



Food and Agriculture
Organization of the
United Nations



Hand-in-Hand
Initiative



Zambia

Hand in Hand Investment Plans



ZAMBIA AT A GLANCE

Land-locked/ Land-linked

8 bordering countries

50mn ha

Forest cover (over 61%)

42mn ha.

Arable land (58%):

40%

SADC freshwater bodies

7 million ha.

Currently cultivated

1 million ha.

Available in Farm Blocks









- **Population 20 Mn (2022 Census)**
- **GDP US\$29 Bn**
 - **Agriculture GDP : 3.4%**
 - **GDP per capita US\$ 1,457**
 - GDP per capita growth of 15% per annum
- **Prevalence of Poverty 60% (LCMS 2022)**

2023/2024 Drought

- **US\$941 mn drought intervention required** following declaration of a **national emergency due to drought**

WHY INVEST IN ZAMBIA

STRATEGIC ADVANTAGES

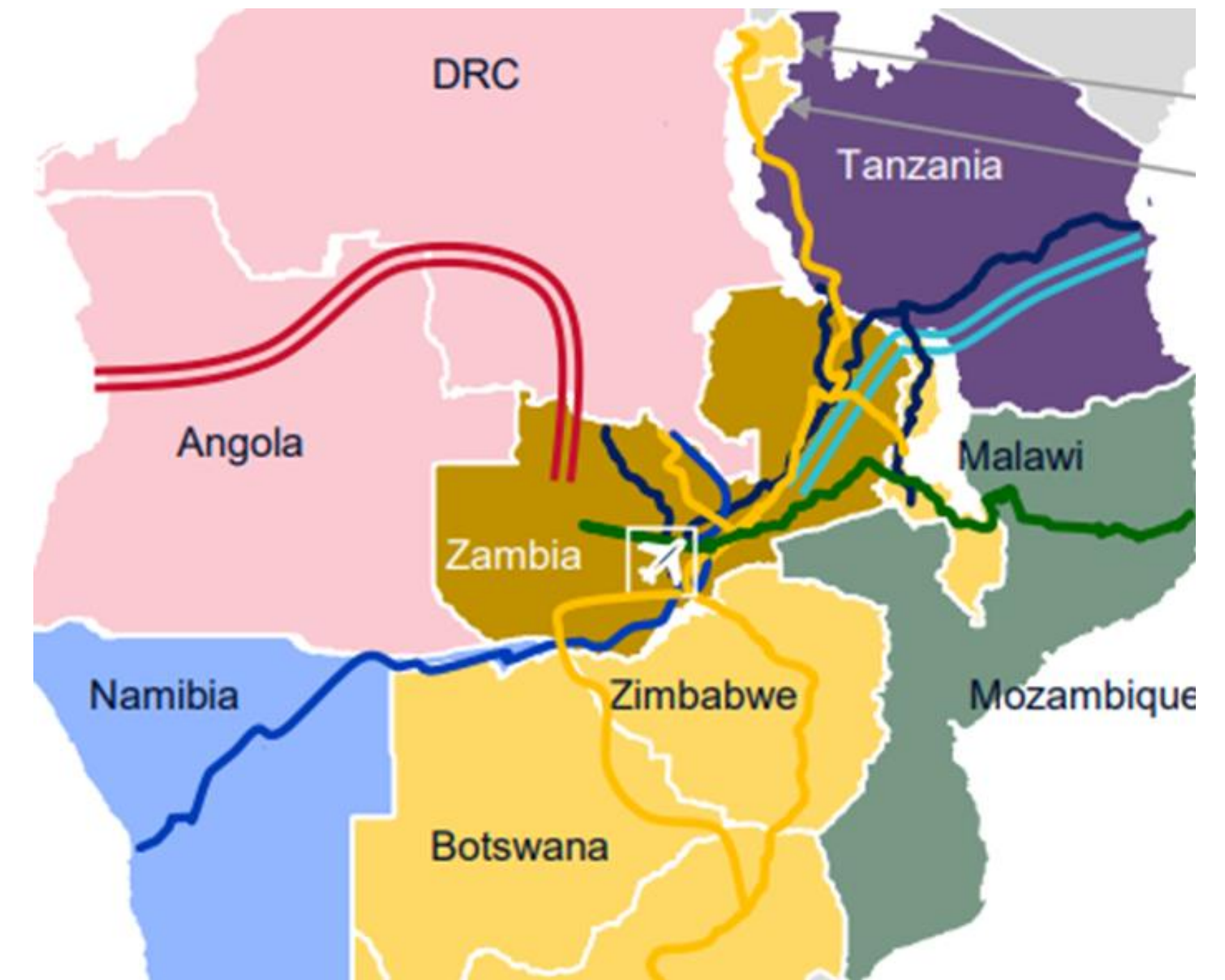
 <p>Strong leadership</p>	 <p>Private sector driven policies</p>	 <p>Political stability</p>	 <p>1.3 Bn People market size (AfCFTA)</p>	 <p>100% repatriation of profits</p>	 <p>Youthful Population: Median age is 17.3 yrs old</p>
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• GOVERNMENT STRATEGIES & INCENTIVES

- **8th National Development Plan (2022 – 2027)** aims to increase annual agricultural growth to ~ 10% per year
- **Comprehensive Agriculture Transformation Support Programme (CATSP)** for improving policy environment to encourage private sector participation.
- **National Green Growth Strategy** promoting development pathways that lead to Zambia’s transition to a low-carbon, resource efficient, resilient and socially inclusive economy by 2030.
- **Capital allowance rate of 100%** for equipment used in farming and income tax rate of 10% on profits
- **Mechanization Strategy** launched in February 2024

"The authorities have made commendable efforts over the past years to stabilize the Zambia economy". Ms Kristalina Georgieva Managing Director IMF (2023)

Trade corridors



Established access to Africa Markets (USD 3.4 trillion GDP): COMESA, SADC, AfCTFTA

Stablished global trade agreements: EBA, AGOA

USD COMMITMENT OVER 5 YEARS



**National Treasury
investment of USD 1bn**



**Partner Resource
investment of USD 1.5 bn**



**Private Sector
investment of USD 2.5 bn**

GOVERNMENT AGRICULTURE STRATEGIES

PRIORITIES OVER 5 YEARS

- Promote **crop, livestock and fisheries diversification** in line with the diversification agricultural Policy
- Boost **nature positive food production and sustainable livelihood alternatives** based on regional potentials, eg. wetland rice, aquaculture, poultry, honey production, etc
- Invest in **seed breeding, nutritional diversity and post-harvest loss reduction** strategies
- Promote agricultural mechanization and irrigation in line with the Zambia **Mechanization Strategy** launched in February 2024



PRIORITY VALUE CHAINS TARGETS

- **Maize** production to increase from **3mn to 10 mn MT/ year** by 2030
- **Soybeans** production to increase from **445,000MT to 1 mn MT/year**
- Make the **fisheries** subsector efficient, competitive and export-led inline with the Zambia's National Fisheries and Aquaculture Policy (NFAP) launched in June 2023
- Increase Honey production from **30,000 MT to 96,000 MT** by 2030
- As part of its economic diversification strategy to reduce dependence on copper, the Government identified **honey** as one of the country's high-value export products

HIHI INVESTMENT AREAS



MAIZE

1

- Main staple food and widely consumed in southern and Eastern Africa
- Average domestic requirements for Zambia 3.0mn MT/year
- Current productivity is low about 2MT/ha vs potential of 8-10MT/ha
- Production surplus will drive exports to respond to the regional demand of 285mn MT.

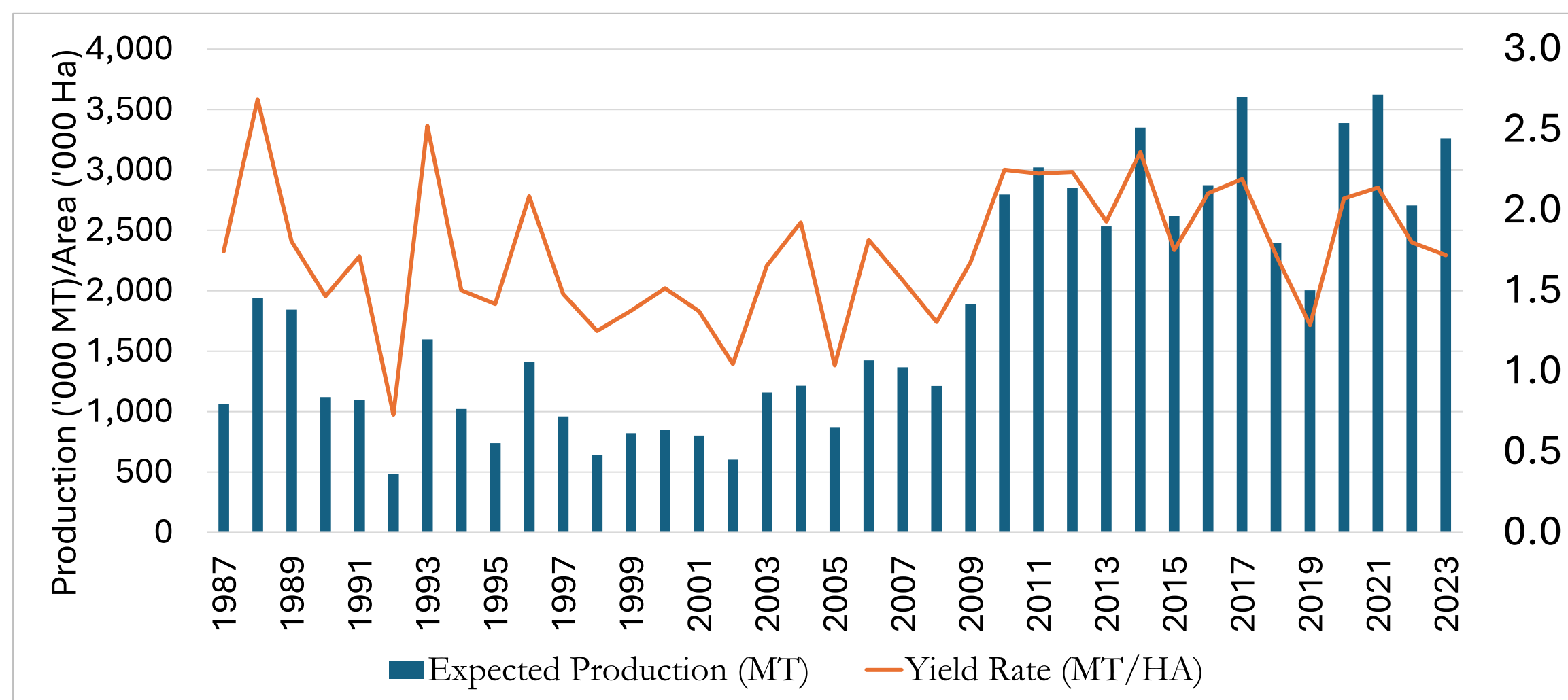


SOYBEAN

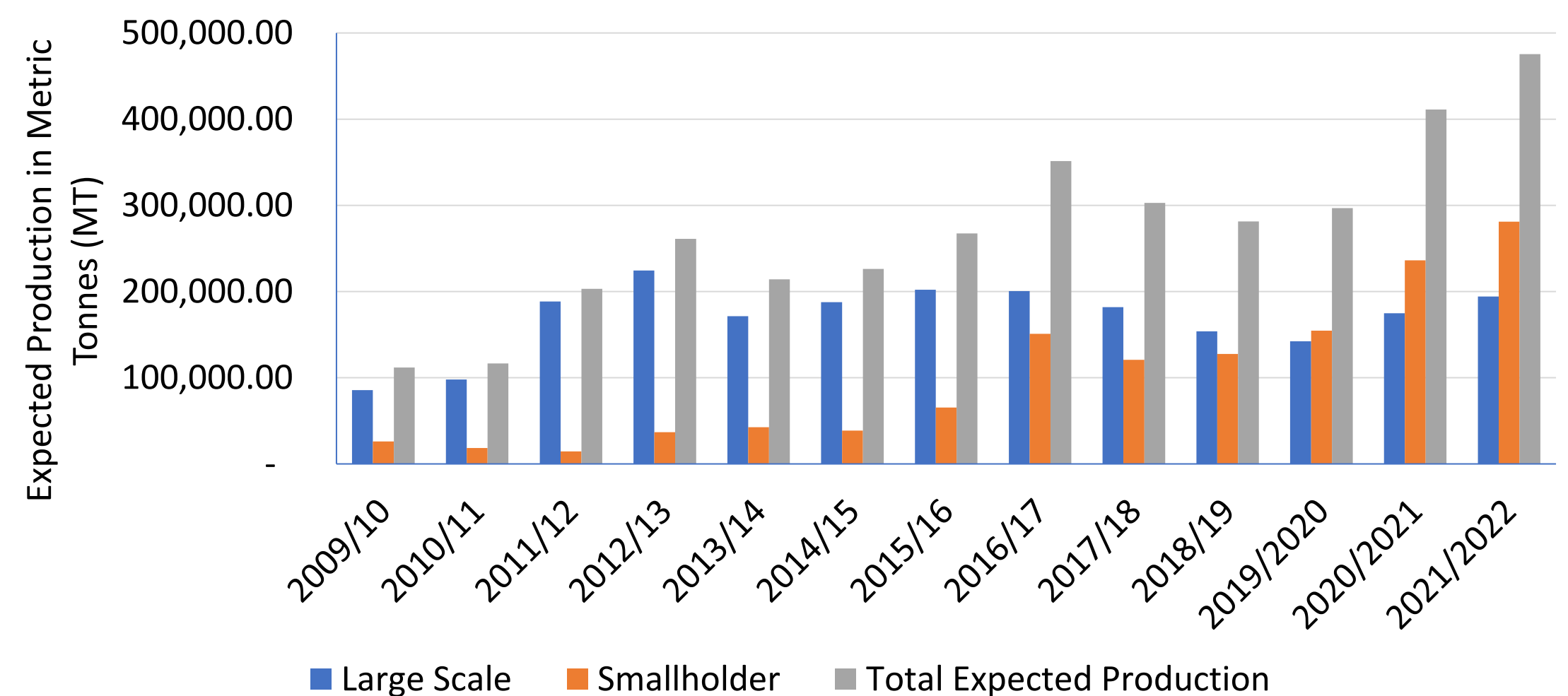
2

- An important source of protein for majority of the population
- Industrial demand rapidly increasing for oil and fish livestock feed
- Local demand forecasted to rise to 156,400MT by 2026
- Current productivity is 0.9MT/ha vs potential of 2-3.5MT/ha


Production and yield trends in Zambia



Zambia Soybean production trends 2009/10 – 2021/2022



HIHI INVESTMENT AREAS



AQUACULTURE 3

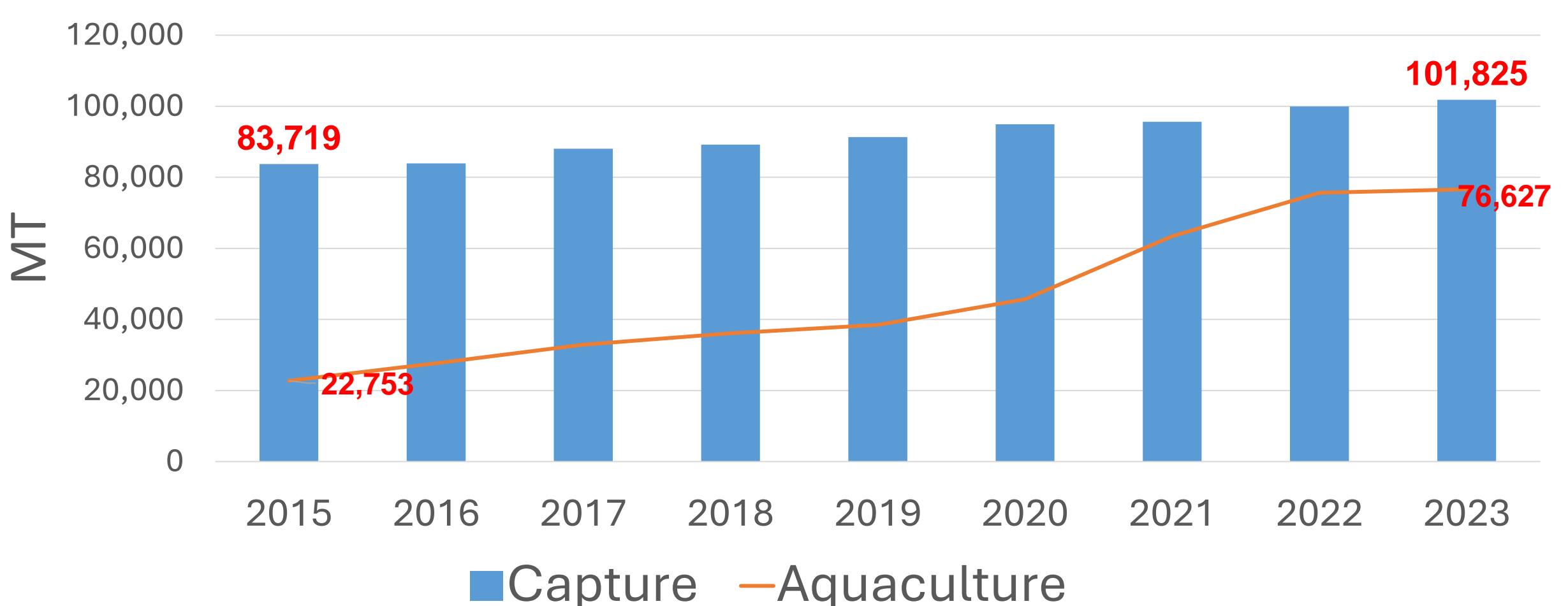
- Fish demand rapidly increasing – high supply gap
- Fish production from aquaculture tripled in the last 10 years
- Annual consumption estimated at 83,000MT in 2023, projected to increase to 95,000MT by 2028
- Imports of 126,000 MT valued at more than US \$300 mn in 2023



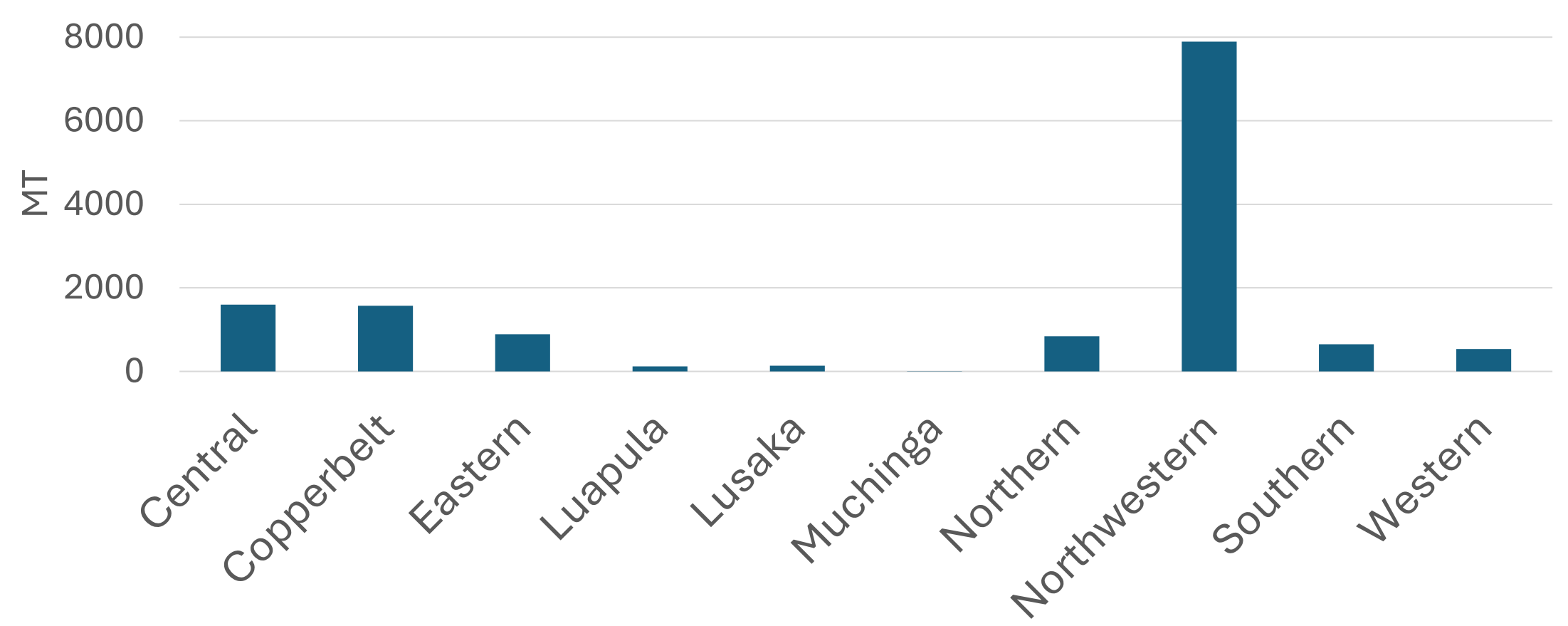
HONEY 4

- Important source of livelihood for the rural population
- Current production estimated at 14,000MT but has potential to produce more than 20,000M at 25,000 MT
- NW province produces 55% of the honey

Fish Production (MT) - Capture versus Aquaculture (2015 - 2023)



Honey Production by province (MT) May 2021- April 2022





OPPORTUNITY 1: INVESTING IN MAIZE

- **Goal:** Increase annual production by 2.5mn MT by 2030
- Increase yields from 2MT/ha to 5MT/ha
- Focused investments in **mechanization, irrigation** and **post harvest management**

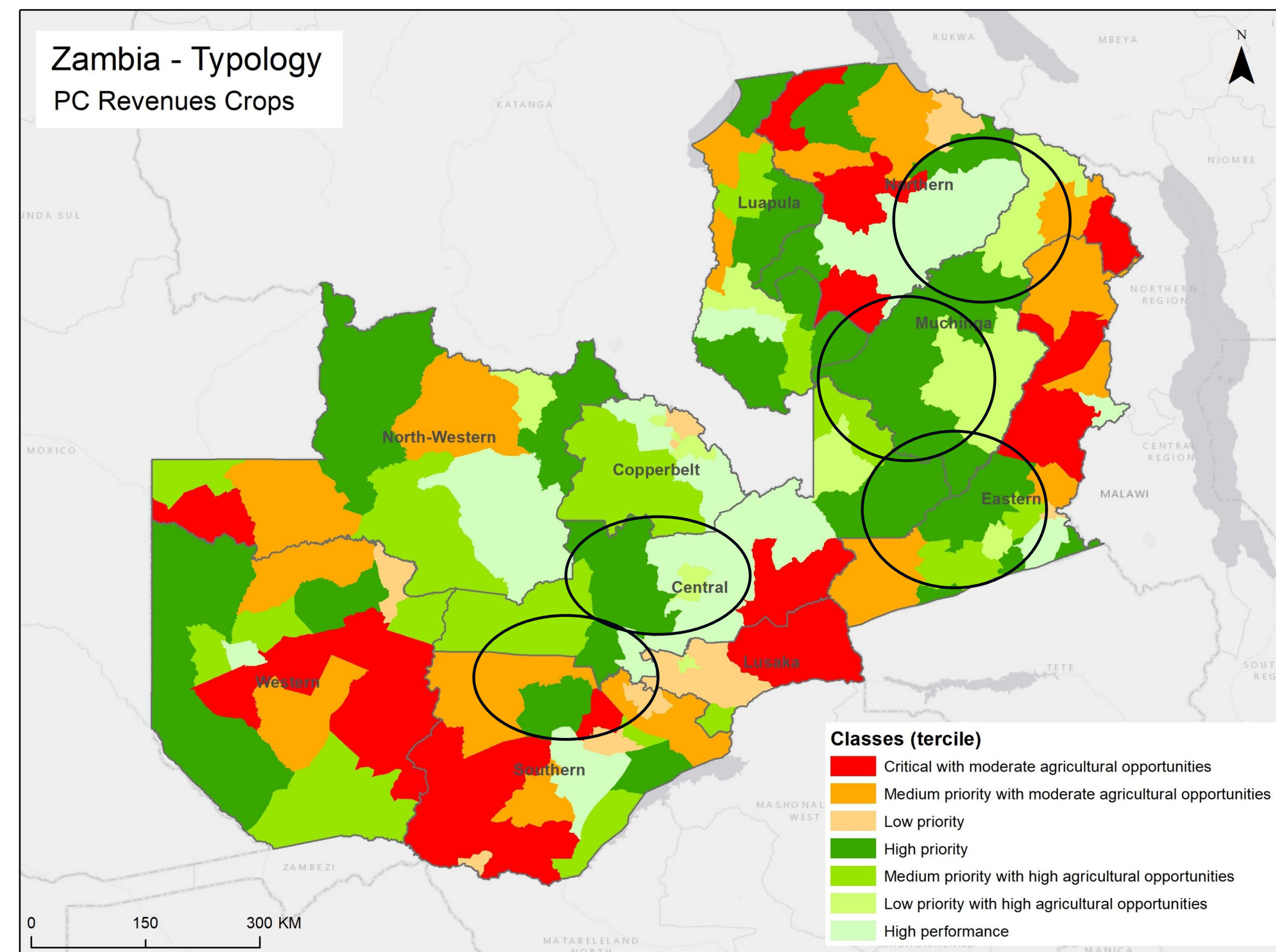
Target regions:

Northern, Muchinga, Southern, Central and Eastern provinces

Target market:

- Domestic market
- Export to regional markets
- Export to DRC as it is a high price market

HHI Typology With Target Regions Encircled



Source: FAO, OCHA, Atlas AI, 2022, Living conditions monitoring survey VII - 2015, Central Statistical Office, Zambia

MAIZE INVESTMENT AREAS

Bottlenecks	Key Investment	Risks	Mitigation
<p>High cost of purchasing machinery drives low mechanization - only 1.7% of smallholders are mechanized</p>	<p>MECHANISATION</p> <ul style="list-style-type: none"> Set up 838 one-stop shop "mechanization hubs" to provide tools such as tractors, boom sprayer, ploughs on rental basis These hubs can also support other agricultural crops 	<ul style="list-style-type: none"> Market demand fluctuations due to seasonality of farm operations (when production is limited to rainy season) 	<ul style="list-style-type: none"> Diversify services for different agricultural crops all year round Rental model between the farmers and machinery owners
<p>High dependence on rainfed agriculture</p>	<p>IRRIGATION</p> <ul style="list-style-type: none"> Irrigation financing to 50,000 farmers with Borehole +1HP Solar pump+drip Irrigation kit (1/Ha) Provide innovative financing options and water recharging mechanisms 	<ul style="list-style-type: none"> Securing financing can be difficult in case of limited credit history Climate change effects may create water shortages 	<ul style="list-style-type: none"> Explore financial options such as discounted loans and vendor financing Develop mechanism for water recharging
<p>Limited storage resulting in high post harvest losses (30-40%)</p>	<p>POST HARVEST MANAGEMENT</p> <ul style="list-style-type: none"> Set up 200 warehouses (5,000MT each) for storage and onward marketing Arrange access or logistics to reach sites 	<ul style="list-style-type: none"> Inadequate roads and network to reach sites 	<ul style="list-style-type: none"> Collaborate with local authorities to improve accessibility

USD\$ 343 mn
NPV

27-35%
IRR

750,000
Beneficiaries

3,754,976 tonnes of CO2 eq
Emission increase

	MECHANISATION	IRRIGATION EQUIPMENT	POST HARVEST MANAGEMENT
INVESTMENT NEEDED	US\$279 mn	US\$217 mn	US\$264 mn
NPV	US\$118 mn	US\$59mn	US\$166 mn
IRR	27%	35%	34%
PAYBACK PERIOD	~5 years	~6 years	~4 years
INCOME INCREASE PER CAPITA	~US\$386	~US\$399	-
DIRECT BENEFICIARIES	100,000	50,000	2000
INDIRECT BENEFICIARIES	500,000	750,000	500,000

Assuming productivity increase from 3MT/ha for emergent farmers to 5MT/ha progressively by 2030

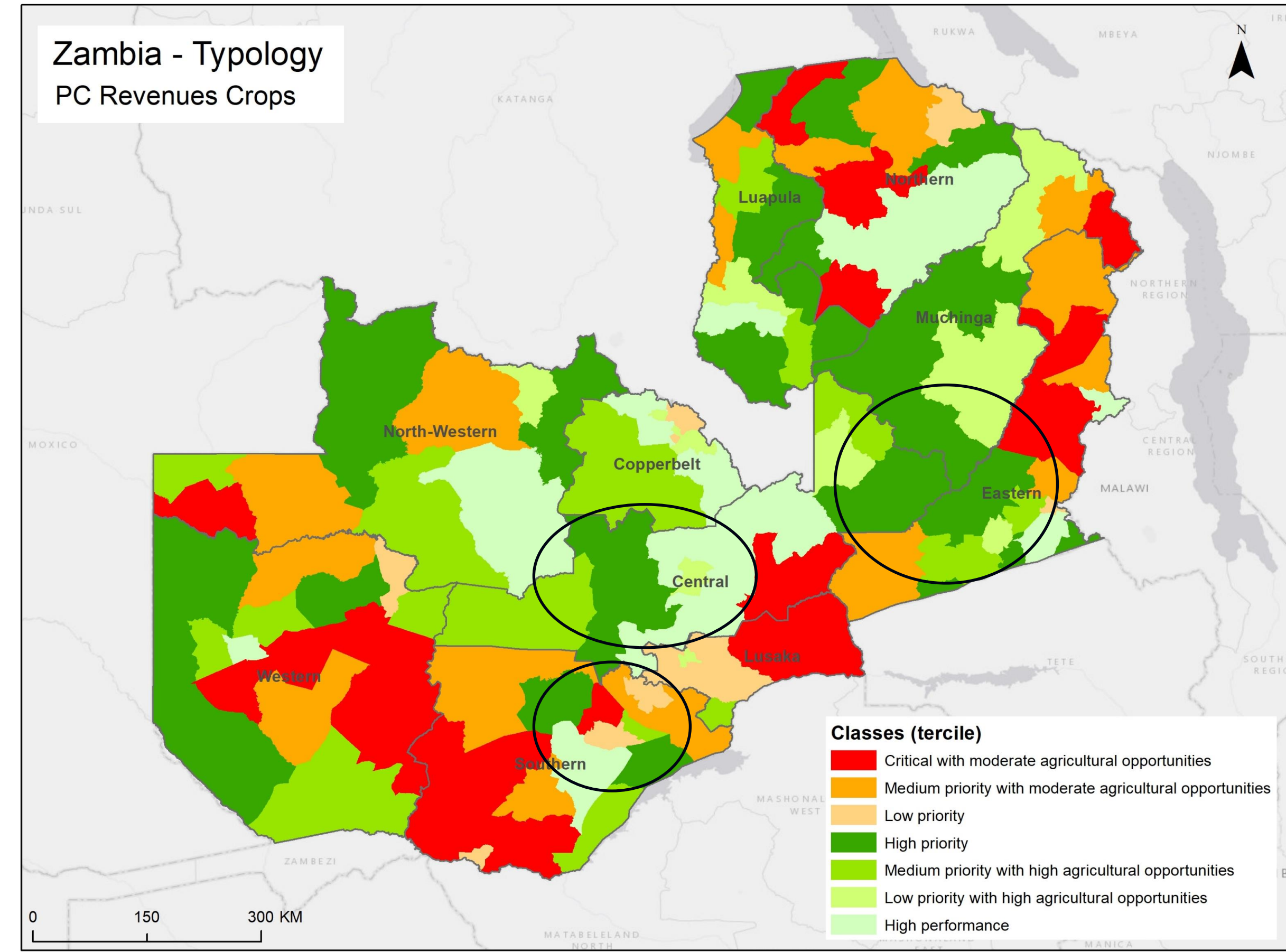


OPPORTUNITY 2: INVESTING IN SOYBEAN

- **Goal:** Increase annual soybean production by **227 799MT MT** by 2030
- **Investment Areas**
- Improved production practices
- Processing & value Addition
- Improved post-harvest management
- Increase Certified seed multiplication

Target regions:
 Eastern, Central and Southern provinces
Target market:
 Local market and export markets in COMESA and SADC regions

HiH typology with target regions encircled



Source: FAO, OCHA, Atlas AI, 2022, Living conditions monitoring survey VII - 2015, Central Statistical Office, Zambia

SOYBEAN INVESTMENT AREAS

Bottlenecks	Key Investment	Risks	Mitigation
<p>Limited access to inputs eg. seed and fertilizers and services drives low productivity (0.9MT/Ha)</p>	<p>IMPROVE PRODUCTION THROUGH OUTGROWER SCHEMES</p> <ul style="list-style-type: none"> • Provide integrated packages of inputs (seed, fertilizer, inoculum) and services (mechanization, agricultural insurance) across 138,060 hectares with training and financing as enablers 	<p>Initial resistance to change and limited access to financing</p>	<p>Provide comprehensive training and development partners driven grant financing</p>
<p>Large distance between production areas and existing processing units drives high price of products like oil, cakes and soymeal which lowers access for consumption</p>	<p>PROCESSING AND VALUE ADDITION</p> <ul style="list-style-type: none"> • Set up 6 SMEs processing and pressing facilities closer to local producing communities; capacity 2MT/hr each • Establish offtaker contracts with suppliers and have links with existing larger producers 	<p>The requirement of processing units for raw material is relatively high, which could present a challenge in the short term</p>	<p>Establish contractual agreement with suppliers Maintain links with existing producers who can provide mentorship and potentially financial access</p>
<p>Manual threshing leads to 5% loss from shattering and lodging</p>	<p>POST HARVEST MGMT - THRESHERS</p> <ul style="list-style-type: none"> • Set up 50 MSMEs facilities to offer threshing services with locally made threshers • Set up partnerships with producers to ensure sufficient utilization of services 	<p>Fluctuating demand for threshing services</p>	<p>Extend threshing service to other crops such as millet, rice, sorghum, cowpea, and common bean</p>
<p>Excessive seed recycling and low adoption of certified seed due to high seed prices</p>	<p>CERTIFIED SEED MULTIPLICATION</p> <ul style="list-style-type: none"> • Support 108 smallholder farmer associations with required inputs and training to grow certified seeds 	<p>Compromised seed quality</p>	<p>Intensify training and quality control measures</p>

USD\$ 47.9 mn
Total Investment

USD\$ 20.3 mn
NPV

17–38%
IRR

369,000
Beneficiaries

1,333,075 tonnes of CO2 eq
Emission decrease

	Improved production practices	Processing & Value Addition	Post Harvest Management	Certified seed multiplication
INVESTMENT NEEDED	US\$41.2 mn	US\$407,700	US\$375,000	US\$5.9 mn
NPV	US\$17.9 mn	US\$304,935	US\$52,042	US\$2.05 mn
IRR	38%	34%	17%	37%
PAYBACK PERIOD	~5.8years	~5years	~7 years	~5.3 years
INCREASE IN FARMER INCOME	~US\$166	-	-	US\$296
DIRECT BENEFICIARIES	60,279	50	1000 (50 SMEs)	251
INDIRECT BENEFICIARIES	301,396	250	5,000	301,396



OPPORTUNITY 3: INVESTING IN HONEY

Goal: Sustainably increase honey production by **17,500 MT/year** among 100,000

Investment areas:

- Forest Concessional Beekeeping
- Queen Rearing
- Out-grower Systems

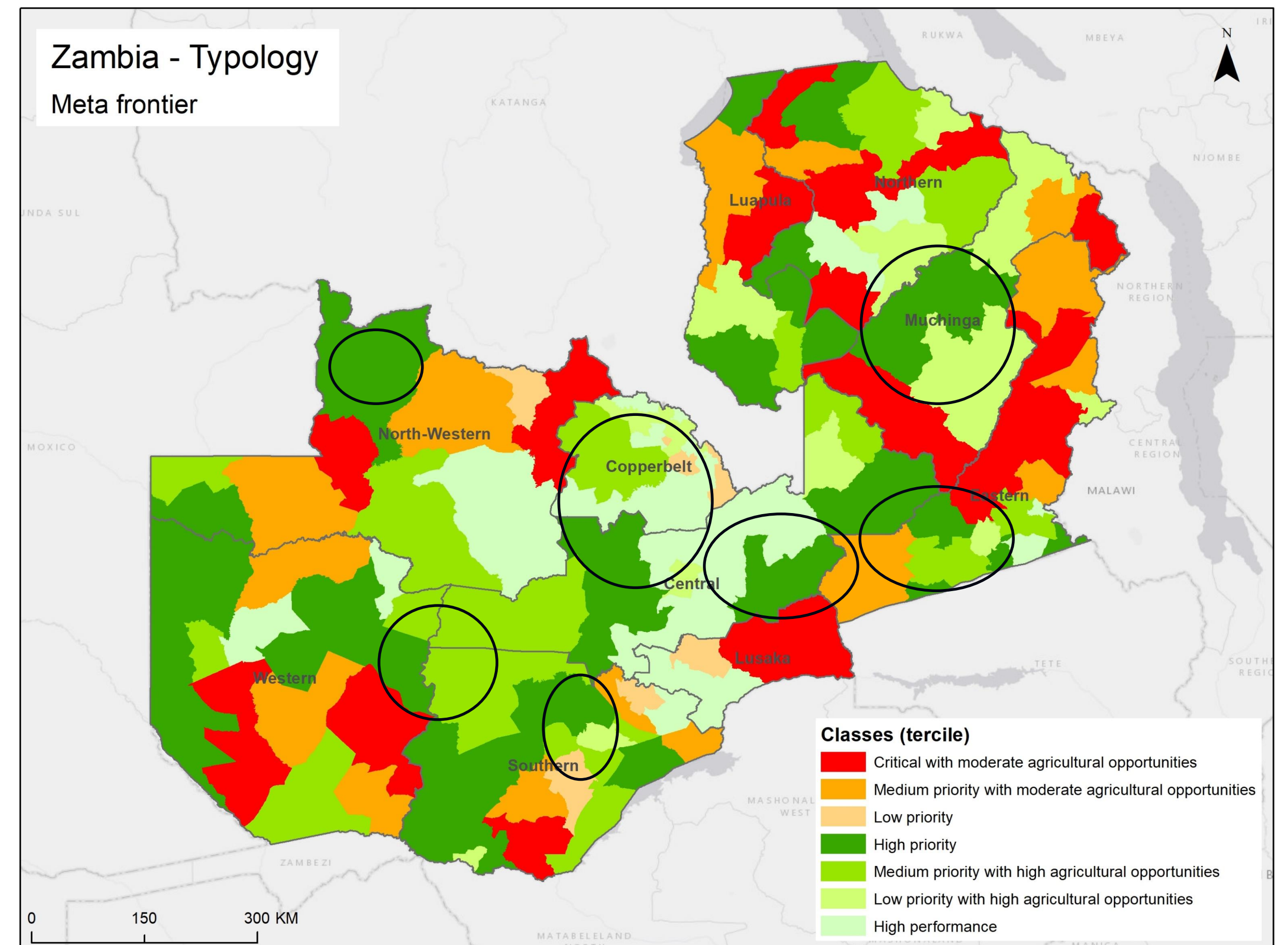
Target regions:

Northwestern, Copperbelt, Northern, Eastern, Central, Southern, Western Provinces.

Target markets:

SA, East and West Africa, EU, China, USA and the UK

Priority for beekeeping by vegetation type (target regions encircled)



Source: FAO, OCHA, Atlas AI, 2022, Living conditions monitoring survey VII - 2015, Central Statistical Office, Zambia

HONEY INVESTMENT AREAS

Bottlenecks	Key Investment	Risks	Mitigation
Lack of access to forest concessions resulting in low productivity (6kg/hive/annum)	<p>CONCESSIONAL BEEKEEPING</p> <ul style="list-style-type: none"> Establish public private partnerships to utilize local forest reserves Enhance productivity from 6 to 30 kg/hive/annum starting with 500,000 hives Concessions are obtained from the Department of Forests, and beekeeping operations are extended to local communities through out-grower support. 	These are pilots which need access to subsidies, tax incentives and cheap credit	Simplified concession procedures, land tenure security, environmental regulations
Poor yield of marketable honey (2,500 tonnes vs a capacity of 20,000 tonnes/year)	<p>QUEEN BEE REARING</p> <p>Set up specialized queen bee breeding centers - 4 units in 4 provinces comprising rearing kits, bee colonies and mating facilities</p>	Fluctuating demand for queen bees, with peaks when beekeepers are looking to replenish or expand their colonies	Buyer contracts can include Fixed pricing, guaranteed volumes, long-term partnerships and risk sharing contracts
	<p>OUTGROWER SUPPORTED PROCESSING</p> <ul style="list-style-type: none"> Provide an anchor processor who owns collection/onward processing/resale at 10 sites per province across 6 provinces Provide bulking and processing infrastructure 	Poor quality resulting from low traceability compounded by bad road network and communication	Train and monitor out-growers, and maintain centralized processing centers for quality control



USD\$ 3.45 mn
NPV

18-18.5%
IRR

600,000
Beneficiaries

	Forest Concessional Beekeeping	Queen Bee Rearing	Outgrower Supported Processing
INVESTMENT NEEDED	US\$22 mn	US\$3 mn	US\$23.2 mn
NPV	US\$1.85 mn	US\$115,000	US\$1.45 mn
IRR	18%	18.2%	18.5%
PAYBACK PERIOD	~4 years	~4 years	~4 year
INCOME INCREASE PER CAPITA*	~ US\$ 400	~ US\$ 400	~ US\$ 400
DIRECT BENEFICIARIES	100 technical jobs, 10,000 rural Jobs	50 technical jobs, 10,000 rural jobs	200 Technical Jobs, 80,000 rural Jobs
INDIRECT BENEFICIARIES	50,000	50,000	400,000
ENVIRONMENTAL IMPACT	<ul style="list-style-type: none"> • Protection of forest reserves • Biodiversity Enhancement • Agriculture productivity • Carbon trading 	<ul style="list-style-type: none"> • Biodiversity Enhancement • Agriculture productivity • Ecosystem Services • Carbon trading 	<ul style="list-style-type: none"> • Biodiversity Enhancement

*All 3 interventions are expected to increase average honey produced per beehive to 15kg/annum (conservative estimate). This translates to income increase of \$400 per farmer which is consistent with the CIFOR estimate at US\$100-\$400



OPPORTUNITY 4: INVESTING IN AQUACULTURE

Goal: Sustainably increase fish production by **130,000 MT by 2030 from 76,627 MT in 2023**

Target regions:

Four aquaculture parks:

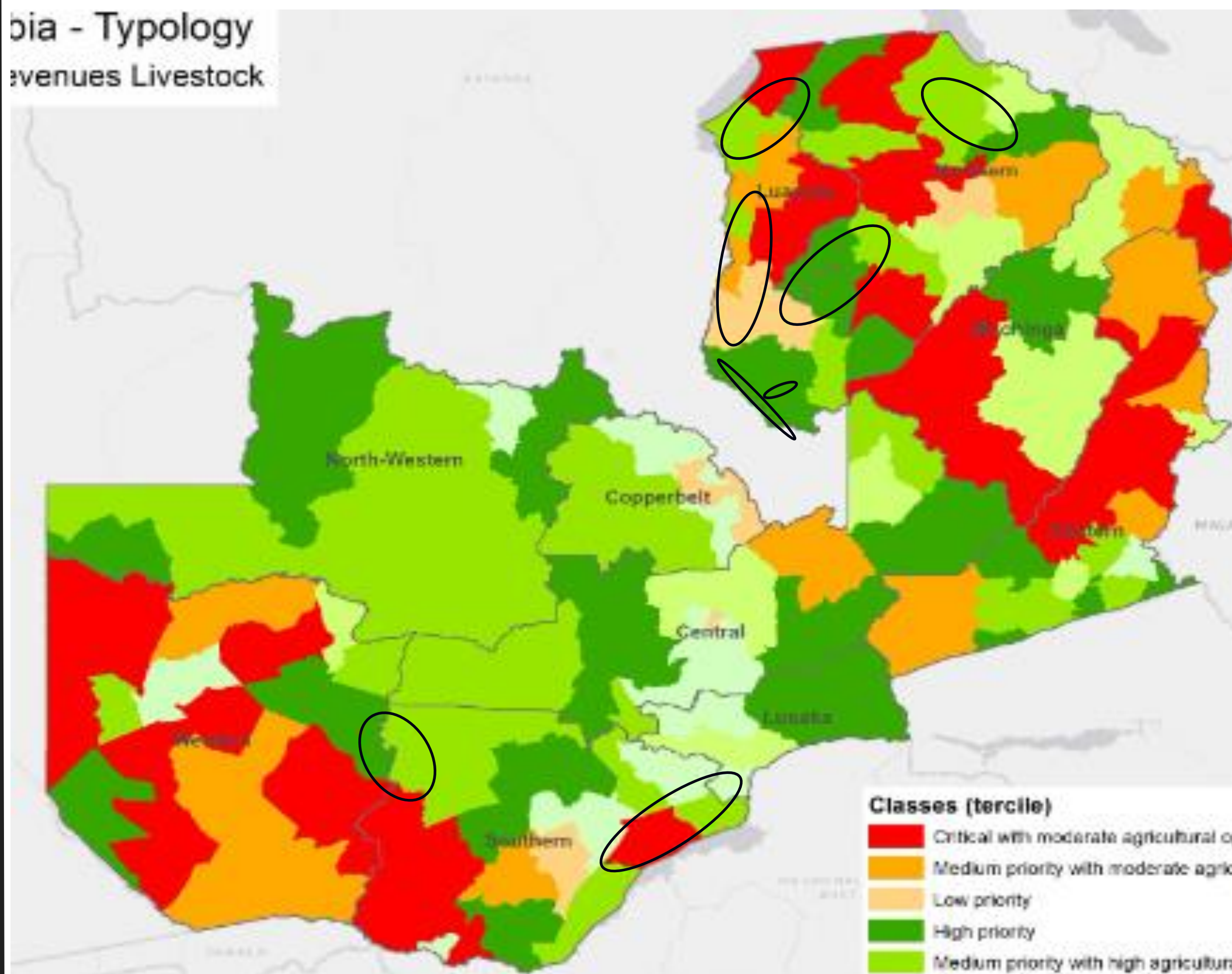
- Western Province: Kaoma and Kasempa
- Southern Province: Lake Kariba (Siavonga, Gwembe & Sinazongwe)
- Luapula Province: (Lake Bangweulu [Samfya], Lake Mweru [Nchelenge] & Luapula River [Chembe, Milenge, Mwense])
- Northern Province: Mungwi & Kasama

Target market:

Regional: SA, East and West Africa

Global: China, USA, UK and Schengen area

HiH typology with aquaculture parks encircled



AQUACULTURE INVESTMENT AREAS

Bottlenecks	Key Investment	Risks	Mitigation
<p>Limited access to quality fish fingerlings, feed and other inputs</p>	<p>IMPROVE INPUT SUPPLY</p> <ul style="list-style-type: none"> • Construct 4 hatcheries, 4 nurseries • Set up 4 feed production plants • Establish 4 factories for producing cages and other aquaculture accessories • Improve feeder and access roads to accelerate private sector investment 	<ul style="list-style-type: none"> • Low affordability of quality inputs • Low adherence to standards 	<ul style="list-style-type: none"> • Promotion of sustainable linkages to financing institutions and partners • Strong enforcement of a regulatory framework that promotes quality
<p>Low smallholder farm productivity and overall production</p>	<p>OUTGROWER SCHEMES</p> <ul style="list-style-type: none"> • Provide 5 cages (6m*6m*6m) per farmer for 1,675 farmers • Construction of 6,685 climate-smart fishponds in Northern, Northwestern and Western Provinces • Fish farmers production systems will serve as nuclei provision points for the small and medium scale fish farmers 	<ul style="list-style-type: none"> • Low rainfall • Low prices due to increased supply 	<ul style="list-style-type: none"> • Use of Climate Smart production methods including pond lining, no plastics • Use efficient water management practices
<p>Inadequate post-harvest management</p>	<p>POST HARVEST MANAGEMENT</p> <ul style="list-style-type: none"> • Accelerated private sector investment to construct 7 cold rooms and 24 processing facilities for annual outputs of 60 	<p>Low utilization of post-harvest facilities</p>	<ul style="list-style-type: none"> • Intensified marketing of the cold rooms and processing facilities



USD\$ 58.5 mn
NPV

14.7% to 28.2%
IRR

86,875
Beneficiaries

2.1 mn
(tCO₂-e)

Variable	Input Supply	Production Out-grower Scheme	Post-harvest Management	Support services
INVESTMENT NEEDED	US\$ 2.62 mn	US\$79.1 mn	US\$6.2 mn	US\$8.8 mn
NPV	US\$ 0.75 mn	US\$52.3 mn	US\$0.61 mn	US\$4.8 mn
IRR	19.4%	28.2%	14.7%	24.6%
PAYBACK PERIOD	~2 years	~2 years	~7 years	~5 years
INCOME INCREASE PER CAPITA	US\$ 650	US\$ 1,520	US\$ 700	US\$ 250
DIRECT BENEFICIARIES	17,375	15,975	1,995	16,680
INDIRECT BENEFICIARIES	86,875	79,875	9,975	83,400
ENVIRONMENTAL IMPACT MITIGATION	<ul style="list-style-type: none"> • Production of feed (maize, soybean) using CSA 	<ul style="list-style-type: none"> • Climate Smart production methods including mad pond lining (no plastics). • Efficient water management practices 	<ul style="list-style-type: none"> • Effective and elaborate waste disposal practices for all plants 	<ul style="list-style-type: none"> • Extension services that promote CSA

USD 319

Average Income
Increase per
Capita

USD\$ 916.1 mn
Total Investment

USD 200 mn
Govt Financing

USD\$ 716 mn
Investment Gap

1.97 mn
Beneficiaries

12.2% – 38%
Average IRR

USD 533.1 mn
Overall NPV



MAIZE

Increase annual production
by 2.5mn MT/yr **by 2030.**

Cost: **US\$760 mn**

IRR: **27%-34%**

NPV: **US\$343 mn**

Beneficiaries:

Direct: **152,000**

Indirect: **912,000**

Income increase per
Capita: **USD1376**



SOYBEAN

Increase annual soybean
production from by **227
799MT MT/yr** by 2030

Cost: **US\$47.9 mn**

IRR: **17%-38%**

NPV: **US\$15.2 mn**

Beneficiaries:

Direct: **61,580**

Indirect: **370,000**

Income increase per
capita: **USD258.5**



HONEY

Sustainably increase honey
production **by 20,000 MT/yr
by 2030**

Cost: **US\$48.2 mn**

IRR (%): **18%-18.5%**

NPV: **US\$3.45 mn**

Beneficiaries:

Direct: **100,000**

Indirect: **600,000**

Income increase per
capita: **USD400**



AQUACULTURE

Sustainably increase fish
production by **130,000
MT/yr by 2030**

Cost: **US\$60.0 mn**

IRR: **14.7%-28.2%**

NPV: **US\$14.0 mn**

Beneficiaries:

Direct: **17,375**

Indirect: **86,875**

Income increase per
capita: **USD780**