Southern Africa Soy Roadmap – Zimbabwe value chain analysis November 2010 – February 2011





Executive Summary (1/2)

- The disruption of 70% of all non-communal agricultural land and extreme economic decline led to 58% decrease in agricultural production from 2000 to 2010
 - Land reform disrupted most commercial farming in the country during the 2000's
 - The economic decline that led to hyperinflation dissipated liquidity, creating a situation where credit is mostly nonexistent or too expensive for agricultural production
 - Without demand for inputs (due to lack of credit), the input supply chain disappeared (although it is re-gaining strength, partly due to NGO support) and a lack of financing also prevented investment in crucial infrastructure (e.g., Irrigation systems)
- As a result of the decline in agricultural production, Zimbabwe's soy demand far outstrips its production, with demand at 125K MT per annum and production at 50K MT per annum
 - The current market is met with imports of oil from South Africa, beans and cake from Zambia, beans from Malawi, and (recently) cake from India
 - Both small and commercial farmers can produce for under \$300/MT, which is competitive against the current import parity for non-GMO cake of \$730/MT (and would be competitive against GMO cake, which is usually around 10% cheaper than non-GMO, although more easily available)
 - Most of the production in Zimbabwe occurs in the areas surrounding Harare, the major processing center
 - Processing capacity is at 460K MT but current utilization is at 16%; two of the four major processing plants are therefore mothballed because of a lack of supply of soybean
 - Surface Investments is one of the most sophisticated processors in the region, with a production cost of \$40-50/MT
 - Growth of the livestock industry (especially poultry and fish, driven by low cost of and preference for white
 protein over beef, continued presence of large producers and shorter financing cycle) is being constrained by
 the lack of supply of soya meal



Executive Summary (2/2)

- Soy production has declined from 171K MT in 2001 due to the decline of commercial farming, and a lack of financing and agronomy training, but traders are seeing a trend of smallholders substituting soy for maize because of the current high prices
 - Commercial farmers produce 65% of production, while smallholders produce 35% of production (previously this breakdown was 90%/10%)
 - There enough land available to meet demand as most of the land previously planted with soy remains unused
 - There is sufficient supply of inputs, but farmers (both smallholder and commercial) lack financing to obtain them
 - Farmers in Zimbabwe are educated and sophisticated and can farm soy effectively given credit, inputs and training
 - While smallholders can help increase production, medium-sized and commercial farmers will need to increase production if Zimbabwe is to meet future soyabean demand through domestic production in the short-medium term
- While private investment is unlikely to return in sufficient amounts to finance soy production in the nearterm, financing could be provided by industry players through a contract farming model which would also provide an avenue for skill transfer
 - In the short-term, the re-establishment of a national soy association could allow industry players to agree on a coordinated approach for increasing production
 - Increasing small-farmer production and yields and utilizing university and agricultural research land for soy growing could reduce the gap in production
 - Strengthening agricultural extension services will help farmers gain increased yields
 - In the medium-term, non-communal farmers who occupy the majority of soy-growing land may have a significant role to play
- There is the potential to increase the incomes of 35k smallholders by \$138 p.a.
 - In addition, increased soy production will enable faster growth of livestock and processing industries, creating
 additional jobs in these sectors



Agenda

- Zimbabwe only produces ~30% of its demand for soy, but considerable scope exists for growth of production
 - Background
 - Production
 - Demand
 - Trade
- Despite strong market demand, sophisticated processing capabilities and capacity, and the ability for commercial farmers to grow soy competitively, the soy industry is held back by a lack of financing and land complexities
- Opportunities for near-term actions to improve production exist, but full production capacity will likely only be unleashed over a longer time horizon, as key macro issues such as liquidity and land ease or are resolved
- There is the potential to increase the incomes of 35k smallholders by \$138 p.a.



Zimbabwe Country Overview



Geography

- 390.757 sq km of area (1% water; 99% arable land)
- Boundaries with Botswana (813 km), Mozambique (1,231 km), South Africa (225 km), and Zambia (797 km)
- Tropical; moderated by altitude; rainy season (November to March)

People

- **11,651,858** (3.0% growth rate), **mostly young** (44% under 15) and **highly rural** (63%, with a rate of urbanization of 2.2%)
- High rate of literacy (90%)
- Low life expectancy (47.5 years), and moderate infant mortality rate (3.1%)

Politics

- Parliamentary democracy, with independence in 1980 from Rhodesia
- Last elections in 2008, which resulted in a power-sharing government
- New elections expected in 2011

Economy

- GDP per capita of approximately \$400; 68% of population below poverty line
- Services is the main economic sector (56.9% of GDP). Agriculture (19.1% of GDP) occupies 66% of the labor force
- Significant producer and exporter of tobacco, cotton, and sugar

Energy, communications, and transportation

- Unreliable energy infrastructure, common power outages that render irrigation unreliable
- 354 thousand telephones, **1.7 million mobile phones**, 1.4 million internet users
- 19 airports, 2 ports (Binga and Kariba), 97K km of roadways (of which a 80% are not paved), 3K km of railway



Source: CIA Factbook

Following independence, a program of land reform was introduced, culminating with fast-track land reform in the 2000s



Independence (1980-1990)

•At independence in 1980, the government inherited an unfair distribution of land as well as deep and persistent poverty in the communal areas

• The priorities at independence were to correct the historical imbalance in land through an orderly, transparent and sustainable land redistribution program, and to relieve population and livestock pressure on communal land

•By the end of the 1980s, the implementation of these strategies **proved disappointing**



Liberalization (1990-1997)

•As part of the economic structural adjustment program, changes were made to the constitutions of the agricultural marketing boards that gave them greater autonomy in pricing and business decisions

 In 1990, the government unveiled a new national land policy. Among other measures, 5 million ha of commercial farmland was to be acquired in order to resettle 110,000 families

• The manner in which leases were allocated and the lack of a transparent system led to concerns about the process



Fast-track land reform (1998-2008)

 Policy framework for Land Reform and Resettlement Programme Phase II proposed in 1998

 In 2000, a referendum on new constitution that would have allowed for compulsory land acquisition without compensation was rejected; Fast-track resettlement process commenced

 In 2005, land acquired through fast-track process was nationalized

Sources:

"Livestock and Feed Industries in Zimbabwe", Mota 2010 "Comprehensive Economic Recovery in Zimbabwe", UNDP, 2008 Interviews



Disruption on 70% of non-communal agricultural land and economic factors led to a 58% decrease in farm production between 2000 and 2010



1/ MLLR, 2006 2/ Hanke Hyperinflation Index for Zimbabwe 3/ Commercial Farmers Union (non-livestock production)





The best land on which to produce soy was commercial land that has been distributed as A1 farms and A2 farms

Category	Description	Farm size	# of hectares , 000	Avg farm size, ha
Communal	Former Tribal Trust Lands – farmers allocated land by Chief; most lands are on non-prime agricultural land	Small	16,400	15
Old resettlement	Land allocated to subsistence farmers before 2000	Small	3,668	50
A1	Former commercial land that was reallocated	Small	4,137	28
Small A2	Former commercial land that was reallocated	Medium	2,988	135
Small commercial	Small to medium-sized commercial farmers	Medium	1,400	165
Large A2	Former commercial land that was reallocated	Large	509	2,435
Indigenous	Land bought during the original "willing seller/willing buyer period" between 1979 and 1999	Large	530	555
Large commercial	Land occupied by commercial farmers	Large	117	593
Estates and unsettled grazing land	Corporate estates, parastatal estates, conservancies, institutions, unsettled grazing land	Large	3213	varies

Source: "Fast Track Land Reform Baseline Survey in Zimbabwe", Moyo; Interviews



Maize and cash crops currently dominate Zimbabwe; tobacco, cotton and sugar are the main cash crops



Source: Commercial Farmers Union (CFU)



Zimbabwe imports 70% of its soya products, with 65% of its production coming from commercial farmers



Source: Zimbabwe traders, processors



Agenda

- Zimbabwe only produces ~30% of its demand for soy, but considerable scope exists for growth of production
 - Background
 - Production
 - Demand
 - Trade
- Despite strong market demand, sophisticated processing capabilities and capacity, and the ability for commercial farmers to grow soy competitively, the soy industry is held back by a lack of financing and land complexities
- Opportunities for near-term actions to improve production exist, but full production capacity will likely only be unleashed over a longer time horizon, as key macro issues such as liquidity and land ease or are resolved
- There is the potential to increase the incomes of 35k smallholders by \$138 p.a.



Soy production decreased by 59% in 2002 and continued to decline by 5% p.a. through 2009

Zimbabwe soy production,

2000-2010, '000 MT

CAGR, 2000 – 2010, %





The majority of land in Zimbabwe is suitable for growing soy, but the best land for growing soy is in regions I and II





TechnoServe 12 BUSINESS SOLUTIONS TO POVERTY

As a result of land reform, lack of inputs, lack of credit, and lack of skill transfer, soy yields are 50-75% of 2000 levels

Soy yields, 2000-2010, MT/ha





Most of the potential soy production is on land allocated to A1 and A2 farmers, though university and agricultural research land offer potential



Source: FAO; Government of Zimbabwe 2003, interviews

Notes: Communal land includes region I & II land

A1 and A2 land is the sum of hectarage in Mashonaland Central, East, and West

Potential production assumptions: 5% land utilization and 1 MT/ha yield for communal farmers; 20% land utilization and 2 MT/ha yield for CVCe 14 A1; 20% land utilization and 3 MT/ha yield for A2, 100% land utilization and 5 MT/ha yield for university and ag research land s solutions to poverty

Agenda

- Zimbabwe only produces ~30% of its demand for soy, but considerable scope exists for growth of production
 - Background
 - Production
 - Demand
 - Trade
- Despite strong market demand, sophisticated processing capabilities and capacity, and the ability for commercial farmers to grow soy competitively, the soy industry is held back by a lack of financing and land complexities
- Opportunities for near-term actions to improve production exist, but full production capacity will likely only be unleashed over a longer time horizon, as key macro issues such as liquidity and land ease or are resolved
- There is the potential to increase the incomes of 35k smallholders by \$138 p.a.



Current market demand is constrained at 125K MT by the market for soycake

Demand for soybeans for cake, '000 MT, 2009/10

Demand for soybeans for oil, '000 MT, 2009/10



Source: Interviews

Notes: Demand for soyabeans for cake calculated with 80% extraction rate; demand for soybeans for oil calculated with 17% extraction rate (estimated 48K MT demand for oil)

- Estimates for oil demand were as high as 72KMT



Market growth is expected to continue, creating a 208K MT market by 2020

Projected demand for soybeans,

'000 MT, 2020





Domestic growth is expected to grow with the poultry industry, creating a 205k MT market constrained by oil demand by 2020

Demand for soybeans for cake, '000 MT, 2009/10

Demand for soybeans for oil, '000 MT, 2009/10



Source: Interviews

Α

Notes: Demand for soyabeans for cake calculated with 80% extraction rate; demand for soybeans for oil calculated with 17% extraction rate (estimated 48K MT demand for oil)



The Zimbabwean poultry industry is expected grow rapidly as consumption rises rapidly with income

Key drivers of the growth in poultry feed are

Α

- Rising incomes driving greater poultry consumption
- Ongoing investment by poultry industry to increase processing capacity and lower costs

Demand for soybeans by poultry industry, 2010-2020, '000 MT





The Zimbabwean pork industry is expected to grow as demand for protein increases



Note: growth rate estimated to be equal to poultry and fish growth

Α



The Zimbabwean aquaculture industry is expected to grow as incomes rise and demand for white protein and fish increases



Α



Agenda

- Zimbabwe only produces ~30% of its demand for soy, but considerable scope exists for growth of production
 - Background
 - Production
 - Demand
 - Trade
- Despite strong market demand, sophisticated processing capabilities and capacity, and the ability for commercial farmers to grow soy competitively, the soy industry is held back by a lack of financing and land complexities
- Opportunities for near-term actions to improve production exist, but full production capacity will likely only be unleashed over a longer time horizon, as key macro issues such as liquidity and land ease or are resolved
- There is the potential to increase the incomes of 35k smallholders by \$138 p.a.



Zimbabwe is currently in a position to import beans to process for cake and in the future, could be a competitive exporter to South Africa

Opportunities for trade

- Zimbabwe is a net importer of soyabeans, cake, and oil
- Zimababwe, however, was a net exporter in the early 2000's
- When production increases Zimbabwe is well situated to export to the region

 Zimbabwe's central location means it is well placed to export to South Africa
 (soybeans and soy cake)
 - Zimbabwe's sophisticated processing (\$40-50 per ton at Surface Investments vs. \$120-140 in the region) should allow Zimbabwe to import beans and export cake competitively
 - Zimbabwe also has some of the best highways in the region, allowing for reliable transportation



Agenda

• Zimbabwe only produces ~30% of its demand for soy, but considerable scope exists for growth of production

- Despite strong market demand, sophisticated processing capabilities and capacity, and the ability for commercial farmers to grow soy competitively, the soy industry is held back by a lack of financing and land complexities
- Opportunities for near-term actions to improve production exist, but full production capacity will likely only be unleashed over a longer time horizon, as key macro issues such as liquidity and land ease or are resolved
- There is the potential to increase the incomes of 35k smallholders by \$138 p.a.



We have analyzed the soy industry by looking at the whole value chain





Generally, high quality inputs are available, but a lack of credit can prevent access to them



Current Situation

When financing is available, use and availability of basic inputs such as lime, fertilizer, herbicide, inoculants and seed are sufficient Inputs are available A I (in the set of the

- Seeds, inoculants, and fertilizers are of high quality and are provided at competitive cost
- Irrigation systems need updating and electricity is often not available, but generators can be economical depending on price of soy

Underlying cause

- A lack of financing options for new farmers (in part due to lack of land tenure)
- Focus by government and NGOs on rebuilding input market over the past year
- Seeds, inoculants, and fertilizers are produced locally (some fertilizer is imported)
- A lack of financing options for capex investment and Zimbabwe has massive electricity shortages

Smallholders

Usage of all inputs is very low among smallholders

- A lack of financing for adequate inputs (specifically fertilizer and lime)
- Soy is a relatively new crop for many smallholders causing a lack of knowledge of proper input usage and benefits



Source: Interviews

BACKUP

Most inputs are available in Zimbabwe



	Current Situation	Current Capacity	Key Players
Seed	 Commercial: Most farmers recycle seed every 2-4 years Smallholder: Most smallholders recycle seed for 2-4 years Rust resistant varieties now being grown with no additional cost 	 Seed shortages have not been a problem (but capacity will need to grow with demand) Some seeds are not germinating, however, indicating a need to improve seed handling practices and encourage germination testing 	 Seed Co (~90% share) Pannar
Fertilizer	 Commercial: lack of fertilizer use is not an issue Smallholders: usage is very low 	Availability is non-issue	 Zimbabwe Fertilizer Co Windmill Nutrachem Omnia
Inoculant	 Commercial: most farmers have experience farming soy – inoculant use does not seem to be a problem, but would need to be explored when new farmers begin production Smallholders: usage is very low 	 Commercial: Inoculant is available – capacity is a non- issue Smallholders: mostly distributed through NGOs 	 Soil Productivity Research Lab (SPRL) (receiving \$140K N2Africa investment)



Tractors, combines and irrigation systems need updating, but the financing needed for investment is unavailable

Current Situation Current Capacity Key Players As long as companies are **Circle Lime** · Commercial: farmers test soil and notified in advance they Early Worm adjust where necessary Lime can supply sufficient lime Alaska · Smallholders: Very little soil **Dynamite** testing or lime usage Herbicide is widely Windmill · Commercial: 90% of existing available to both Zimb Fert Co. farmers use herbicides and commercial farmers and Citchem chemicals fully Herbicide / smallholders Agricura Smallholders: 50% of smallholders **Chemicals** Polarchem • use herbicides and chemicals Other small players • Commercial: 100% of commercial · Limited availability Farmec farmers utilize mechanization: 50% Lack of financing limits Bain Munted Motors of equipment is old, needs updating **Mechanization** access Smallholders: little to no Other small mechanization players Commercial: 90% of commercial Equipment is old Center irrigation · Capex investment needed, **Right Rain** Irrigation farmers use irrigation • Smallholders: No irrigation for soy but financing is lacking Dore Input

Source: Interviews

Unreliable electricity situation limits effective irrigation





BACKUP

Production practices vary significantly between commercial and smallholder farmers, leading to very different yields

	Soy yield, MT/ha, 2010				
	Average	Range	Competing crops	Importance to farmer	Production practices
Commercial farmers (large)	1.8	1.5 – 5.0	 Maize, Michigan pea bean, sugar beans, groundnuts 	 Important commercial crop with rotational and farm management benefits (different planting window) Soy currently being grown on forward contracts 	 Generally good agronomic practices The best farmers achieve 4-5 MT/ha with irrigation
Small farmer (communal)	0.5	0.3 – 2.0	 Maize, groundnuts, sugar beans, cow peas 	 Lower priority crop than maize as maize is a strong cultural crop Traders see trend of smallholders moving from maize to soy because of current high prices 	 Generally have very poor agronomic practices Insufficient instruction and attention from extension services Often plant late Inadequate weed control Inadequate soil testing and lime use



Land use is constrained and government extension agents are under-resourced

	Current Situation	Current Capacity	Key Players
Land	 Most soy-land laying fallow following land reform 	 Virtually unlimited land available in region II for soy production 	GovernmentNew farmers
Agronomic practices	 Commercial: Strong agronomics among experienced farmers; weak agronomics among many new farmers Smallholder: Very weak agronomics (e.g., late planting, insufficient weeding & disease control) as they are inexperienced in soy production and soy requires more work to produce than maize 	 Government extensionists (Agritex) are under-resourced in numbers, training and transportation 	 Government extension services (Agritex) Foundations for Farming (conservation agriculture) Consultants (former farmers) Numerous NGOs
Competing crops	 Maize is the main competitor, but trend is towards soy because of higher prices and more availability of inputs Tobacco is grown in same areas, but on different soils so is not a direct competitor 		

Source: Interviews



BACKUP

Soy is a profitable crop with the best farmers making \$214 per MT at current prices

Comparison of production costs and yields,

2010



1/Agricultural Research Trust (ART), interviews, TNS analysis 2/Zimbabwe Farmers Union (ZFU), interviews, TNS analysis



Small farmers can increase margins through investment in inputs and improved agronomics



Impact of moving to best in class production methods, Cost per MT, \$, 2010



Sources and notes:

1/ Farmer interviews, Agricultural Research Trust Interview





echno

BUSINESS SOLUTIONS TO POVERTY

33

2/No land costs exist in most circumstances. In situations with leasing agreements, payment is usually 5 10% of revenues. Breakeven calculated with 7.5% payment on \$400 price.

^{1/}Agricultural Research Trust (ART), interviews

Dry land commercial farming is only marginally profitable



1/Agricultural Research Trust (ART), interviews

2/No land costs exist in most circumstances. In situations with leasing agreements, payment is usually 5 10% of revenues. Breakeven calculated with 7.5% payment on \$400 price.



BUSINESS SOLUTIONS TO POVERTY

At current prices, the best commercial farmers can make significant profit Average cost of production for best in class commercial soybean farmers¹ \$/MT, 2010 2010/11 Estimated beginning of season price = \$400



^{1/}Agricultural Research Trust (ART), interviews

2/No land costs exist in most circumstances. In situations with leasing agreements, payment is usually 5 10% of revenues. Breakeven calculated with 7.5% payment on \$400 price.



echn

BUSINESS SOLUTIONS TO POVERTY



Note:Increased income from maize rotation calculated from 10% yield improvement on 2 MT/ha of maize at a production at a price of \$275

36

BUSINESS SOLUTIONS TO POVERTY



Source:ZFU soya budgets, ART soya budgets, interviews Note:Increased income from maize rotation calculated from 10% yield improvement on 2 MT/ha of maize at a production business solutions to poverty cost of [x] and price of [x]

Domestically produced soy beans are 60% of the cost of import soy beans

Soybean cost,

\$/MT, 2010



Sources: Interviews, ART budgets, ZFU budgets Note: Import parity calculated with cost of landing beans at Beira plus transportation cost to Harare





Soy processing capacity, production and consumption









Some of the largest feed end-users produce their own feed, but also procure feed from other players





BACKUP

There is significant processing capacity in Zimbabwe; solvent extraction is dominated by Surface Investments

Processor	Current Overview	Capacity	Туре	Location
Surface Investments	 Operating at ~100% utilization State of the art equipment \$40-50/MT processing costs (vs. \$120-140 for most processors) Plans to increase margarine production (15K MT capacity) to supply neighboring countries (currently imported via Durban) 	80K MT currently; 180K MT as of March 2011	Solvent extraction	Harare
Olivine	 Operating at 10% capacity because of low soyabean supply 	~120K MT per year	Solvent extraction	Harare
National Foods	 Plant currently closed Utilizing processing capabilities of another processor 	~80K MT per year	Solvent extraction	Harare
United Refineries	 Plant currently closed 	~80K MT per year	Solvent extraction	Bulawayo







Soyabean supply sources for cake, 2010, '000 MT



Source: Interviews



The demand for soy cake is driven by the poultry feed industry with nearly 50% of supply imported

Soy cake market,

2009/10, % 100% = 125 MT beans



Source: Interviews



The domestic market for soy oil is dominated by Surface, National Foods and Olivine; however, most oil is imported

Soya cooking oil market,

%, 2009/10 100% = 165 MT oil



Source: Interviews



Agricultural financing is at one-third of 2001 levels, constraining agricultural production

Decrease in local lending due to:

- Lack of deposits
- Country risk (lack of confidence in stability)
- Credit risk (lack of collateral)

"I can't lend to new farmers unless they have moveable or urban assets (a house in town)." -Zimbabwe agricultural lender

Decrease in international financing due to:

- Country risk (lack of confidence in stability)
- Credit risk (lack of collateral) •

Agricultural financing, \$ million



1/ Bank interviews

2/ Cotton and tobacco country interview; TNS analysis (only includes tobacco and cotton) 3/ Bank interviews; TNS analysis



The soy industry is unlikely to be able to address the main causes of the lack of liquidity on its own

	Description	Solution	Ability of industry to impact
Lack of deposits	Bank deposits only total \$2.3B	Zimbabweans deposit savings in local banks	Low
Country risk	Stability concerns limit international banks' willingness to extend lines of credit	Stable economic and political situation	Low
Credit risk	Lack of collateral due to absence of land titles constrains banks' willingness to lend	Assets (titles, moveable assets, urban property) available to utilize as collateral	Low



Key Policy	Description	Impact on Soy
Land	 Land reform process still controversial Internationally recognized process includes the following elements Land audit Compensation for old farmers Land tenure for new farmers Land tenure will act as collateral for new farmers, allowing them to more easily obtain financing 	 If liquidity was available, the lack of collateral (credit risk) would prevent lending to new farmers
GMO Ban	 Government policy bans imported GMO soybeans or cake 	 Limits availability of soybean and cake imports to support processing industry





Agenda

- Zimbabwe only produces ~30% of its demand for soy, but considerable scope exists for growth of production
- Despite strong market demand, sophisticated processing capabilities and capacity, and the ability for commercial farmers to grow soy competitively, the soy industry is held back by a lack of financing and land complexities
- Opportunities for near-term actions to improve production exist, but full production capacity will likely only be unleashed over a longer time horizon, as key macro issues such as liquidity and land ease or are resolved
- There is the potential to increase the incomes of 35k smallholders by \$138 p.a.



A severe lack of liquidity in the financial system is the most severe challenge to the soy industry



Severity Constraint





While certain actions can increase production in the short-term, the full potential will only be unleashed once macro problems resolve





Near-term actions should focus on promoting industry coordination and production

ltem	Constraint	Recommended Action(s)	Timing
A	Lack of coordination within national soy industry	Creation of national soy association	Near-term
В	Lack and cost of financing options for small farmers	 Develop contract farming schemes to provide smaller farmers with inputs provided on credit along with agricultural extension services and a guaranteed market Identify alternative financing mechanisms (e.g., Northern Farming model – see backup) 	Near-term
С	Poor agronomic practices of small farmers	 Provide capacity building assistance to Agritex (government extension service) Promote skill transfer through contract farming schemes Utilize former commercial farmers to provide extension/consulting services 	Near-term
D	Lack of production for processors and livestock industry	Engage industry to contribute toward revolving fund for contract farming scheme	Near-term
E	Lack of soil testing and lime use among smallholders	 Promote practices as part of contract farming scheme Educate Agritex (government extension) on soil testing/lime use 	Near-term



Medium-term actions should focus on improving agronomic practices and identifying appropriate financing mechanism

Item	Constraint	Recommended Action(s)	Time Undertaken
F	Land availability	 Engage medium-size farmers through contract schemes Explore option to utilize university and agricultural research land for soy production 	Near-term
G	Lack of usable farm equipment due to disrepair	 Identify potential financing options (e.g.,. Development banks) 	Near-term
Н	Insufficient irrigation	 Form farmer groups and core farms with outgrowers for small farmers with access to irrigation Obtain development bank funds for small and medium-large farmers to be invested in infrastructure 	Medium-term
I	Skill transfer needed for new farmers	 Provide capacity building assistance to Agritex (government extension service) Promote skill transfer through contract farming schemes Utilize former commercial farmers to provide extension/consulting services 	Medium-term
J	Land tenure	Complete internationally agreed to process	N/A



Near-term actions should be prioritized base on the impact and the ease of alleviating each constraint



ltem	Action
1	Creation of national soy association
2	Develop industry-led contract farming scheme
3	Provide capacity building assistance to Agritex
4	Utilize former commercial farmers to provide extension/consulting services
5	Educate Agritex on soil testing/lime use
6	Utilize university and agricultural research land for production
7	Create farmer groups/core farms for small farmers with access to irrigation
8	Engage new farmers in contract schemes

Note: * Relative ease of implementation takes into consideration the stakeholders involved, the level of political difficulty, the cost of fixing it, and the time it would take to fix the constraint



Various potential financing options exist in the short-term

	Description	Benefits	Challenges
Contract farming (industry & development bank)	 Industry and development bank or donors contribute jointly to a revolving fund 	 Firms can leverage contribution to fund through development bank matching funds; fund can utilize development bank's banking expertise 	Administrative difficulties of pooling and distributing fund; collecting repayments
Contract farming (firm level)	 Processor finances revolving fund through cash flow or through parent company 	Processor maintains direct control over financing	 Individual processor may lack cash flow to finance or may not have access to parent company financing
Private financing (e.g., Northern Farming)	Private investment fund offers farmers a combination of financing and agronomic support in exchange for interest and management fee	 Ability to buy inputs in bulk with a cost savings Ability to get better price for produce by selling in larger amounts 	Financing cost may be higher for farmer than in contracting model schemes



Agenda

- Zimbabwe only produces ~30% of its demand for soy, but considerable scope exists for growth of production
- Despite strong market demand, sophisticated processing capabilities and capacity, and the ability for commercial farmers to grow soy competitively, the soy industry is held back by a lack of financing and land complexities
- Opportunities for near-term actions to improve production exist, but full production capacity will likely only be unleashed over a longer time horizon, as key macro issues such as liquidity and land ease or are resolved
- There is the potential to increase the incomes of 35k smallholders by \$138 p.a.



Improving agronomics and inputs for the ~35K existing soy smallholders could increase their incomes by \$138 p.a. each

Assumptions

- Smallholders cultivate the same hectares of soy as at present (0.5 ha on average)
- Yield per ha rises from 0.5 to 1.5 from improved agronomics and inputs

