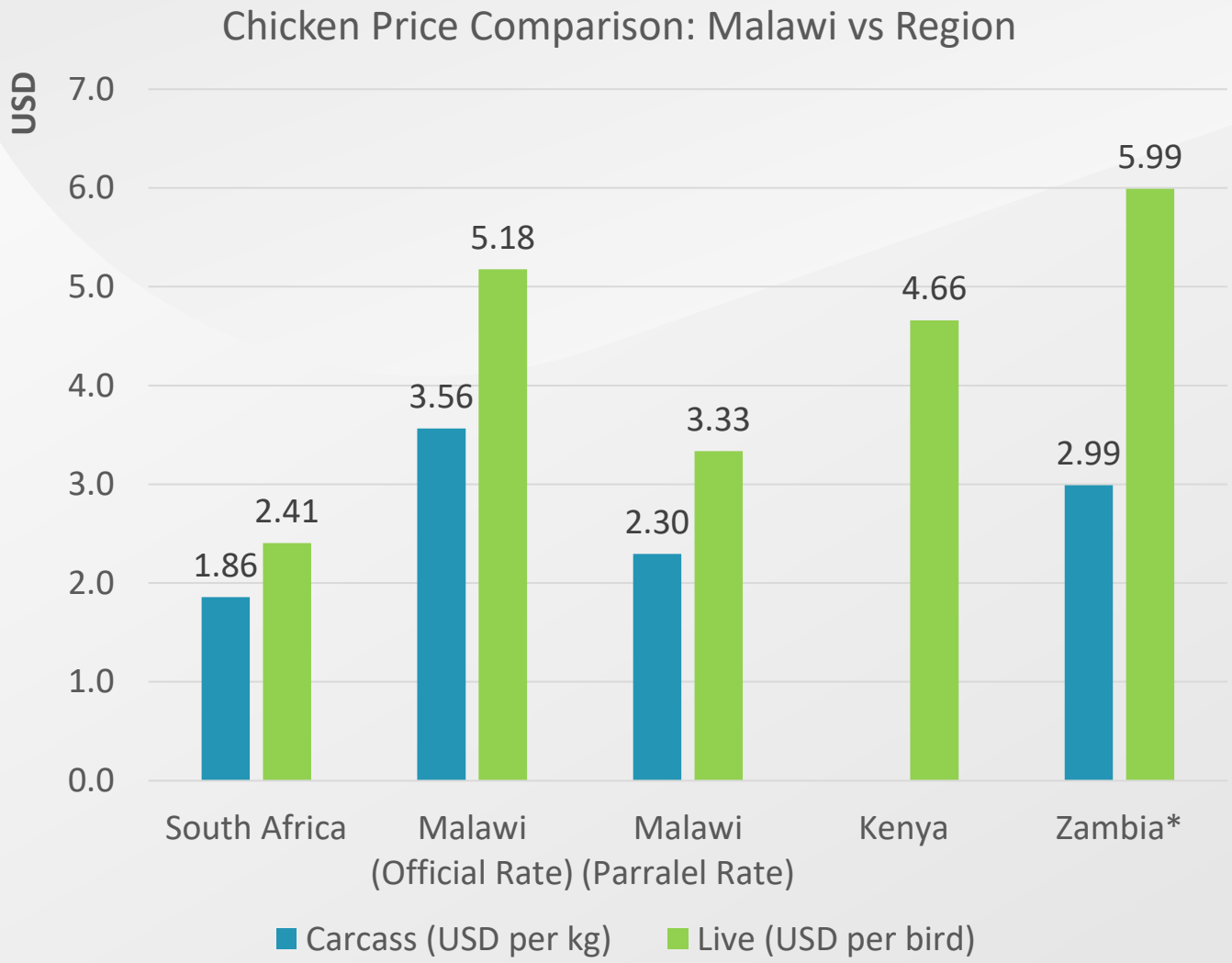


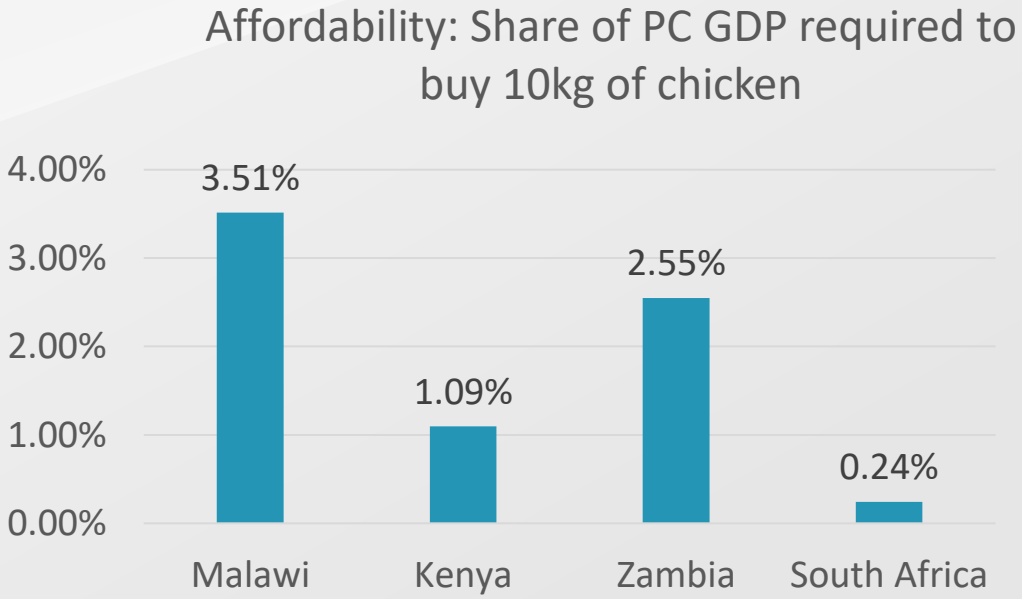
Significant scope for consumption to grow, but income gap will need to close to get to levels comparable to global norms

Malawi's chicken consumption is higher than Kenya and at least the same as Zambia, despite per capita GDP levels that are half of Zambia's and only a quarter of Kenya's

Opportunities exist to grow demand if affordability is improved

Due to low income levels, lower prices are critical to improve affordability



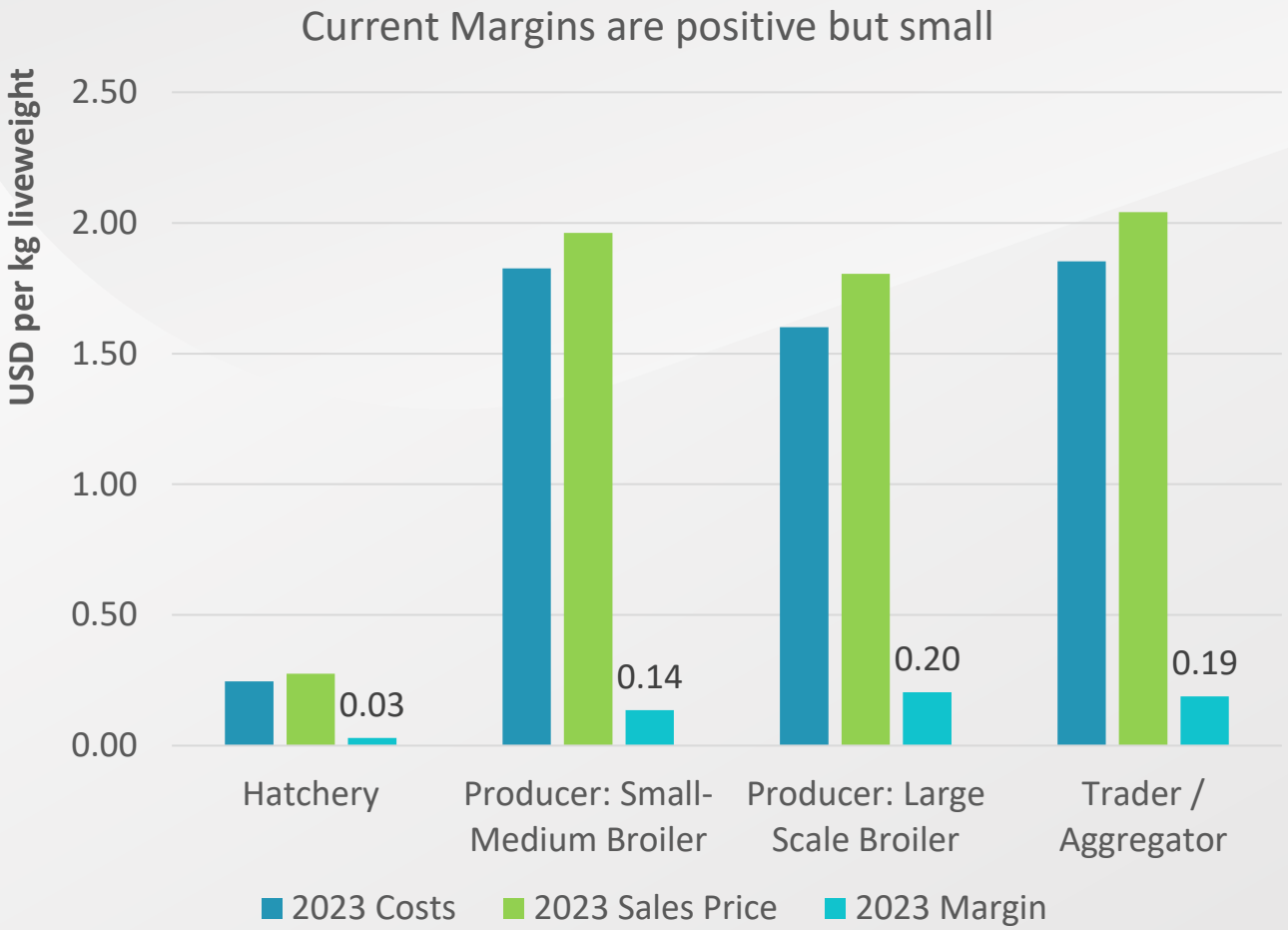


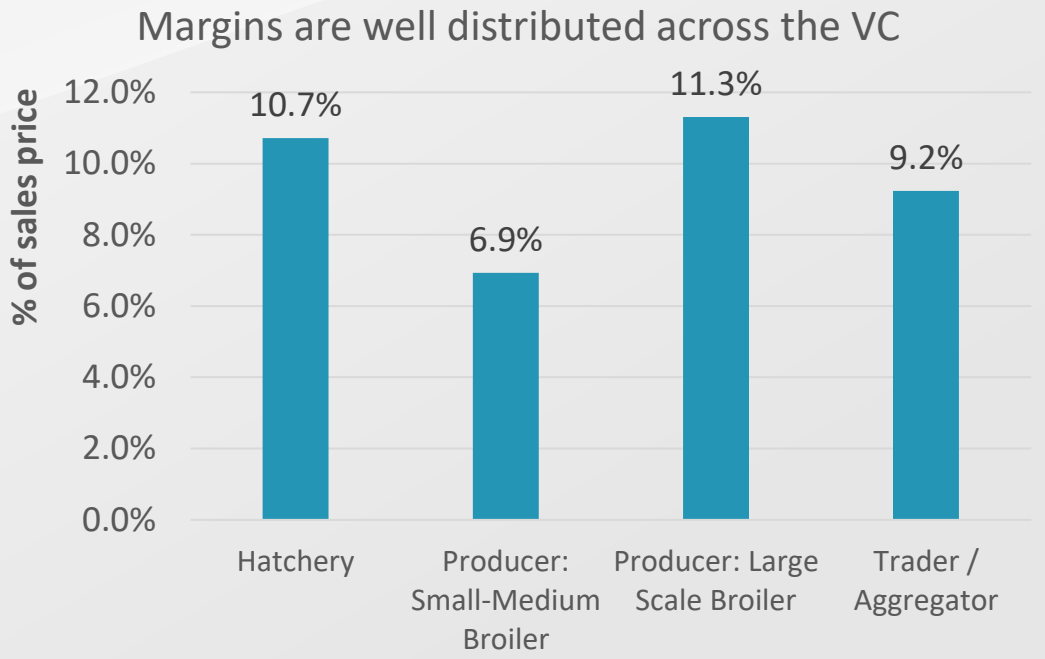
Malawi's chicken is cheaper per unit than Kenya and Zambia – but income levels are also much lower

With a tenth of PC GDP of South African consumers, Malawian consumers are paying 24-40% more for chicken

Current margins are already under pressure

Excessive margins are not the reason for poor affordability - high feed costs are a major constraint and volatility remains a challenge



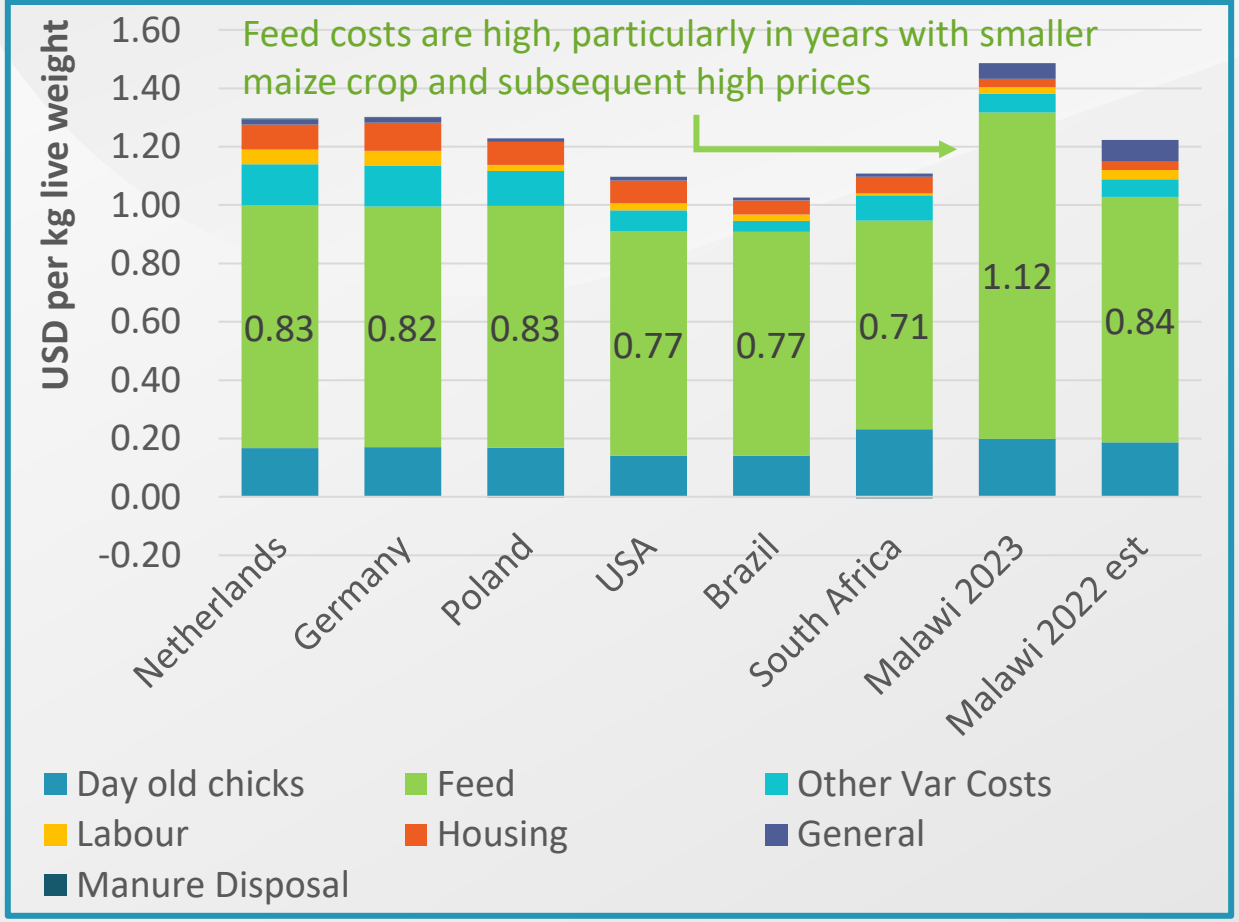


- Producers are not able to absorb a significant price decline
- Production costs would need to decline to sustainably improve affordability for consumers

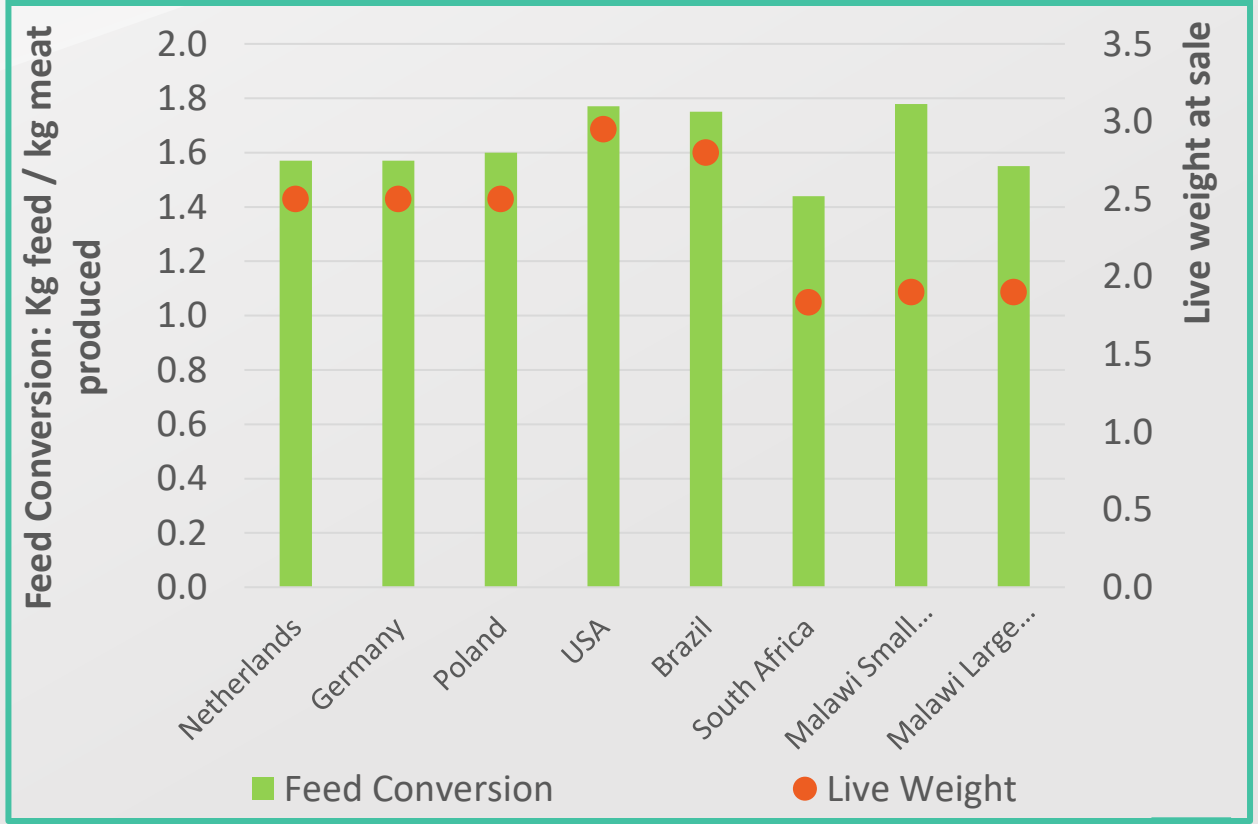
Sustainable production at lower prices will require reduction in production costs

Feed costs are the biggest component of total costs and therefore present the biggest opportunity to reduce production costs

Primary Production Costs: Per live bird produced



Production efficiency could be better

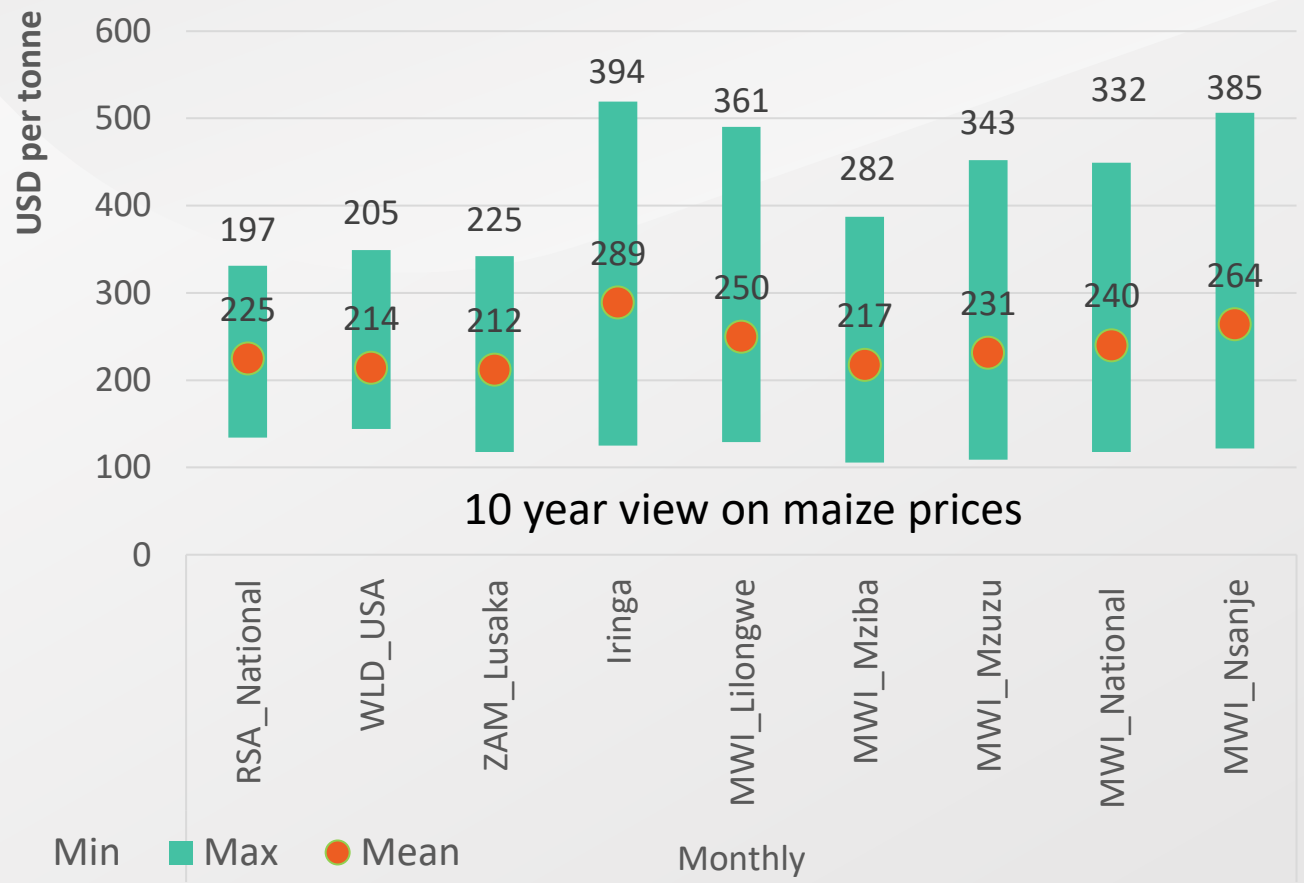


Malawi uses similar genetics to SA and slaughter weight is similar – but in Malawi it takes longer to reach this weight and feed conversion is weaker

Current high feed costs result from high underlying maize prices

Exceptional volatility in maize prices from year to year represents a major challenge with limited opportunities for feed manufacturers to manage volatility

On average, Malawi's maize prices compare well, but the volatility and range of prices is far greater than in other consistent surplus markets:



- Exceptional volatility in raw material costs limits widespread investment in feed production capacity, which might otherwise have reduced the cost of feed production
- Many smaller producers mix their own feed to reduce costs, but then don't always include crucial micro-nutrients which are imported and expensive
- High costs can result in lower density rations, which are lower cost formulations that don't yield the same performance – feed is typically optimized given costs and raw material availability
- Imported vitamin & mineral packs are not feasible inputs to small scale producers but yield substantial efficiency gains if used correctly
- By far the biggest contribution to feed rations is maize and soybean oilcake – supply is inconsistent and prices volatile

Prioritised reforms to initiate growth

Focus on feed related reforms due to significance of share in total costs and associated impact in reducing prices

1

Remove VAT on soybean oilcake and imported veterinary products

- Improves affordability of feed raw materials
- Improves affordability of veterinary products
- But only a small share of total costs affected

2

Maize market reforms

a) Open and transparent **maize trade** environment that **enables exports** in surplus years

b) Incentivize **counter seasonal irrigated production** through a targeted AIP program to reduce seasonal volatility in maize prices

c) Remove minimum price to enable feed producers to procure at market-based prices

3

Consistent surplus **maize** production at **export-parity based prices**

- Will require substantial productivity gains for maize producers to remain profitable and grow production
- Will result in more stable and affordable maize prices for feed producers and Malawi's consumers
- Substantial reductions in cost of raw materials for feed production – enabling smaller producers to use better quality pre mixed feed

There are opportunities to expand irrigation

Insights from the Irrigation Master Plan (2015) – potential for 400 000 ha – we are looking at 100 thousand hectares or less

Diversion Lake Malawi:

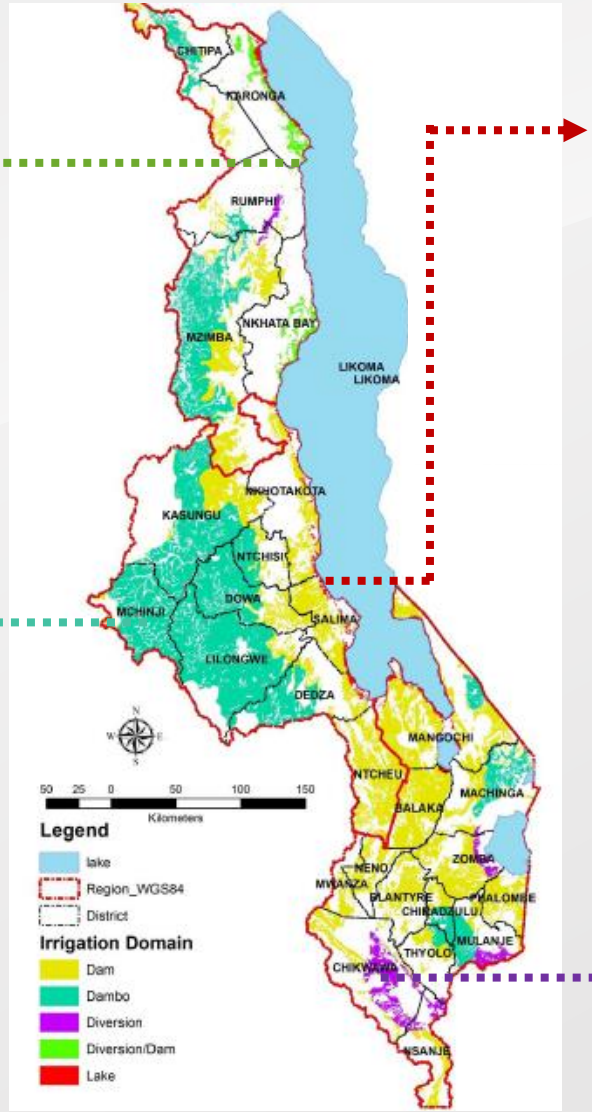
Limited opportunities for expansion, since most suitable areas has already been developed

Dambo [90 000 ha]:

These are wide low-lying and gentle sloping grassland depressions which are seasonally waterlogged by seepage from surrounding high ground.

These are exclusively used in winter and not cropped in rainy season

Typical bucket system, low fertiliser application and low yields (<2 t/ha)



Dam (pumped from Lake Malawi) [61 000ha]:

Additional energy cost to pump uphill is a major constrained since anything above 15 meters elevation is considered unfeasible, accepts for a few high value crops

Several Dam domain schemes are planned adding 30-40 000 hectares of potential

Diversion (Shire & Ruo Rivers) [70 000 ha]:

Some of these schemes are already coming online in 2026

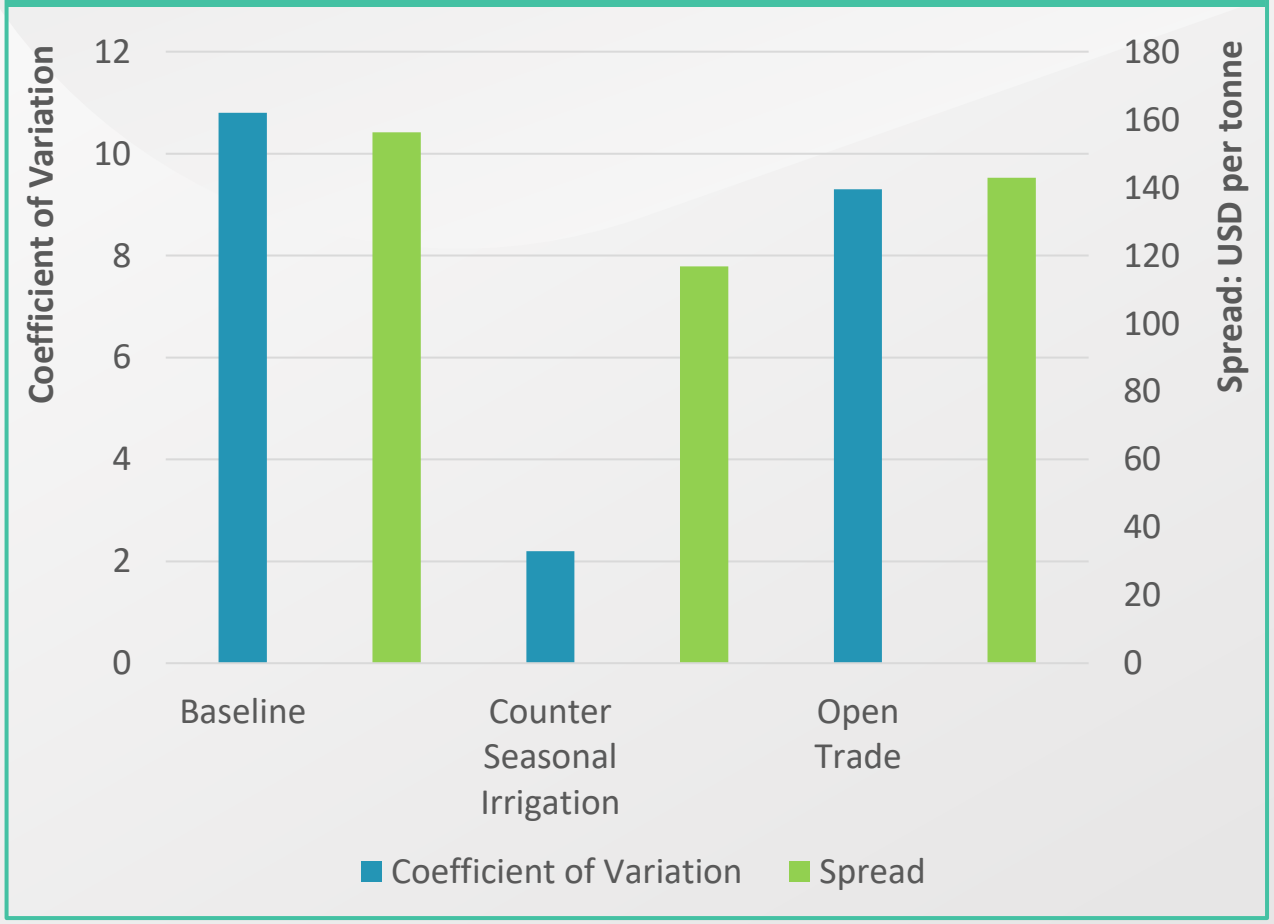
Table 48: Summary of Top Ranking Results (all >10% IRR, > 100 ha)

Scheme	District	Area (ha)	Capital Costs (US$ '000)	Unit Cost (US$/Ha)	EIRR (%)	Rank #
Dowa Dambo	Dowa	375	1,033	2,754	22	1
Nkawinda/ Bakasala	Blantyre	560	790	1,411	30	2
Nthiramanja	Mulanje	6,316	22,223	3,518	21	3
Mlooka	Zomba	153	730	4,771	14	4
Ruo - Diversion	Thyolo/Nsanje	8,858	16,811	1,898	30	5
SVIP	Chikwawa	26,653	193,770	7,270	11	6
Dwambazi	Nkhata bay/Nkhotakota	1,769	3,466	1,959	26	7
Matoponi	Zomba	115	590	5,130	14	8
Welusi	Karonga	1,742	3,756	2,156	32	9
Linga	Nkhata bay	1,514	4,054	2,677	29	10
	Total (1-10)	48,056	247,222	5,144	23	

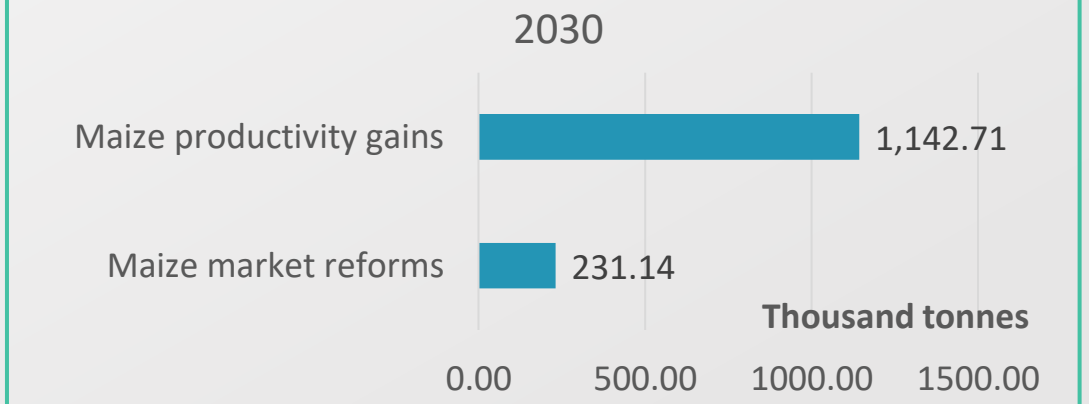
A market led IAT lens to anchor the traditional maize productivity debate

Market led reforms can prevent maize prices from falling below breakeven in surplus years – resulting in investment to expand production

Volatility analysis based on historic yield variation:
Reforms can reduce maize price volatility substantially



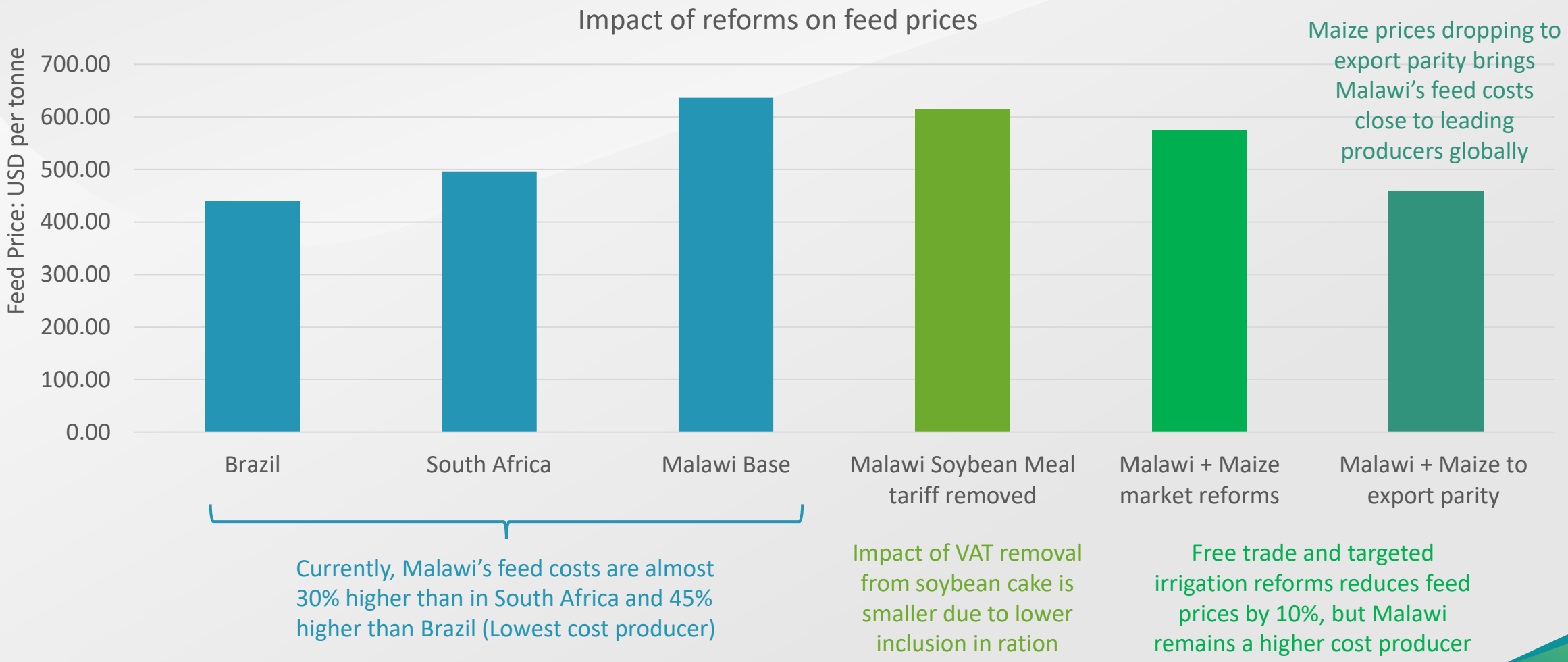
Market reforms ensure that productivity gains are sustainable



- Small scale maize yields must improve from 1.9 tonne per ha under baseline to 2.9 tonne per ha in the export parity scenario
- Efficient and consistent exports will reduce year on year volatility, as margins will remain more consistent when prices don't fall as far in surplus years

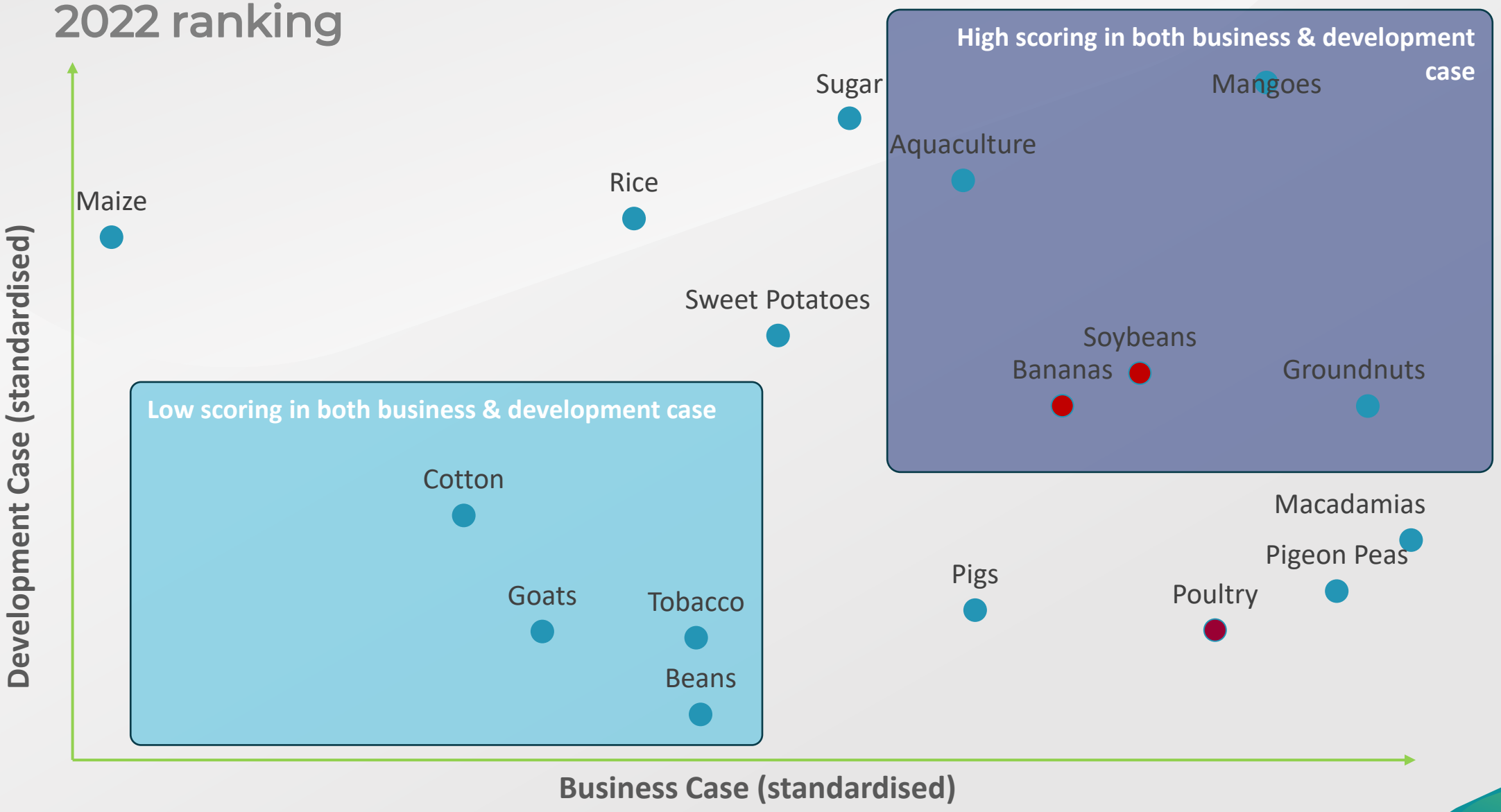
Maize prices need to fall to a regional export parity to bring feed prices in line with leading producers

Limited spending power suggests that Malawi's chicken must be cheaper than major competitors to bring product affordability to similar levels



Integrated value chains drive a combined business and development case

2022 ranking



Prioritised reforms to initiate growth

Broadening market through exports critical to support prices given weak spending power in Malawi

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4

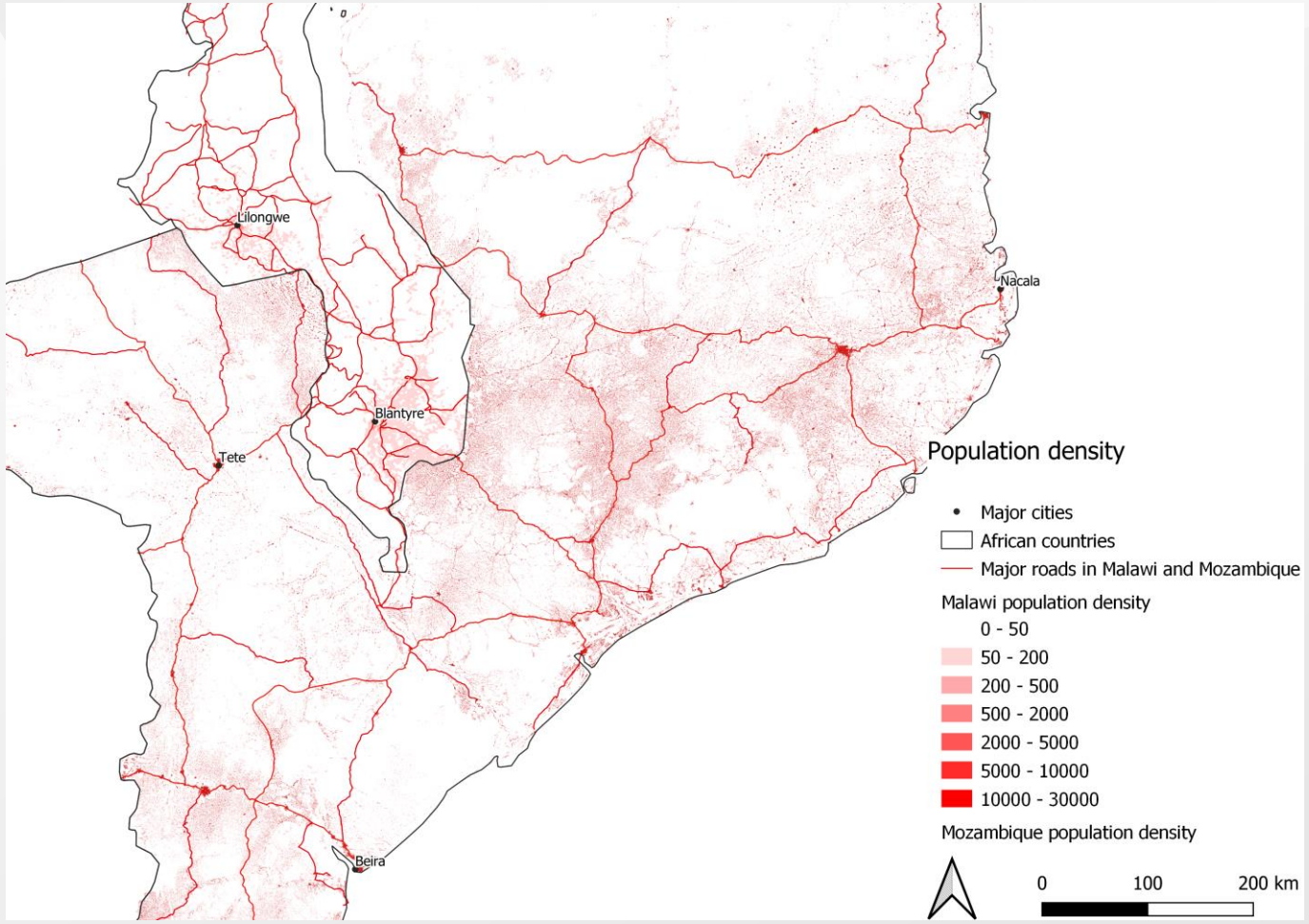
Facilitate **exports into Mozambique** by improving processes associated with exports

- One stop shop for all permits
- PPP to improve efficiency of issuing permits
- Widen market as Malawi consumers lack spending power

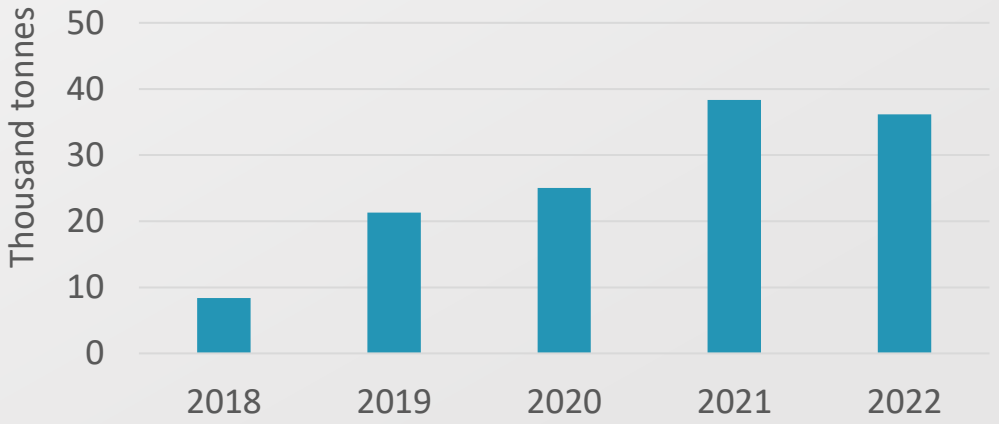
Enabling efficient exports would broaden market beyond Malawi's consumer base

Potential for exports into Mozambique that will provide some price support for poultry producers and enable further production expansion

Population density in Malawi and Mozambique



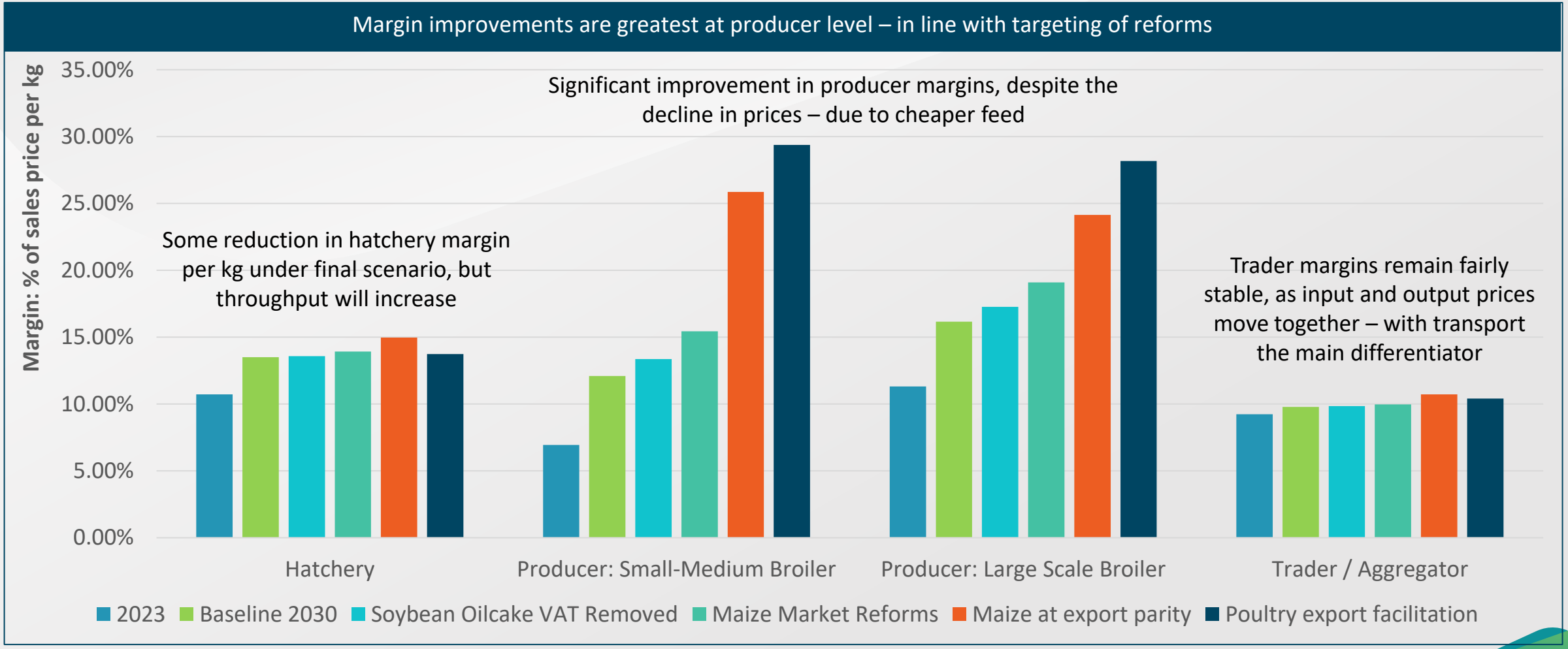
Mozambique imports more than 30 Kt poultry p.a.



- Most Mozambican imports will go to Maputo – from South Africa or South America
- Malawi is well placed to supply Central Mozambique – with significant population density across border
- Most imports come in cheaper than what Malawi can produce – but there is a substantial transport differential from Beira to inland cities

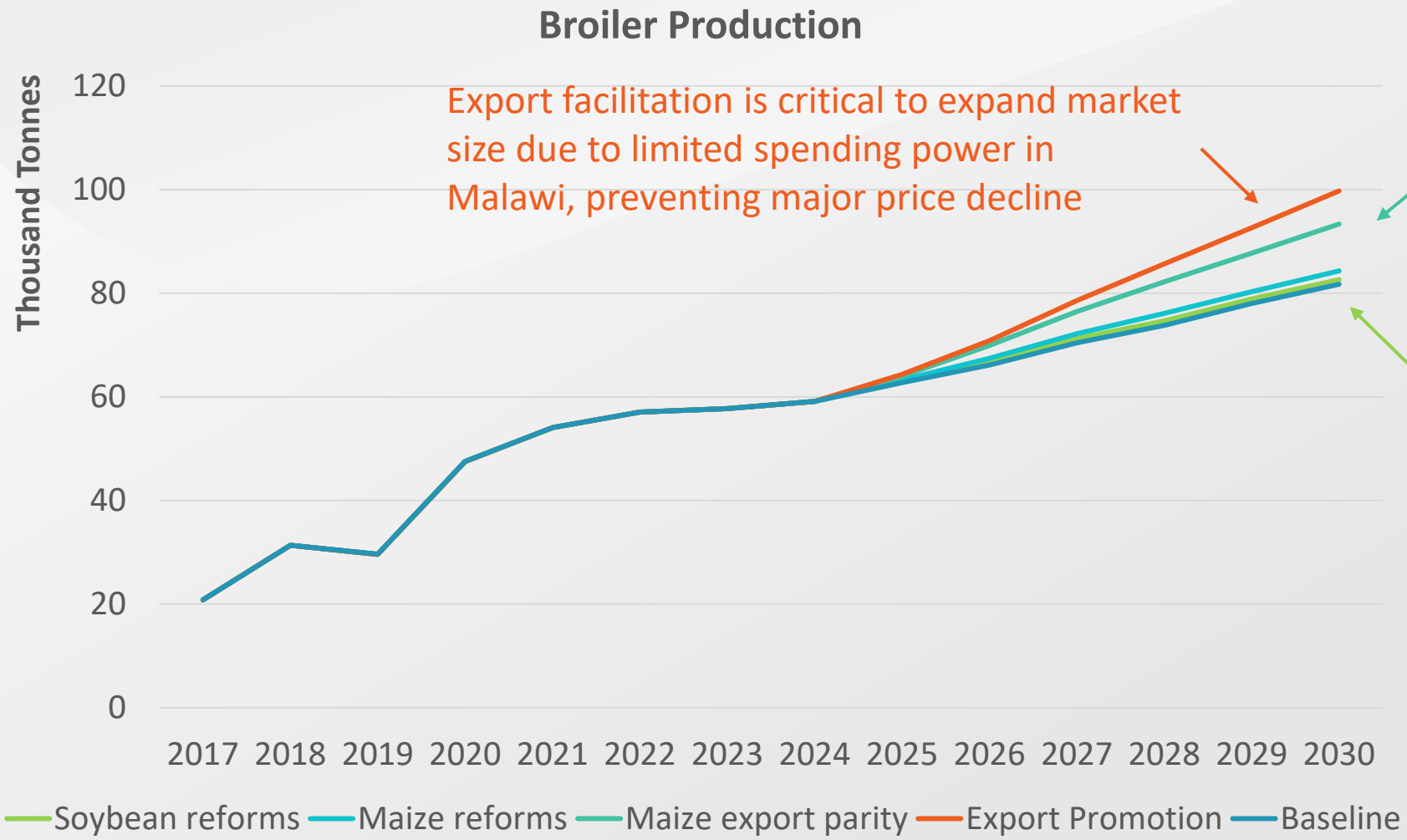
Significant Margin improvements to producers

Particularly if maize moves consistently to export parity levels, producer margins improve substantially



Improved profitability initiates investment to expand production

The full stack of interventions induce a 22% expansion above the baseline, but maize prices need to fall all the way to export parity before significant growth is unlocked



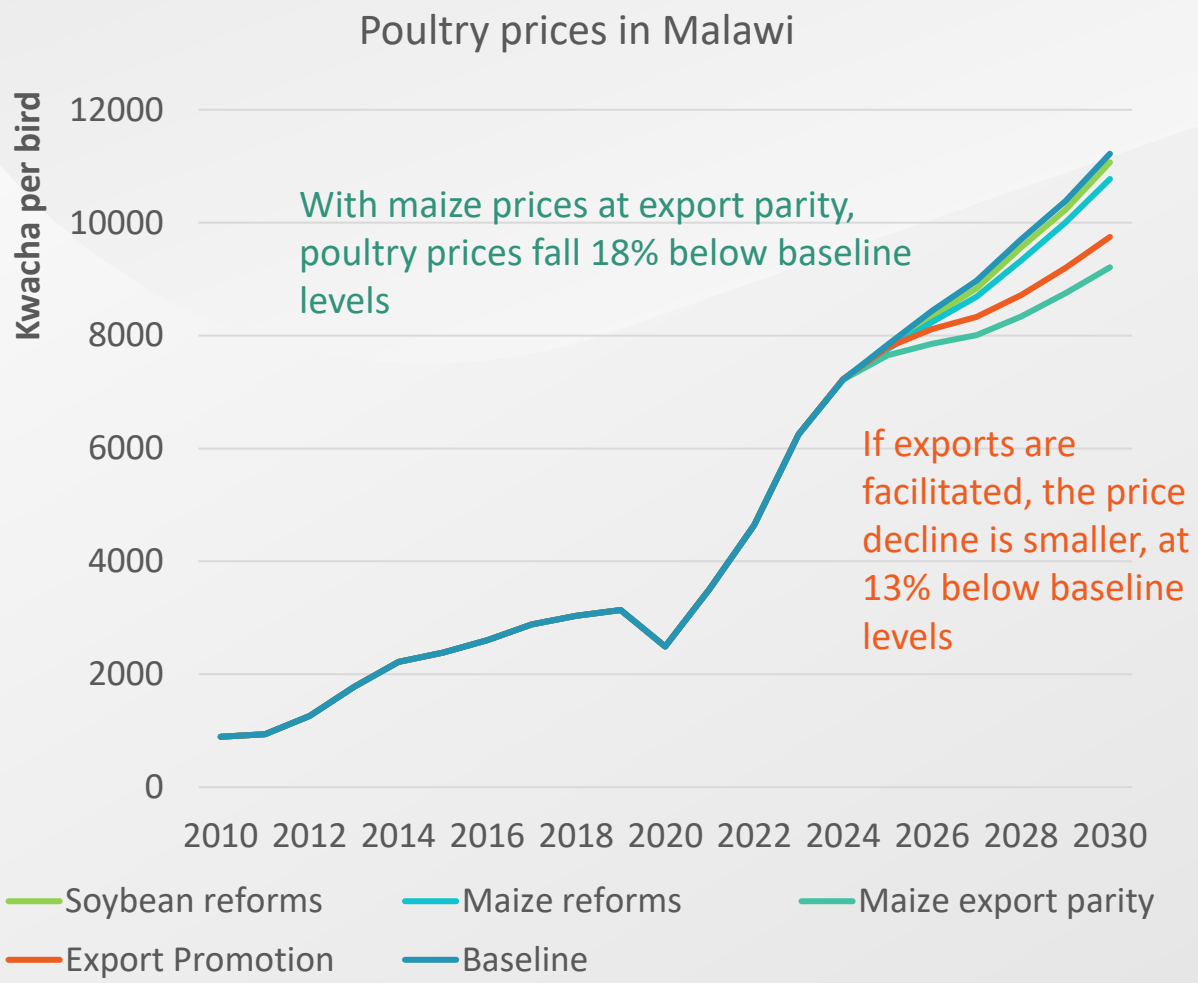
Export facilitation is critical to expand market size due to limited spending power in Malawi, preventing major price decline

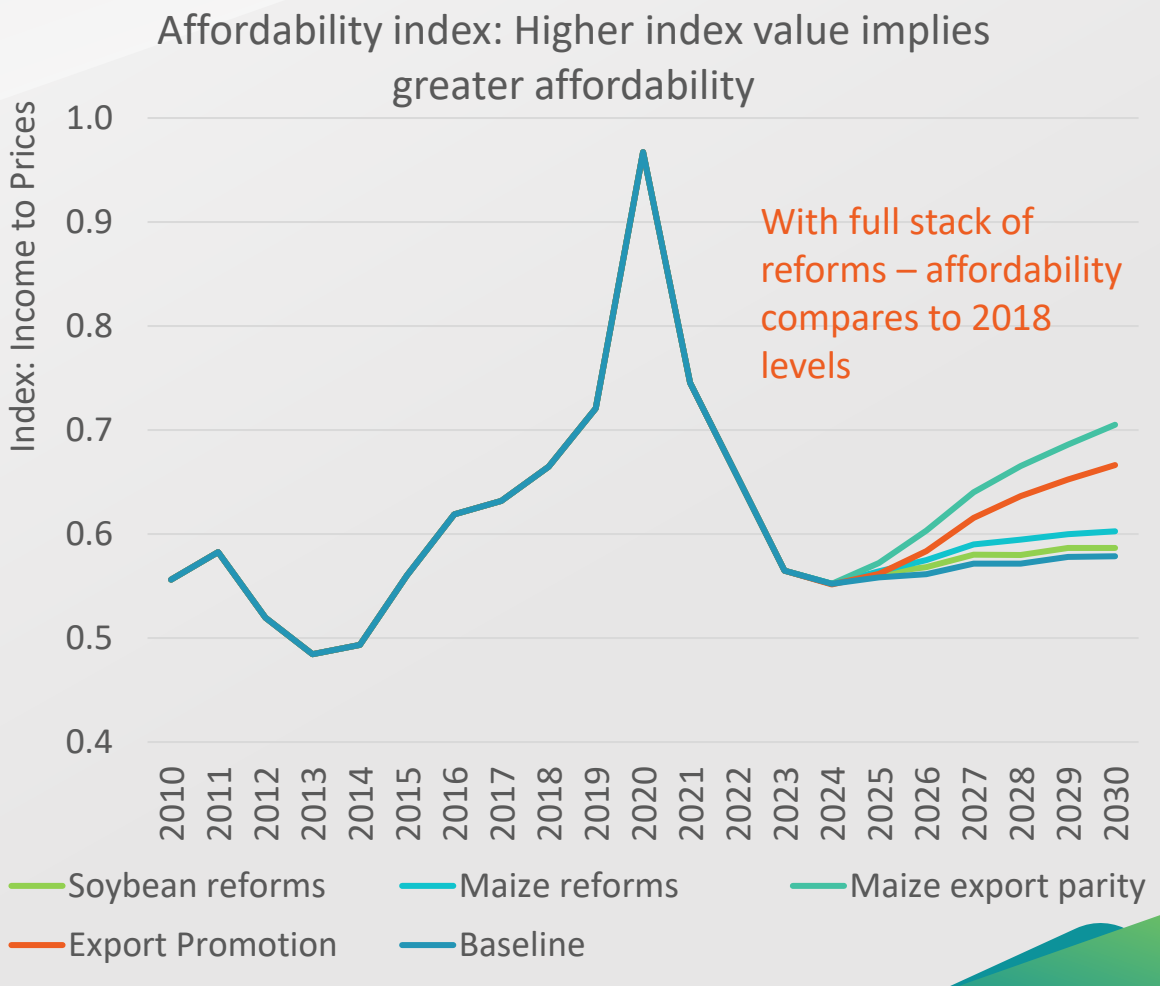
Decline in feed costs is essential to improve affordability and ensure competitiveness in neighbouring markets

Impact of soybean reforms is smaller, due to the lower inclusion rate in feed rations

Additional supply reduces prices to improve affordability and drive consumption growth

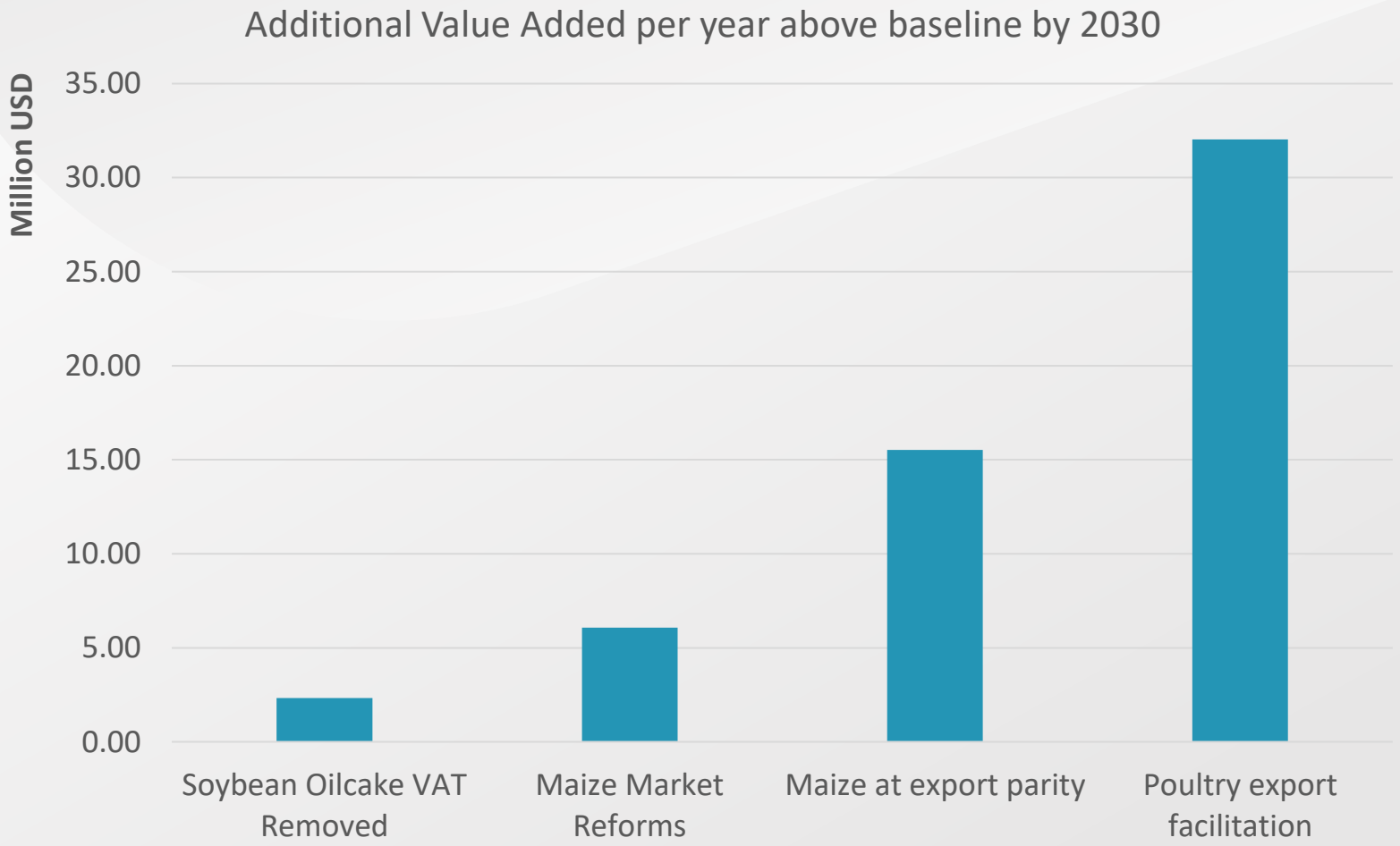
Producers remain profitable at lower prices, due to feed price reductions

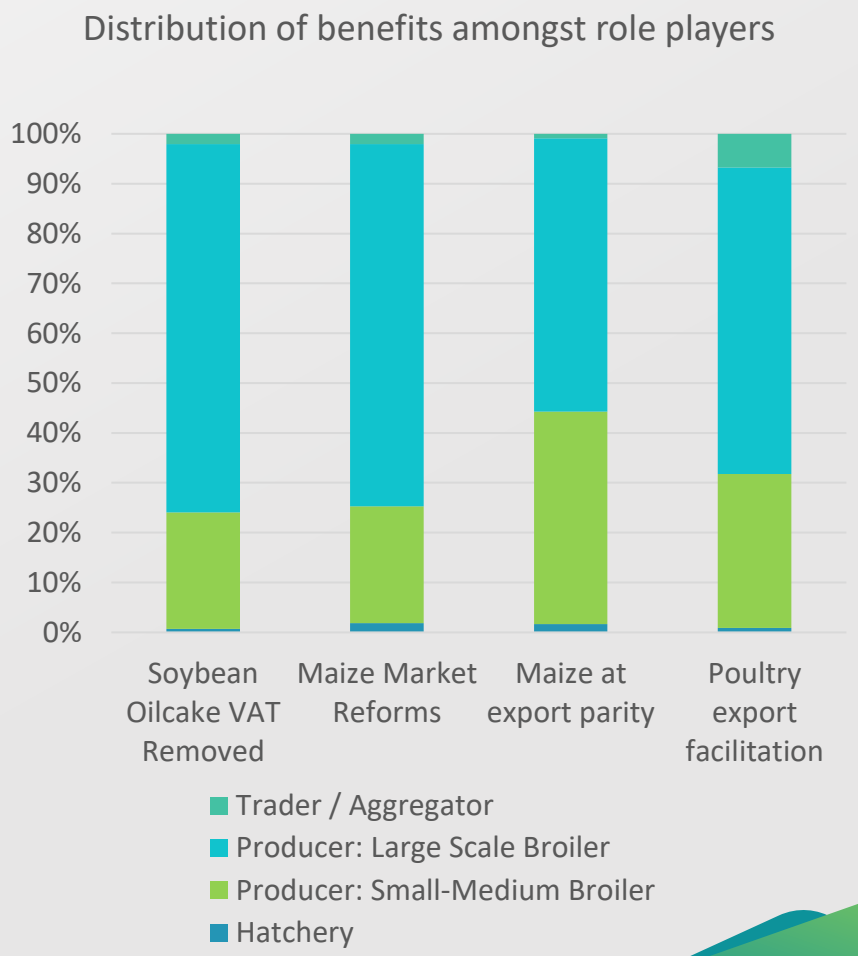




Full stack of reforms yields US $ 31.5 million additional value added from poultry production

Accounting for further related industries, such as maize & soya production, should scale this further and additional nutritional benefits will also be evident



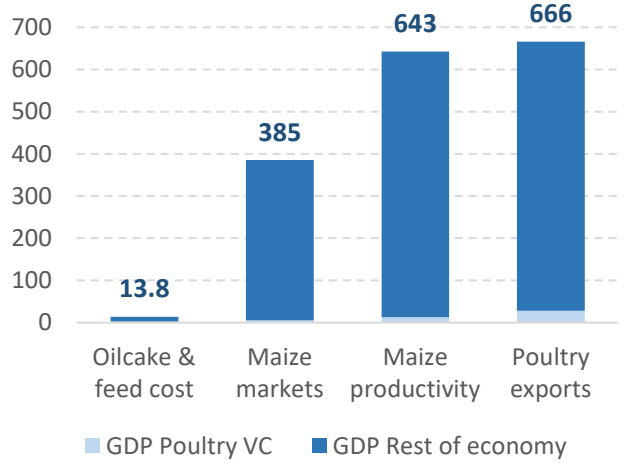


Considering other related sectors, particularly maize, GDP impact scales to 666 million

Maize is a much larger sector which enables a greater impact

Increase in national GDP

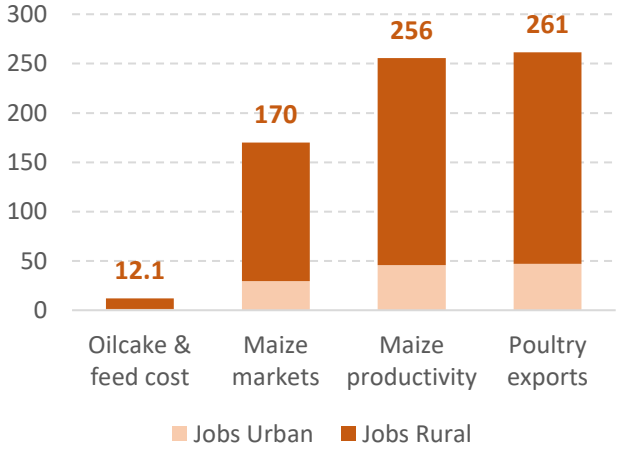
($ mil.)



- Poultry scenarios assume animal feed sector productivity gains same as in soybean scenario
- Reforms also rapidly reduce cost of maize through irrigation, productivity gains, and trade
- As a result, most gains realized outside of poultry sector, with a marginally larger contribution from poultry in final poultry export promotion scenario
- Total GDP gains range from 2.5% to 4.2% in the maize market and productivity scenarios, and 4.4% in the final scenario
- Poultry value-addition is $27.5 million in final scenario, more than double than in the baseline

Number of jobs created

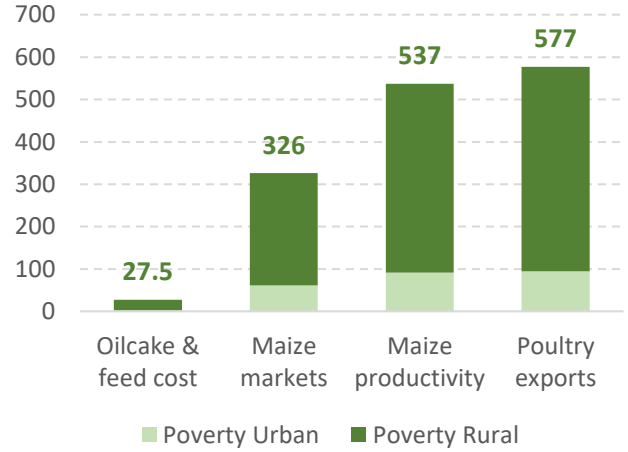
(1,000s)



- Besides the first scenario, which contributes little to jobs, the remaining scenarios add between 170,000 and 261,000 jobs relative to baseline employment of 9.8 mil.
- Between 80% and 90% of jobs in rural areas in maize farming, although some urban job creation linked to animal feed sector and poultry meat

People lifted out of poverty

(1,000s)



- Large numbers of people lifted out of poverty mainly due to large declines in the cost of calories – maize prices fall by over 3% in the final scenario relative to the baseline
- Over half a million people lifted out of poverty in the final two scenarios 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

Thank you

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