



**2019**  
Annual Impact  
and ESG Report  
The Silverlands  
Funds



## Our impact

We employ over **6,900** people,  
earning a total of **\$28m** per annum

Direct economic benefit for **340,000** people

Average incomes increased by **~\$330** per annum

Increased community income of **\$112m** per annum

Secondary positive impact for **2 million** people

### Silverlands I

- **280,000** people benefit economically
- Average incomes increased by **~\$330** p.a. on average
- Increased community income of **\$92m** p.a.
- Silverlands I portfolio companies employ over **6,100** people, earning a total of **\$25m** p.a.
- Secondary positive impact for **1.6m** people

### Silverlands II

- **63,000** people benefit economically
- Average incomes increased by **~\$310** p.a. on average
- Increased community income of **\$20m** p.a.
- Silverlands II portfolio companies employ **830** people, earning a total of **\$3m** p.a.
- Secondary positive impact for **380,000** people

## Welcome

Welcome to our seventh Annual Impact and ESG Report.

We aim to achieve attractive returns for our investors as well as a substantial positive social impact through our investments.

We invest into the agricultural sector and our experience has shown that the most impactful investments aim to fix a problem in a value chain thereby enabling the entire chain. By investing to complete the value chain one creates the opportunity for smallholder farmers to ramp up production. They might, for example, have a new market for a higher value crop or access to improved seed. The business benefits from the increased scale by incorporating smallholder farmer production into its operations. The smallholder farmer benefits from greater crop diversity and higher incomes going forward.

Investment opportunities in the agricultural sector that meet an impact objective are therefore typically developmental. One is investing to build an operation that does not yet exist or is in a fledgling state. Creating the missing piece of the value chain jigsaw usually needs patient capital, a high level of technical ability and deep operational experience in the Sub-Saharan agricultural sector.

This report details many such examples. Our impact continues to grow as the businesses grow: we estimate that 340,000 people have benefited directly from our investments up from 200,000 last year. By 'benefit' we mean that 'their incomes have risen since we invested, as a direct result of our investments': increased incomes being our key impact metric. This increased income is estimated at \$112 million per annum this year, an extraordinary figure.

We have continued to learn how best to maximise both return and impact. New initiatives show exciting investment and impact potential, such as creating a whole new industry in Zambia - the pecan nut value chain. Similarly, creating a date palm value chain in Namibia and a macadamia nut industry in Northern Mozambique. All three of these tree crops are high value for farmers and the strategy is climate-friendly.

This report also summarises our survey of academic literature to help us quantify the impact of two initiatives: i) converting farmers from farm saved seed to hybrid seed, plus ii) training farmers to adopt conservation farming techniques. Doing both doubles a farmer's yields per hectare and therefore their revenues. This underlines the exciting potential of Zamseed, as we continue to build it into a regional seed platform - we expect it to impact hundreds of thousands of farmers.

Thank-you again for your support. Please feel free to contact us if you have any questions or comments.

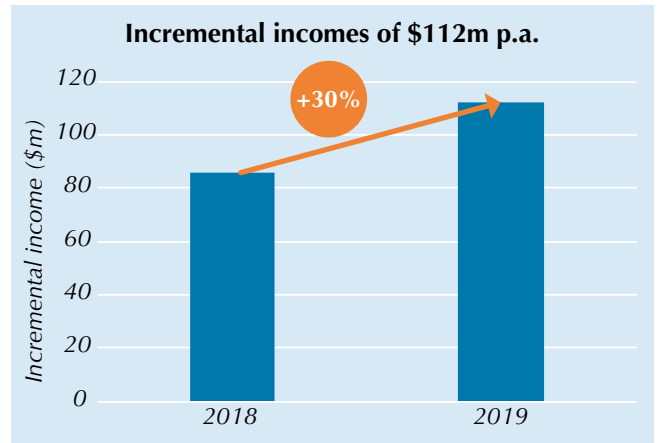
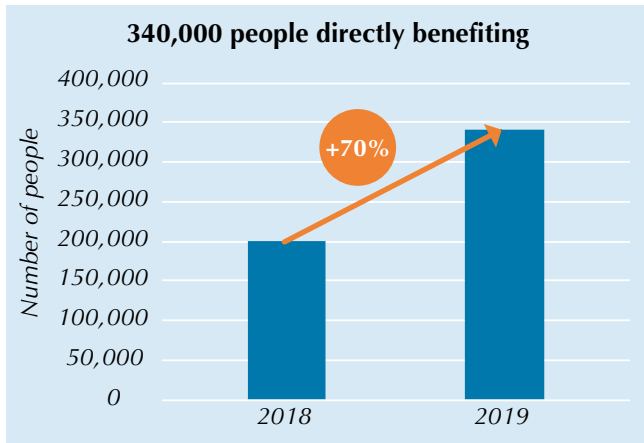


**Gary Vaughan-Smith**  
Chief Investment Officer

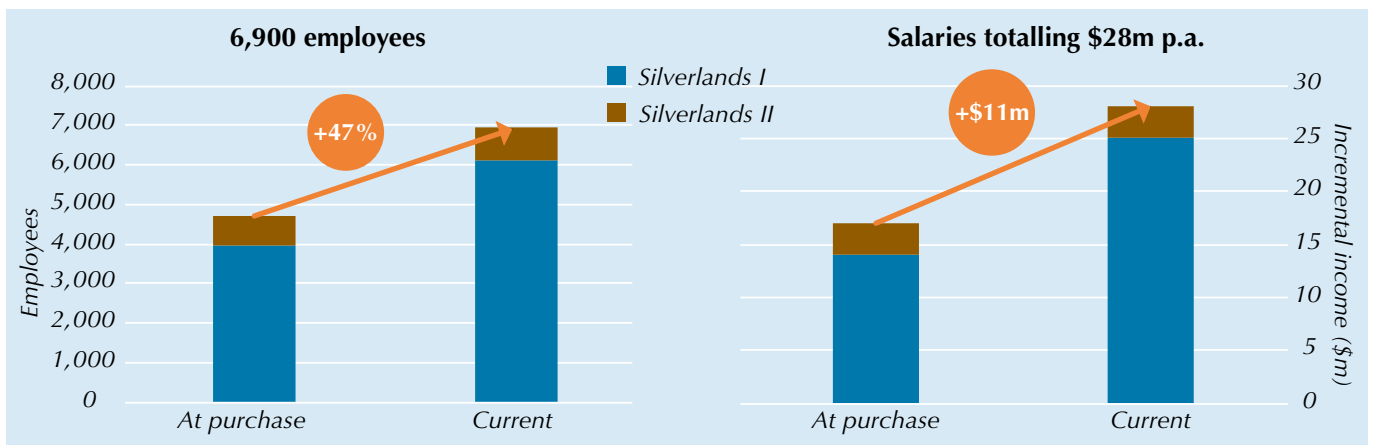
## Executive Summary

### Key results

The number of people economically benefiting from our operations has increased 70% from 200,000 in 2018 to 340,000 this year. We estimate their annual incomes have increased by ~\$330 per person, an increase of 68% when compared to salaries of ~\$500 before our investment. In total, communities now earn \$112 million more per annum because of our investments, this figure is up from \$86 million per annum in 2018.



We employ over 6,900 people (6,100 in Silverlands I and 830 in Silverlands II), together a 47% increase since investing and 11% up from 2018. 40% of employees are women, a relatively high figure in the agricultural sector. Annual salary spend has increased 1.6-fold since purchase (and 3-fold when Crookes Brothers is excluded) – currently at \$28 million per annum and up from \$26 million in 2018.



We create a secondary positive impact for 2 million people, 1.7 million by Silverlands I and 380,000 people by Silverlands II.

Our assessment of impact continues to improve because we have increased and improved on-the-ground surveying. We have additionally reviewed some 22 academic papers covering the impact of implementing conservation farming techniques or changing to hybrid seed.

## Impact summary

Portfolio company	Community participants impacted (#)	Increase in household income (\$ p.a.)	Value added to community (\$m p.a.)	Secondary impact (#)
<b>Silverlands I</b>				
Silverlands Tanzania	141,759	334	47.3	850,574
Silverlands Ndolela	99,470	293	29.2	596,415
Silverlands Ranching	8,016	258	2.1	48,468
Zambia Grains	14,016	228	3.2	84,434
Silverlands Vineyards	1,442	1,744	2.5	6,850
Crookes Brothers*	12,499	620	7.9	59,345
<b>Total Silverlands I</b>	<b>277,202</b>	<b>332</b>	<b>92.2</b>	<b>1,646,087</b>
<b>Silverlands II</b>				
Zamseed	62,909	299	18.8	377,969
Achill	518	1,660	0.9	2,435
<b>Total Silverlands II</b>	<b>63,427</b>	<b>310</b>	<b>19.7</b>	<b>380,404</b>
<b>Overall total</b>	<b>340,629</b>	<b>328</b>	<b>111.9</b>	<b>2,026,491</b>

\*Crookes Brothers figures include Quinta da Bella Vista

## Our philosophy

Some 60-70% of the Sub-Saharan African population live on small-scale farms, typically 1-2 ha in size. Africa's smallholder agricultural sector has particular challenges that are creating a poverty trap across much of rural Africa. We provide solutions to these challenges by improving access to inputs and technical support, and by creating markets for higher value products.

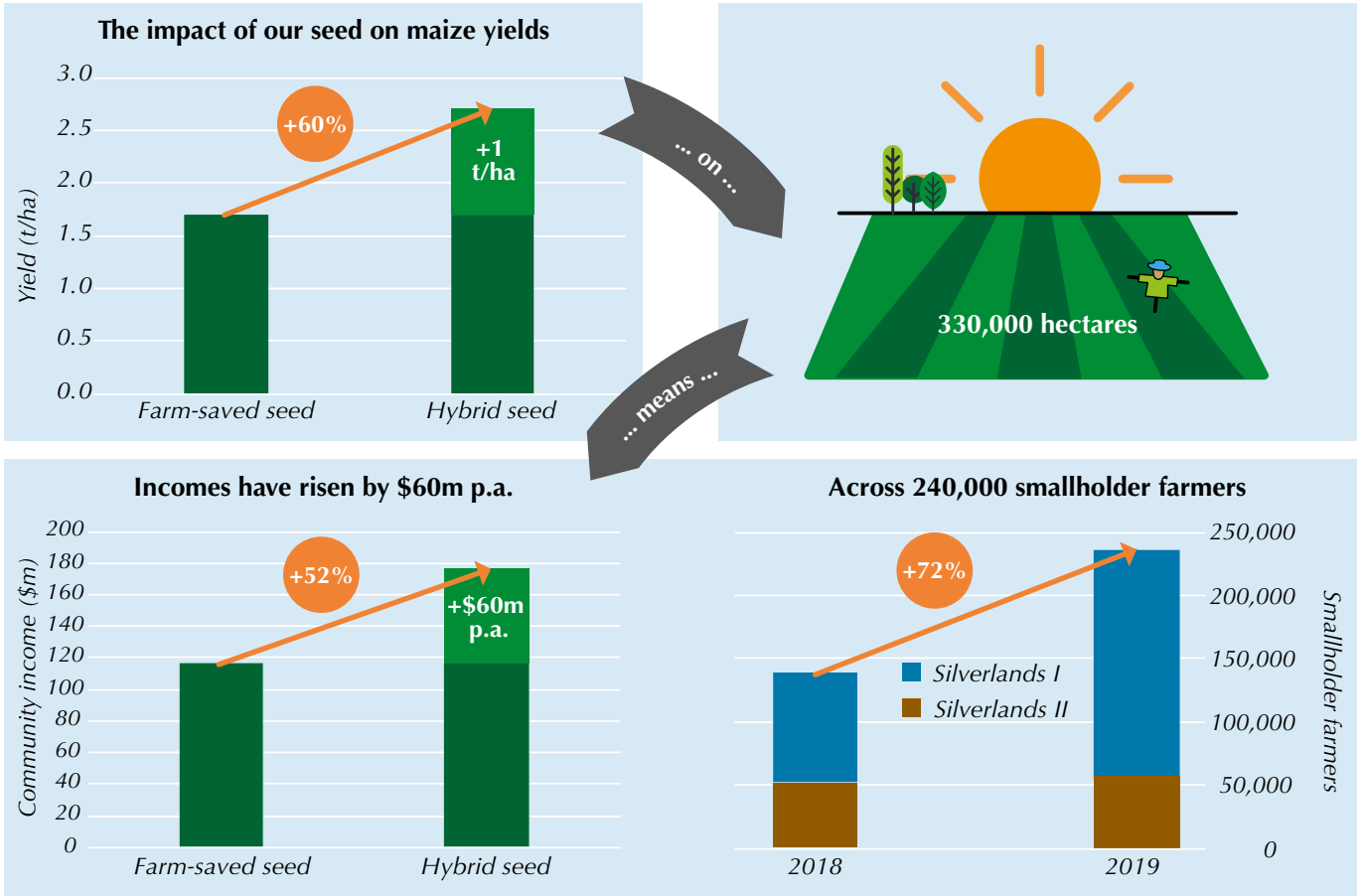
Smallholder agriculture			
	Challenges	Causes	Solutions
<b>Inputs</b>	Crop yields are well below global averages	Farmers using low yielding seed	Facilitate access to high yielding seed
<b>On-farm practices</b>	Ecologically damaging and inefficient methods	Farmer uses sub-optimal farming techniques	Provide training in conservation farming techniques
<b>Markets</b>	Poor access to markets for higher value crops	Lack of a market for higher value crops/ livestock products	Develop processing, farming and storage hubs

The impact part of this report is organised into these three main categories.

## Inputs

This year we expanded our development and production of high-quality hybrid seed, which can increase yields and incomes, improve drought tolerance and counter some diseases and pests.

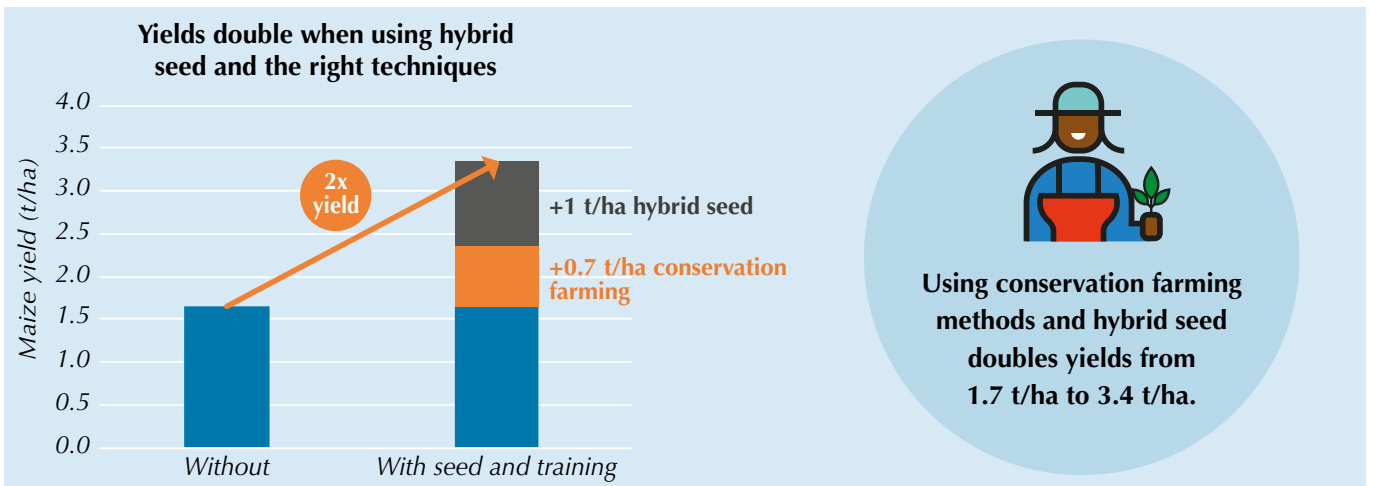
We estimate the 8,700 tonnes of (mostly maize) seed produced and sold this year may be used to plant 330,000 hectares by almost 240,000 smallholder farmers, a 63% increase from 2018. Academic research from across Sub-Saharan Africa, summarised in this report, has shown that by adopting hybrid seed, farmers can expect maize yields to increase from typically 1.6 t/ha by 1 t/ha or ~60%. With this, and accounting for the cost of the hybrid seed, we estimate each farmer's profits to increase by \$255 per annum. This implies a huge increase in incomes of some \$60 million per annum, this year.



**On-farm support**

Our aim is to improve smallholder yields and incomes through providing training in improved agricultural methods. Conservation farming techniques can increase yields, reverse soil erosion, and mitigate the effects of climate change. Its principles can be implemented using the limited resources available to smallholder farmers: minimum tillage, mulching and crop rotation.

We estimate that 1,900 farmers have benefited from training during field days this year. Research has shown that by implementing conservation agriculture methods alone, smallholder farmers can increase their maize yields by 0.7 t/ha from 1.7 to 2.4 t/ha. If this is achieved, individual incomes may increase by \$212 annually. This is a conservative evaluation as we have observed maize yields of up to 9 t/ha achieved on demonstration plots in Zambia. The combination of conservation farming techniques plus a switch to hybrid seed approximately doubles yields from ~1.7 t/ha to 3.4 t/ha.



**Joint ventures**

Three communities in South Africa benefit from our farming joint ventures (JVs). Together the JVs earn \$2.7 million annually (2017 to 2019 average), or an average of \$1,500 per annum for each of the 2,500 families (~11,000 people).

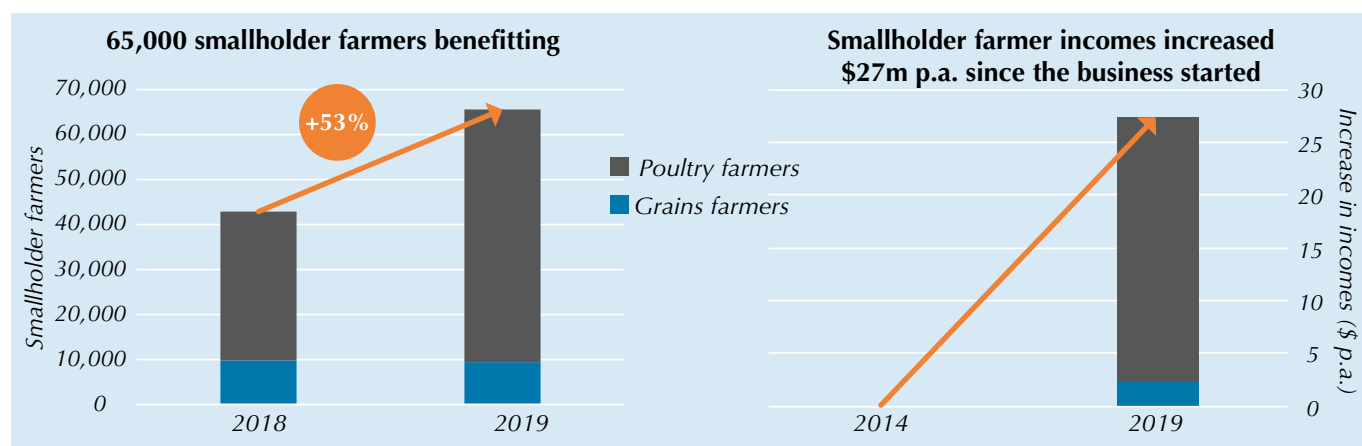
**Markets**

**Silverlands Poultry**

Silverlands Tanzania’s poultry business, an example of our hub out-grower model, produces day-old chicks and poultry feed primarily for sale to smallholder farmers. As inputs into the poultry feed, the business purchases grains (maize and soya) from smallholder farmers. From a standing start in 2014, the business now benefits more than 65,000 people, including:

- 9,000 grain farmers (similar to last year) - around two-thirds of whom are women
- 56,000 poultry farmers (up 70% from 33,000 in 2018) - over 80% of whom are women.

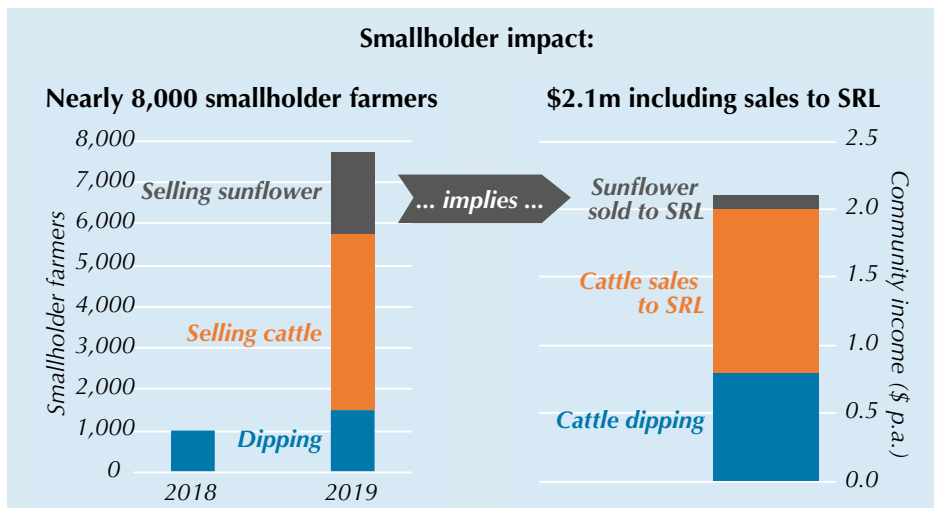
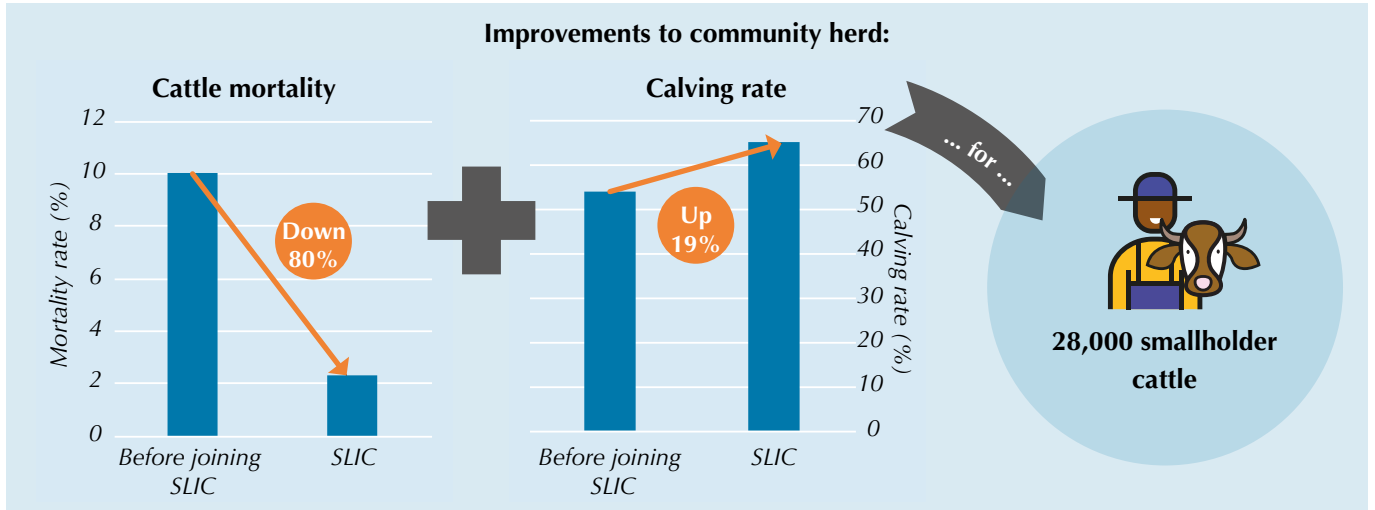
Incomes per farmer have increased by ~\$417 per annum, implying an increase in smallholder net incomes of \$27 million per annum (up from \$23 million per annum in 2018), a significant multiplier effect.



**Silverlands Ranching**

Silverlands Ranching began in 2014 with providing technical assistance and cattle dipping in the communities surrounding the ranch, to reduce tick-borne diseases in cattle. In 2017 this expanded into purchasing cattle and sunflower from community members.

Last year we only reported on the ~1,000 farmers bringing their cattle to be dipped. This year, our reporting is more inclusive and the business has expanded. Over 28,000 cattle (a ~55% increase from 2018) owned by nearly 1,600 farmers are being dipped at the 28 SLIC dipping stations. Overall, nearly 8,000 smallholder farmers now benefit, whose annual incomes have increased by \$267 per person since before the project. This year’s annual value-add to communities is nearly \$2.1 million per annum.



### Other Impacts

By creating employment for 6,900 people, a further 38,000 people benefit via indirect job creation and as household members of the employee (34,000 in Silverlands I and 4,000 in Silverlands II).

Our operations rely on the support of over 630 small and medium-sized enterprises (SMEs) who earned over \$18m this year from our businesses by supplying various services such as logistics and construction. This year, \$185,000 of CSI donations benefited an estimated 36,000 people, a slight reduction from the \$200,000 spend from 2018.

### Our environmental strategies and efficiencies

Agriculture is under pressure to produce more, on the same area of land, and with less resources. We continue to implement a wide variety of technology and management improvements to achieve this.

### ESG Annual Review

We are proud of the significant positive trend in ESG compliance by each portfolio company since purchase. Compliance against our Responsible Investment Code is scored by external consultants. This year, Silverlands I retained an impressive score of 94% and the Silverlands II score increased by 15% to 82%.

### Responsible Investment Code (RIC) compliance

	Silverlands I		Silverlands II	
	2018 %	2019 %	2018 %	2019 %
Environment	89	92	51	64
Social	97	98	86	90
Health & safety	87	88	57	72
Other social matters	91	94	63	88
Governance	99	99	82	94
ESG management systems	91	93	66	88
Animal Welfare	100	98		
<b>Overall</b>	<b>94</b>	<b>94</b>	<b>67</b>	<b>82</b>



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### Glossary of terms and abbreviations

CBL	Crookes Brothers Limited
CSI	Corporate Social Investment
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ESG	Environmental, Social, Governance
ESIA	Environmental and Social Impact Assessment
ESAP	Environmental & Social Action Plan
IFC	International Finance Corporation
IPM	Integrated Pest Management
JV	joint venture
LT	Livestock Technician
NGO	Non-Governmental Organisation
PPE	Personal Protective Equipment
PS	Performance Standard (i.e. IFC Performance Standard)
QBV	Quinta da Bella Vista Limitada
RIC	Responsible Investment Code
SA	South Africa
SASL	Silverlands Agriculture Services Limited
SEMS	Social and Environmental Management System
Silverlands I	SilverStreet Private Equity Strategies SICAR
Silverlands II	Silverlands II SCSp
SLIC	Silverlands Livestock Improvement Community
SNL	Silverlands Ndolela Limited (previously NAPL)
SRL	Silverlands Ranching Limited
STL	Silverlands Tanzania Limited
SVL	Silverlands Vineyards Limited
SZL	Silverlands Zambia Limited

## 1 Introduction

### 1.1 About this Report

This is our seventh *Annual Impact and Environmental, Social and Governance (ESG) Report*, and covers the period 1 July 2018 to 30 June 2019. The report includes investments in both Silverlands Funds (Silverlands I and II).

The aim of the report is to provide investors with an update on the Funds' environmental and social impact and a review of ESG compliance within the investment portfolios. Detailed ESG reports on each Portfolio Company are available on request. For more information, contact [jwakeling@silverstreetcapital.com](mailto:jwakeling@silverstreetcapital.com) or visit [www.silverstreetcapital.com](http://www.silverstreetcapital.com).

### 1.2 ESG and Impact Measurement Standards

In compiling this report, we have considered the UN Sustainable Development Goals (SDGs), relevant IRIS metrics, the International Finance Corporation (IFC) Performance Standards, our own Responsible Investment Code (RIC), the UN Global Compact and the UN Principles of Responsible Investment (UNPRI). SilverStreet is a signatory of the UNPRI.

Reporting obligations of the Silverlands Funds are in the Appendix.



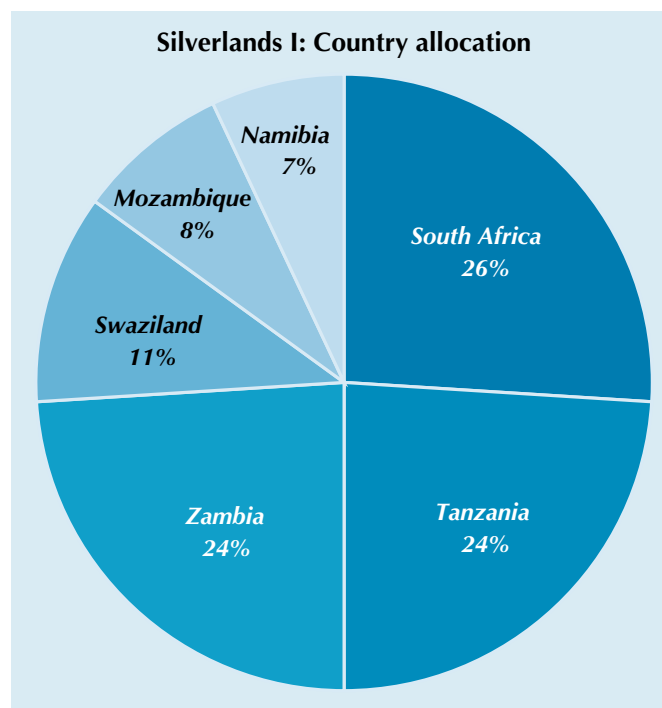
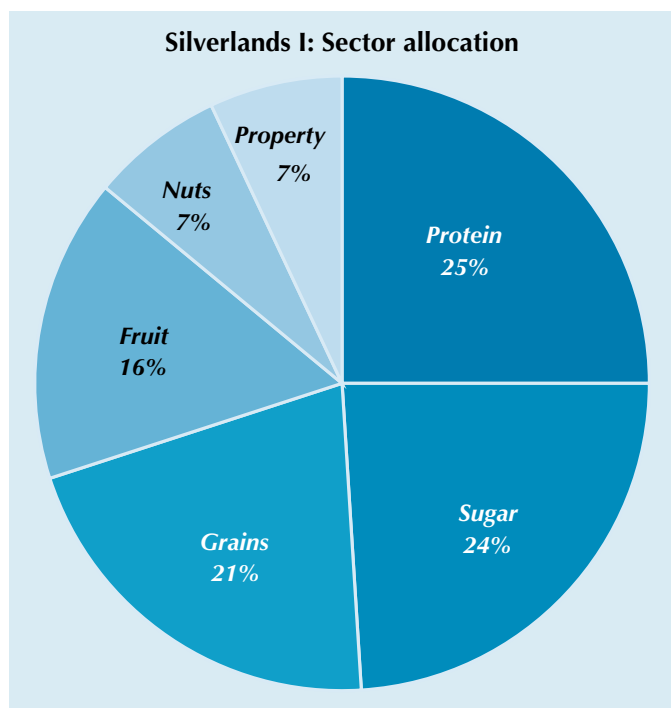
*Silverlands Agriculture Services has ~1,400 ha of cropping in Central Zambia. It is located in a climate that is perfect for wheat and soya, and with water security provided by the Kakushi Dam (constructed in 2016).*

### 1.3 Silverlands Fund Portfolio Companies

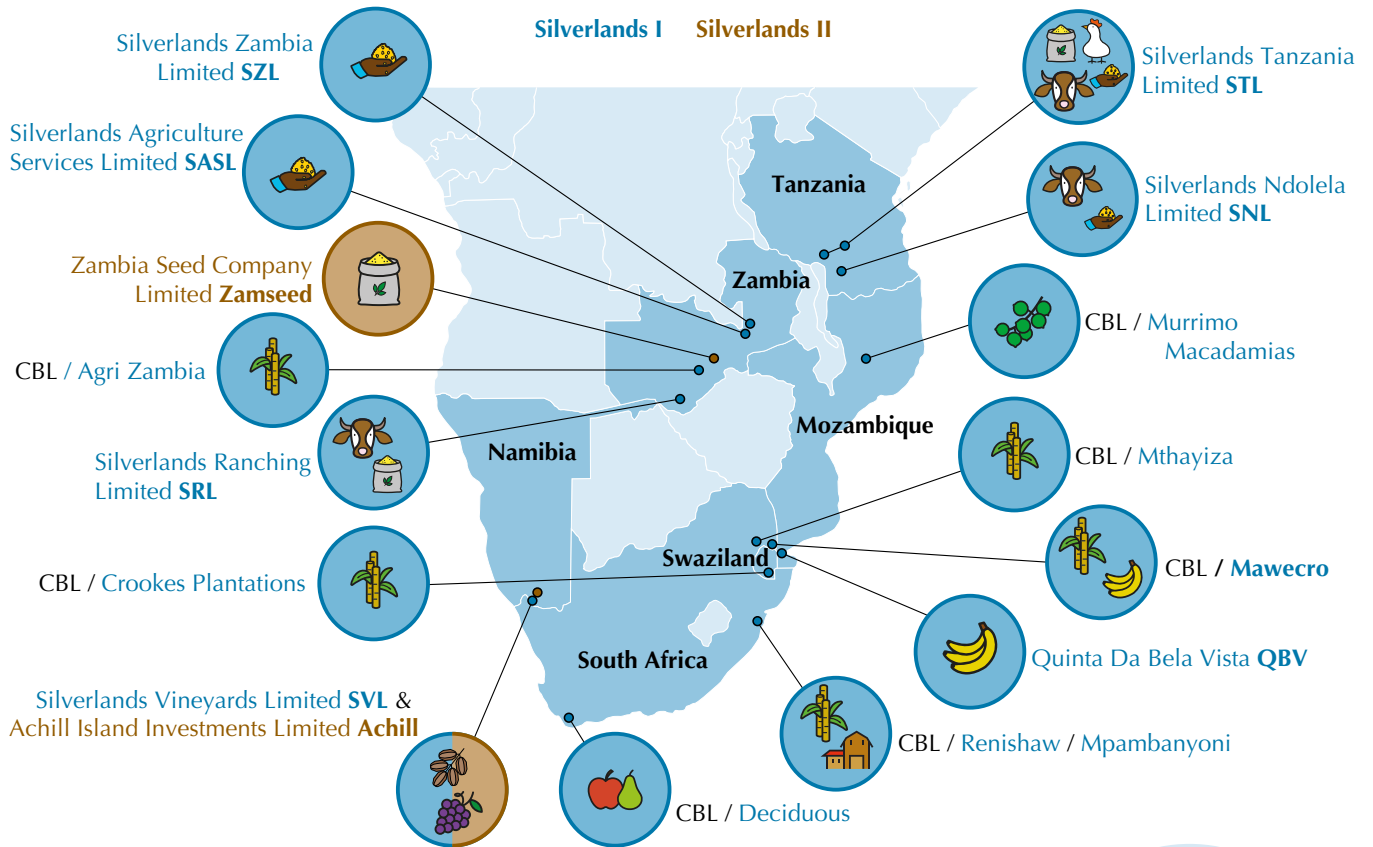
The Silverlands Funds are invested in ten portfolio companies across six countries in Southern and East Africa:

Portfolio company	Abbreviation	Country	Business/product
<b>Silverlands I</b>			
Silverlands Tanzania Limited	STL	Tanzania	Poultry, feed, grains
Silverlands Ndolela Limited	SNL	Tanzania	Grains and avocados
Silverlands Zambia Limited	SZL	Zambia	Grains
Silverlands Agriculture Services Limited	SASL	Zambia	Grains
Silverlands Ranching Limited	SRL	Zambia	Cattle, cropping
Quinta da Bela Vista Limitada	QBV	Mozambique	Bananas
Silverlands Vineyards (Proprietary) Limited	SVL	Namibia	Table grapes
Crookes Brothers Limited	CBL	South Africa*	Sugar cane, fruit, nuts
<b>Silverlands II</b>			
Achill Island Investments (Proprietary) Limited	Achill	Namibia	Table grapes
Zambia Seed Company Limited	Zamseed	Zambia	Seed sector

\*Crookes Brothers’ head office in South Africa with operations in South Africa, Mozambique, Swaziland and Zambia.



### Location of the Silverlands Funds' portfolio companies across Southern and East Africa



*The Zambia Seed Company Limited (Zamseed) farm on the outskirts of Lusaka is where research and breeding has taken place to develop Zamseed's excellent seed varieties.*



## 2 Silverlands' Investment and Impact Strategy

### 2.1 Our Vision and Mission

**Our Vision:**  
 “To provide the seed capital for a new era in African agriculture.”

**Our Mission:**  
 “To build profitable and sustainable businesses that permanently strengthen local economies, raise living standards and meet the needs of a rapidly growing population.”

Investment and Impact Strategy

We aim to:

Achieve <b>attractive returns</b> for investors	<b>Strengthen the agricultural sector</b> through investment in infrastructure, systems and people	<b>Benefit smallholder farmers</b> by providing technical assistance, creating markets and encouraging entrepreneurial activity
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Sub-Saharan Africa continues to face some significant developmental challenges, including:

- High levels of poverty, persistent underemployment and poor nutrition;
- Some of the highest levels of population growth globally, with Central African countries growing at 2.5-3% per annum; and
- Increasing ecological damage.

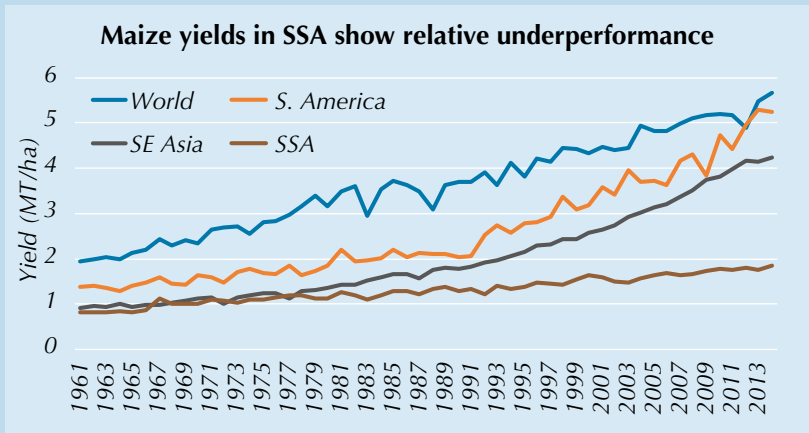
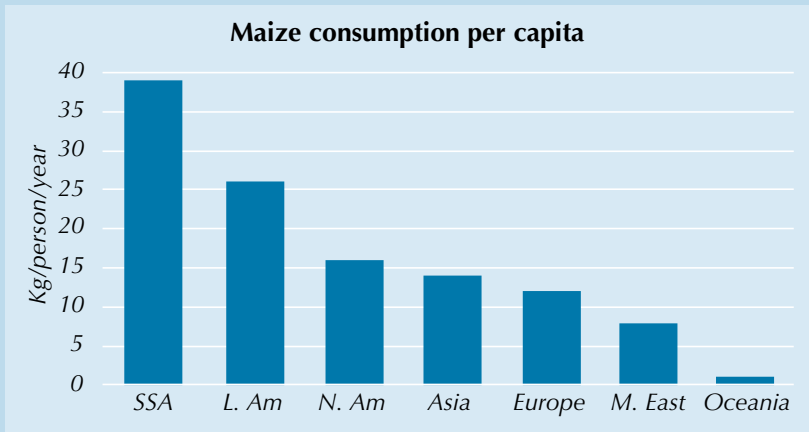
Some 60-70% of the Sub-Saharan African population live on small-scale farms, typically 1-2 ha in size. Africa's small-scale agricultural sector has particular challenges that are creating a poverty trap across much of rural Africa.

Challenges in small-scale agriculture	Contributory causes	Opportunities
<ul style="list-style-type: none"> <li>• Smallholder farmers typically grow <b>low value crops</b>, such as maize and cassava, for subsistence and local consumption.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Lack of a market</b> for higher value crops/livestock products.</li> </ul>	<ul style="list-style-type: none"> <li>• Create a <b>market for a high value crop</b>.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Crop yields</b> are <b>well below global averages</b>, typically at 1.5-2 t/ha for maize for example, whereas 8-10 t/ha is achievable by commercial farmers in the region.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Shortage of inputs:</b> hybrid seed, lime and fertiliser, delivered and applied on time.</li> <li>• Smallholder farmers utilise sub-optimal farming techniques.</li> </ul>	<ul style="list-style-type: none"> <li>• Facilitate access to <b>high yielding seed</b></li> <li>• Provide <b>training</b> in conservation farming.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>A lack of access to basic infrastructure</b> such as storage facilities, transportation and processing facilities. Around 37% of the smallholder crop spoils due to a lack of storage facilities.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Poorly resourced commercial sector</b> and consequent under-investment in basic infrastructure, extension support and processing.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop <b>processing, farming and storage hubs</b>.</li> </ul>

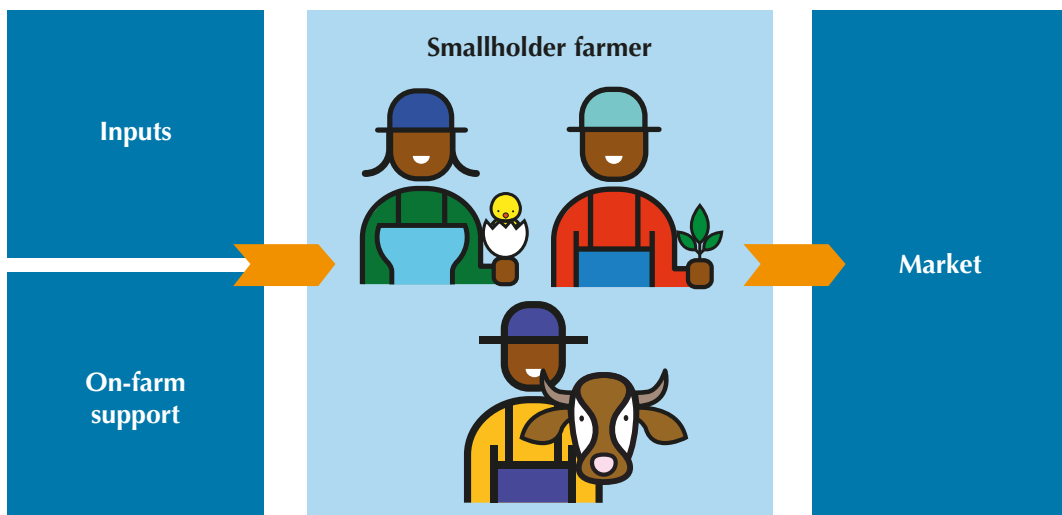
**Maize as a key crop**

Maize is a staple crop for 900 million people accounting for ~45% of total calories and protein. It's grown on ~40 million hectares in Sub-Saharan Africa, occupying over 50% of the land devoted to cereal crops and, is a key aspect of livelihoods for 60% of the population.

Yet in Sub-Saharan Africa (SSA) yields continue to underperform relative to those achieved globally and by commercial farmers in Africa. This chart compares maize yields by region since 1961.



**Three areas to boost crop yields and incomes for smallholder farmers**



This report is structured under these three main headings in Sections 3 to 5 to report our impact: Inputs, On-farm Support, and Market.

## 2.2 Smallholder Farmers as a Developmental Target



Smallholder farmers are a particularly attractive target group for development opportunities:

- **A large and broad-based group:** An estimated 60-70% of Sub-Saharan Africa's growing population live on small-scale farms. This group is amongst the lowest income part of the population and is caught in a **poverty trap**.
- **High potential for a productivity step-change:** Productivity on these farms is typically very low, offering the potential to double yields per hectare, significantly boost rural incomes and improve food security. This can be done through relatively low-cost and low-tech solutions, such as providing better inputs and improved farming techniques. An increase in maize yields from 1.5 t/ha to 4 t/ha results in almost a fivefold increase in net profits to the farmer.
- **Entrepreneurship and empowering women:** Targeted interventions in the sector offer a significant opportunity to stimulate entrepreneurial activity, empower women, and drive broader development in the rest of the economy. Women benefit to a greater extent through interventions in the sector because a high proportion of smallholder farmers are women.
- **Promoting food security and social stability:** Boosting agricultural productivity contributes to the alleviation of nutritional challenges and improves social stability. This is particularly important in Africa where malnutrition is so common. Between 2000 and 2018, the number of children under five years who are stunted in Southern and Eastern Africa rose by 1.4 million, despite this figure declining by a quarter globally ([UNICEF, 2019](#)).

## 2.3 Responding to these Challenges: Our Investment Approach

We believe that if value is created across Africa's agricultural chain, then a sustainable infrastructure can be built, permanently raising living standards for farmers, mitigating negative environmental impacts, and creating a multiplier effect across local economies to increase overall prosperity. Our end goal is to help build a sustainable business environment that will survive the Silverlands Funds and strengthen economies in Sub-Saharan Africa.

SilverStreet's work seeks to address the root causes of these development challenges by realising some of the associated investment opportunities, informed by the following underlying objectives:



### 1 Building profitable businesses

Our approach to building profitable businesses is guided by the following premises:

- **Profits are essential:** Building successful commercial operations is at the core of our social impact strategy, informed by the belief that business success underwrites the sustainability of the human development we seek. We bring infrastructure, high-quality inputs, and world-class expertise to pursue returns.

- **Long-term risk mitigation and diversification:** Silverlands sees its ultimate impact in terms of decades rather than years. In delivering on our long-term approach, we strive to mitigate risk through meticulous site and business selection. Our metrics include: climate and geography; access to water, transport, and labour; community willingness; and political risk management. Our portfolio is diversified across the value chain in six nations and various climatic regions.
- **Long-term investment partners:** We are backed by patient investors, managing institutional, family office or government funds, who share our objectives and do not compel us to pursue short-term profits at the expense of long-term benefit.



## 2 Operating responsibly

We are committed to operating responsibly by pursuing ethical business practices, ensuring responsible environmental management, and maintaining a corporate social investment programme.

- **Ethical business practices**
  - Our investments are governed by a Responsible Investment Code. In addition, we adhere to the IFC Performance Standards and the UN Principles for Responsible Investment (UNPRI). We are looking into certification as a B-Corporation and signing up to the UN Global Compact. We adhere to international accounting standards and have strong anti-bribery and corruption policies and training. We support honest and transparent governance and reporting standards.
  - In adopting the IFC Performance Standards, we monitor: environmental and social risk management activities; fair labour practices; conservation of resources, preservation of biodiversity and reduction of pollution; community health and safety; and the safeguarding of cultural heritage. We also conduct annual external reviews and publish reports of ESG compliance.
- **Environmental responsibility**
  - **Efficient water use:** Using the most efficient irrigation methods and automated systems, we minimise water use while increasing yields. Practicing minimum tillage on our farms, and teaching this to smallholder farmers, leads to increased moisture retention in the soil, reducing irrigation needs and enhancing drought tolerance in lower rainfall years. Drought-tolerant seed also has water-use benefits.
  - **Reducing energy use:** We continue to implement clean energy solutions, and solar and hydroelectric power developments to help reduce reliance on fossil fuels and unreliable grids.
  - **Improving soils:** This reduces erosion and agrochemical use and has a carbon benefit. We practice and teach smallholder farmers conservation farming methods, including minimum tillage, composting, mulching and crop rotation. These increase soil organic matter which has a carbon benefit and reduces erosion and the need for fertiliser.
  - **Biodiversity benefits:** Raising the productivity of smallholder farmland reduces deforestation of woodlands and helps to preserve biodiversity. Extraordinary yield improvements, from 1-2 t/ha to 4-5 t/ha, are possible in a short space of time, raising food production without the need for farmers to increase the area farmed.
- **Corporate social investment**
  - Each portfolio company has a corporate social investment programme, donating toward community projects such as schools, bursaries, clinics and agricultural education centres.





### 3 Creating a significant positive social impact within communities

We integrate work with communities into our business models. Our aim is to raise incomes for both the business and the community. We have four modes of driving positive social impact:

#### a) On-farm support

A community joint venture structure allows the Silverlands team to help communities manage their own large-scale community farms. In this model, skills transfers to the community can allow the community to ultimately run their own farm. Additionally, we provide training to smallholder farmers in conservation farming and animal husbandry, as well as access to infrastructural improvements and business advice. Employee training and management programmes improve local expertise.

We did a literature review of research including ~900 smallholder farmers and found that by implementing conservation agriculture methods alone, smallholder farmers can potentially increase their maize yields by 0.7 t/ha from 1.7 to 2.4 t/ha. We estimate that this would increase individual incomes by \$212 annually.

#### b) Improved inputs

Silverlands Funds also provides access to higher quality inputs for farmers, from seed and fertiliser, to more productive animals and poultry. Providing hybrid seed that is adapted to local conditions has an enormous multiplier effect. We reviewed 13 recent academic papers analysing yields of over 10,000 smallholder farmers. These studies found that those planting hybrid seed produced ~60% greater yields than those using farm saved seed, an average yield increase of 1 t/ha, to reach an overall yield of 2.6 t/ha. Seed produced by Silverlands is deployed on over 330,000 hectares of farmland, almost all belonging to smallholder farmers.

#### c) Providing a market

A 'market' for most farm production is normally a processing plant: a wheat mill, soya processor, or fruit packing and juicing plant. In our hub out-grower model, surrounding farmers are producers for a central processing facility, developed by the portfolio company. Silverlands benefits by having access to greater volume of product, while growers benefit by producing higher value crops that Silverlands processes and markets. Current outgrowing projects include soya, cattle, sunflower and poultry.

It is estimated that as much as 37% of grains grown by smallholder farmers is lost through a lack of reliable storage compared to 6% in the USA (World Resources Institute, 2013). Businesses that improve crop storage, cold storage and the logistical aspects of transporting crops can have huge impacts on entire value chains.

#### d) Other direct impact

- **Employment:** Large commercial enterprises bring direct benefits to an area, such as jobs on site and within surrounding services. Silverlands directly employs over 6,900 people who earn salaries totalling more than \$28 million per annum. The impact goes beyond our boundaries, with 7,500 indirect jobs created and 31,000 household persons impacted.
- **Food production:** Most of our produce is for consumption within country or region, strengthening local economies and increasing food security.



**SilverStreet Capital was awarded 'Ethical Investor of the Year', for the second consecutive year.**

Corporate LiveWire's Global Awards honour outstanding performance and continued excellence within the global financial services industry. SilverStreet Capital was recognised for its continued efforts in creating sustainable, ethical and positively impactful businesses.

Judge, Andrew Walsh commented on the achievement;

***"It is rare we select businesses as winners in the Global Awards for successive years however in this case we do feel it is well deserved. SilverStreet Capital have shown a consistent commitment to an ethical investment philosophy built on a comprehensive understanding of the agricultural sector across Sub-Saharan Africa.***

***"The team at SilverStreet have consistently supported sustainability in all of their practices and have proven to have made significant social and economic improvements to the communities where they are active. We are thrilled to provide them with recognition for this."***

Founding partner, and chief investment officer, Gary Vaughan-Smith is quoted in the Corporate LiveWire magazine: *"SilverStreet has proven that it is sustainable and profitable to integrate a positive social impact into business models.*

*We have implemented this strategy using our innovative 'hub out-grower model'. This has been a proven success in the African markets where we operate. The hub may include processing facilities for high value crops, and technical assistance to help smallholder farmers improve crop yields. This gives farmers the ability to grow and sell crops that can command a higher income.*

*Providing markets for higher value crops for smallholder farmers ensures that as the business grows, so does their positive impact in local communities. Raising incomes for smallholder farmers, and fostering markets, gives Silverlands a stake in the future of a rapidly expanding market."*

### 3 On-farm Support and Impact

#### 3.1 The Community Joint Venture Model

##### Community joint venture impact summary

Three communities in South Africa benefit from joint ventures with Crookes Brothers, in Silverlands I. Together the JVs earn \$2.7m annually (2017 to 2019 average), or an average of \$1,500 per annum for each of the 2,500 families (likely about 11,000 people). This passive income is likely added to incomes from jobs and elsewhere.

Community participants impacted (# families)	Income per family (\$ p.a. 3-year average)	Value added to community annually (\$ p.a. 3-year average)
2,532	(Avg) 1,579	2.7m



*Mthayiza Farming, a 1,200 ha irrigated sugar cane in South Africa, is a joint venture with the Libuyile community.*

##### The joint venture model

The joint venture (JV) model provides an excellent opportunity to empower communities sustainably for the long-term. Under this model, the portfolio company partners with a community for a long period, typically 15-20 years, and a joint venture company is formed. The JV leases the land from the community and pays a management fee to our portfolio company. Profits are split between the community and the portfolio company with the community typically owning 51-55%. The community earns their share of the profits as well as a land rent from leasing their property to the JV.

Communities appreciate this model as the farms are run professionally resulting in a reliable income. Community members have additional opportunities to receive valuable training and skills transfer, such as through bursaries and working for the JV. Over time, the relationship between the portfolio company and the community strengthens, and a positive sense of community ownership develops.

Portfolio companies also benefit from the model as they have reduced capital requirements: the company does not need to buy the farm, yet still benefits from the stream of profits from the JV.

The model works particularly well for crops that require scale and are too expensive per hectare to be an option for smallholder farmers. It has been deployed in South Africa where a land transformation process is in place and where there is a shortage of skills to manage the farms post-transfer. We believe this is a perfect model for ensuring community development. Our JVs are outstanding examples of increased food production and profitability as part of the land restitution drive in South Africa.

On-farm support and impact

“Support for the transformation of the agricultural sector, in terms of the transfer of ownership and skills and the upliftment of the communities in which we operate, is a key element of the group’s strategy.”

*Crookes Brothers Integrated Report 2019*

**Impact**

JVs with communities benefit large numbers of families as profits are shared between the community and the management company. The fund has three JVs in South Africa: two in sugar cane and one in deciduous fruit. The JVs provide incomes to over 2,500 families, approximately 11,000 people. The combined average profit earned by the three JVs over the last three years was almost \$3m per annum, or \$1,579 per family. This is a passive income for these families. In most cases, family members also have income from jobs elsewhere or from managing their own businesses/farms.

**Impact of joint venture projects: Average for 2017-2019**

Name of JV	Location in South Africa	Community	Number of families benefiting	Profit \$	% JV owned by community	Community profits + rental \$	Income per family \$
Mawecro Farming	Komatipoort	Mawewe	558	2.7m	51%	2.3m	4,152
Mthayiza Farming	Malelane	Libuyile	1,964	0.3m	55%	0.4m	203
Bellcro Farming	Villiersdorp	Ex-employees	10	0.007m	55%	0.004m*	381
<b>Total or Average</b>			<b>2,532</b>	<b>3.0m</b>		<b>2.7m</b>	<b>(Avg) 1,579</b>

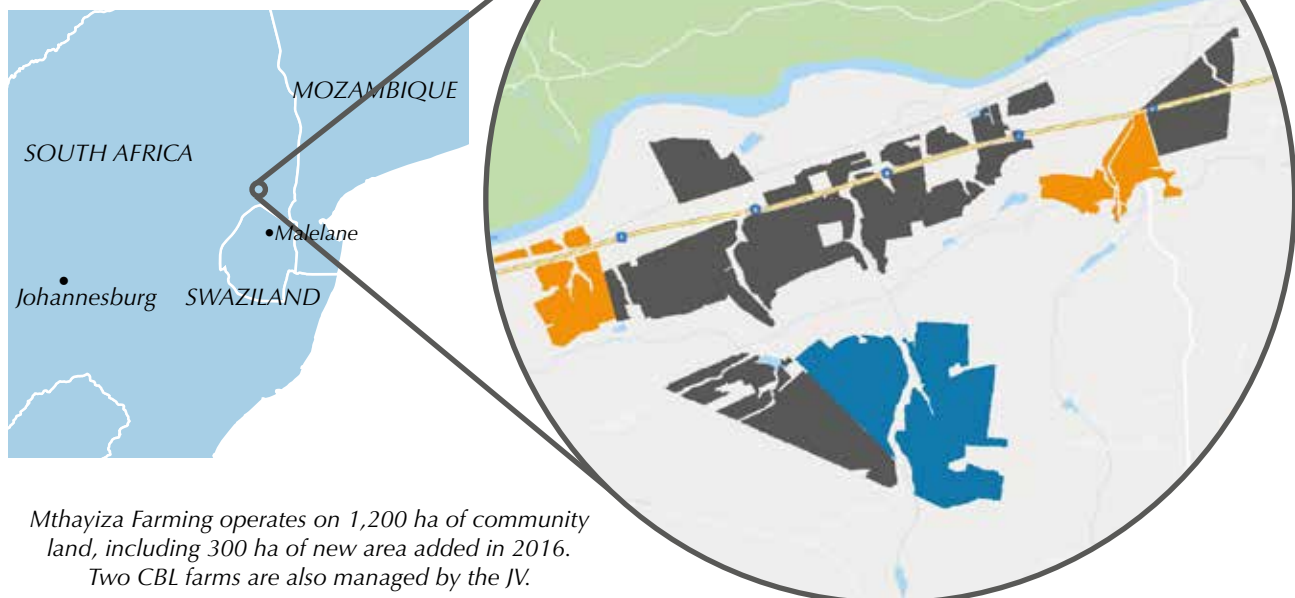
\*No rental to Bellcro as the government owns the farm.

“This is the only black farm in the region here which is operating very successfully, and everybody is yearning to be like us and they wanted to rub shoulders with us because we have got Crookes Brothers who have groomed us and showed us the way. This is a wonderful venture I think.”

*Gift Khumalo, Community & Board Member, Mthayiza Farming*

**a) Mthayiza Farming**

- Mthayiza
- Mthayiza new area
- Crookes Brothers Ltd - owned



Mthayiza Farming operates on 1,200 ha of community land, including 300 ha of new area added in 2016. Two CBL farms are also managed by the JV.

Mthayiza Farming, a joint venture between CBL and the Libuyile community, is a 1,200 ha irrigated sugar cane estate in South Africa that has been running for 11 years. Members of the Libuyile community were removed from the land in the 1970s to township areas, and the land was formally taken over by white farmers. After successfully lodging a land claim, the Libuyile community moved back onto the land in 2006. A lack of capital and experience constrained their ability to run the large commercial farm. The community advertised for investors, and in 2008 they chose to work with CBL.

When CBL was invited into the JV, the farm was run down and loss-making, with yields as low as ~60 t/ha. CBL injected capital and experience, and with continued re-investment of profits, yields have improved to an average of 100 t/ha and up to 110-120 t/ha where drip irrigation has been installed.

CBL has maintained a strong focus on education, providing bursaries and investing in the next generation. Tsepo Sangwane is a community member who started working on the farm as a trainee in 2010. He became a Farm Manager in 2017 and has since been promoted to Senior Farm Manager.

### **Tsepo Sangwane - Community Member, Senior Farm Manager**

*“Crookes Brothers teaches us how to farm, how to be good managers, how to interact with the labourers we are working with. It gives us bursaries to study further.*

*The Chief wanted Crookes to be in partnership with Mthayiza because they couldn't handle the farm. The irrigation was so bad that if we wanted to farm on our own then the farm could have collapsed. That's why we took Crookes into consideration... and came into partnership with them.*

*Thanks to Crookes to partner with Mthayiza Farming. It has really been a journey. It wasn't easy but starting in 2008 to now we have achieved a lot.*

*We are a developing farm, but already we have achieved a lot... in the coming years we are going to be the best farm around the Malelane area.”*



On-farm  
support and impact

Initially planned for 15 years, the success of the JV has led the community to extend the partnership for an additional 15 years. Another strong vote of confidence was the addition of 300 ha of land into the JV in 2016, taking the cropping area up to 1,100 ha. The community see the benefits of good yields and subsequent profits, and the ongoing nurturing of their younger generation.

The farm is a model JV. Its success suggests that this approach could make a valuable contribution to addressing South Africa's land restitution challenge.



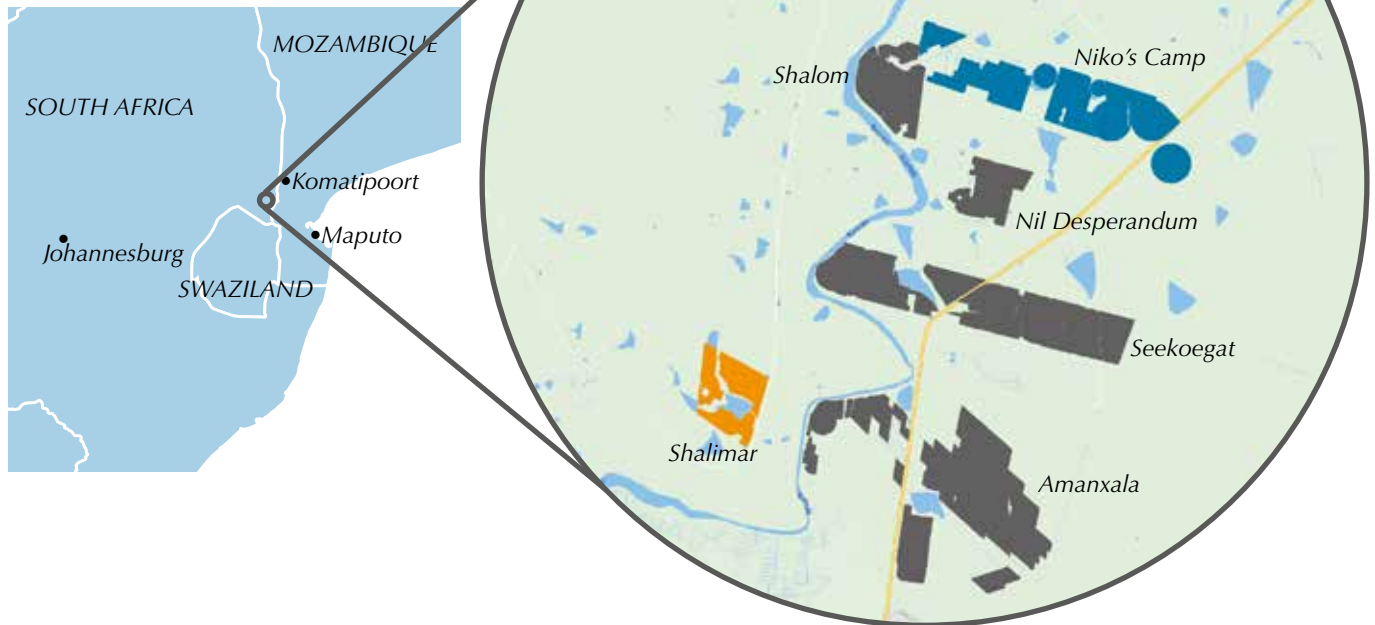
### **Solomon Samba - Community and Board Member**

*“There are quite a number of advantages of working with Crookes Brothers, especially that they are very supportive to our community.*

*They have been for a number of years of assistance to us in terms of making sure there is stability on the farm, there is working good conditions, they always look after the project well.”*

## b) Mawecro Farming

- Mawecro
- Crookes Brothers Ltd - owned
- Crookes Brothers Ltd - leased



“ To employ you need to sustain the farm and Crookes Brothers in helping a lot in terms of sustaining the farm so that there can be work for the communities. So, so far so good. ”

*Abraham Mokobane - Banana Agricultural Manager*

Mawecro Farming is a joint venture between CBL and the Mawewe Community. It manages 1,550 ha of sugar cane, and 259 ha of bananas. Previously, CBL owned the farm, which was sold to the government in 2010, and leased back to CBL. This was converted to a 20-year JV with the Mawewe community in 2016.

The initial challenges of working with the community, who had little experience in farm management and corporate governance practices, have been partly overcome and continue to be a work-in-progress.

Production at Mawecro has excelled due to careful management, and rotation between sugar cane and bananas that benefits both crops. Sugar cane yields are forecast at 115 t/ha this year, up from 91 t/ha during the drought two years ago. Drip irrigation is the most efficient irrigation system that increases yields from 80-100 t/ha to 120-125 t/ha. Over 50% of the farm is now under drip irrigation, which continues to be installed annually on replanted fields.

“ If your irrigation system is good, you’re going to be the best. The sub-surface drip - it’s unbelievable, it’s amazing. It’s one of the best irrigation systems in the world. It’s irrigating like a droplet, dripping exactly to the roots. ”

*Sipho Nhleko - Cane Farm Manager*

Banana year-on-year production was up 35% with yields of up to 75-80 t/ha and a greater proportion of first grade bananas – 71% compared to a 52% average for the region. Profits from bananas offset the poor sugar prices.



*Mawecro Farming produces around 1,550 ha of sugar cane (left) and 259 ha of bananas (right).*



On-farm support and impact

“The joint venture model is beneficial to the community through job creation, skills transfer, you get dividends and you get benefits through CSI programmes. So, it is benefiting communities in a very massive way. And it is a model which really sustains the business.”

*Lucky Myeni - Mawecro Community Liaison and CSI Manager*

### c) Bellcro Farming

Crookes Brothers previously owned a 43 ha deciduous fruit farm in the Western Cape (South Africa) called Belleview. In 2012, it was sold by CBL to the Department of Rural Development and Land Reform as a land transformation project. In April 2017, after five years of government delays, CBL were approved as the strategic partner for the JV, and the Government released the recapitalisation funds for the operation.

CBL formed a JV company, Bellcro Farming, with ten former employees who own 55%. The JV partnership is for a period of five years. Belleview farm remains owned by Government and leased to Bellcro Farming. The board of Bellcro Farming comprises three previous employees, two CBL members and an independent member. The board meets quarterly to review and plan operations. All profits from the first two years are being invested back into the farm, with dividend pay-outs planned for year three.



## 3.2 Training Grain Farmers: Improving Smallholder Yields

### Training smallholder grains farmers – Impact summary

Our aim is to improve smallholder yields and incomes through providing training in improved agricultural methods. Using conservation farming techniques can increase yields, reverse soil erosion, and mitigate the effects of climate change. Its principles can be implemented using the limited resources available to smallholder farmers: minimum tillage, mulching and crop rotation.

We estimate that 1,900 farmers have benefited from training during field days. Our review of academic research has shown that by implementing conservation agriculture methods alone, smallholder farmers can increase their maize yields by 0.7 t/ha from 1.7 to 2.4 t/ha. We estimate that this would increase individual incomes by \$212 annually. This is a conservative evaluation as we have observed seed maize yields of up to 9 t/ha achieved on demonstration plots in Zambia.

Country	Primary crops included in training	Demonstration plots (#)	Estimated farmers benefiting (#)
Tanzania	Maize, soya, sunflower	23*	1,150
Tanzania	Potato	-	200
Zambia	Maize, soya, groundnuts	2	100
Zambia	Sunflower, sorghum	18	450
<b>Total</b>		<b>43</b>	<b>1,900</b>

**Conservation agriculture – techniques**

Conservation agriculture farming techniques aim to increase yields, reverse soil erosion, and mitigate the effects of climate change. It has three key principles that can be followed using resources available to smallholder farmers, requiring minimal financing:

- Minimum or no tillage
- Using crop cover, residues or mulch
- Crop diversification, whether intercropping or rotation with legumes.





### Conservation agriculture – academic research on yield increases

We have localised results of possible yields from Silverlands and Foundations for Farming demonstration plots in Zambia (see below), but we wanted to understand the potential more broadly. To do this, we reviewed a wealth of academic research comparing yields obtained using traditional farming techniques with yields obtained from conservation farming techniques. We focused on nine studies of smallholder agriculture. These studies covered seven countries across Sub-Saharan Africa.

The studies included ~900 smallholder farmers, and ~85 scientifically monitored individual trial plots. They showed that conservation agriculture improved yields from 1.7 t/ha under traditional methods, to 2.4 t/ha (a 43% increase or yield improvement of 0.7 t/ha). These results were additionally validated by a meta-analysis of another 41 studies (Corbeels et al., 2014).

#### Yield increases possible with the implementation of conservation agriculture methods: summary of nine academic studies

Country	Yield (t/ha)		Yield Increase (t/ha)	% increase
	Traditional agriculture	Conservation agriculture		
Ethiopia	1.3	1.8	0.5	41%
Kenya	2.0	2.5	0.5	25%
Malawi	3.5	4.4	0.9	25%
Mozambique	0.9	2.1	1.2	125%
Tanzania	1.7	2.6	0.9	54%
Zambia	2.0	2.6	0.6	32%
Zimbabwe	1.4	1.9	0.6	40%
<b>Total</b>	<b>1.7</b>	<b>2.4</b>	<b>0.7</b>	<b>43%</b>

Conservation farming also significantly increases smallholder farmer incomes. A study in Malawi found that conservation farming (including rotation with a legume) yielded gross margins of \$705/ha versus \$344/ha for traditional farming, an impressive \$361/ha improvement (Ngwira et al., 2019). Another study in Zambia, reported average increases of \$128/ha with conservation farming (Komarek et al., 2019). Our estimates, based on reasonable yield improvements (0.7 t/ha) and average price levels, show an annual increase of \$212 is achievable by smallholder farmers from a base income of \$500 per annum.

Importantly, conservation agriculture has a positive environmental impact. With minimum tillage, farmers can improve moisture levels and biodiversity in soils, increasing fertility and reducing the effects of droughts. Rotating with a legume fixes soil nitrogen which increases yields and reduces pest and disease pressure common under monocropping. Additionally, conservation agriculture helps return atmospheric carbon to the soil.

### Training smallholder cropping farmers

Our training of smallholder cropping farmers has centred around four areas:

- 1 South western Tanzania: maize and soya farmers
- 2 Tanzania's Makete highlands: potato farmers
- 3 Southern Zambia: sunflower and sorghum farmers around SRL
- 4 Central Zambia: maize, soya and groundnut farmers around SASL and SZL

#### 1 South western Tanzania: maize and soya farmers

The focus of training has thus far been on the use of improved seed varieties and crop rotation. Training has included conservation agricultural methods which will be more of a focus going forward. The NGO Caritas has been integral in providing training to smallholder farmers in the Songea area via 22 demonstration plots and groups called Agricultural Marketing Cooperatives. (More details in the section *Tanzania: Working with Smallholder Grain Farmers* pg38.)



*Smallholder training day at a demonstration plot in Tanzania, including several varieties of Zamseed maize and sunflower.*



*A demonstration plot at Silverlands Ndolela trials different crop varieties for the commercial farm and smallholder farmers. Plots are also used for training smallholder farmers.*

## 2 Tanzania's Makete highlands: potato farmers

In the high elevation Makete area, over 200 smallholder potato farmers have attended training focused on the long-term benefits of soil fertility management, crop rotation, and the use of improved varieties. Training has centred around field training days held at the farm and in communities, with farmers also visiting the farm on an ad hoc basis to learn. In the coming season, ten demonstration plots are being planted regionally, rotating maize in summer with potatoes in winter. (See discussion on the blight resistant potato varieties under the section *Inputs and Impact* pg28.)

*Smallholder potato farmers in the high elevation Makete area in Tanzania receive training in soil management, crop rotation and the new blight-resistant varieties that Silverlands Tanzania are introducing.*



### 3 Southern Zambia: sunflower and sorghum farmers around SRL

Silverlands Ranching trains smallholder grain farmers in conservation agriculture and drought resistant crops with assistance from NGO Conservation Farming Unit and AgDevCo. 40 field days have been hosted at 18 demonstration plots in community areas in the last year. (Details in the section *Zambia: Working with Cattle Farmers* pg51.)

### 4 Central Zambia: maize, soya and groundnut farmers around SASL and SZL

Training of communities surrounding the two Silverlands grains farms in Central Zambia (SZL and SASL) is assisted by NGO Foundations for Farming and includes the key conservation agriculture principles. Demonstration plots are run on the Silverlands farms and by community groups in surrounding areas, with guidance from Foundations for Farming. Roughly 100 people routinely attend the training sessions.

#### Survey of smallholder farmers in Central Zambia – Poor yields and farming methods

In 2017, we conducted a survey that highlighted some of the challenges in the Zambian smallholder agricultural sector. In communities surrounding the cropping farms in Central Zambia (SZL and SASL), farmers were:

- Achieving low crop yields (1.7 t/ha for maize, 1 t/ha for soya);
- Growing low value crops with poor agronomic techniques; and
- Short of storage and good inputs.

#### Working with Foundations for Farming

The NGO Foundations for Farming runs various training programmes in Central Zambia, including training for smallholder farmers and farm workers. The focus is on conservation farming methods such as minimum tillage, composting, mulching and crop rotation. Training also includes modules on financial and family principles. Foundations for Farming teachings are practical and relevant for rural settings where access to equipment and resources is limited. Once farmers have learnt the basics, training in vegetables, agroforestry and poultry rearing can be added.



Initial lectures



Rotation with soya beans



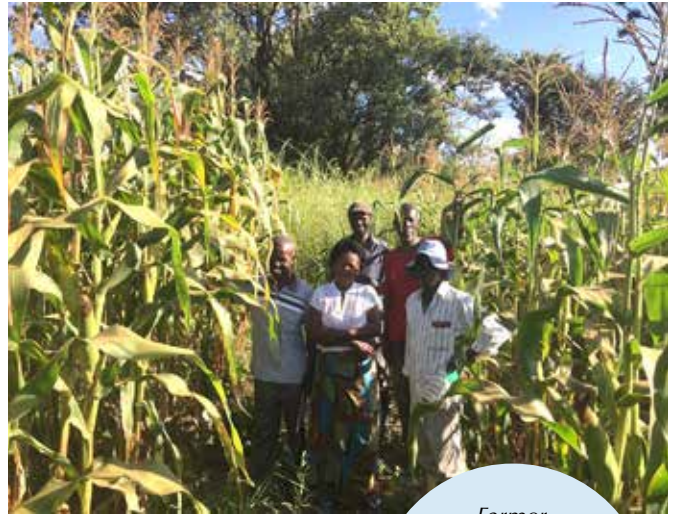
Composting

Silverlands assisted with the construction of the Foundations for Farming training centre to facilitate their work, and Silverlands' employees attend training sessions to improve skills in the labour force. Foundations for Farming has also been commissioned to run training sessions at the Silverlands' demonstration plots and in surrounding areas.

Foundation for Farming have demonstrated extraordinary results on their training plots near one of the Silverlands farms using the same implements as smallholder farmers. Soya yields of 4 t/ha have been achieved, compared with an average of 1 t/ha achieved by smallholder farmers, and maize yields of 9 t/ha compared to 1.7 t/ha in the same area. This clearly indicates substantial scope for boosting yields and increasing smallholder incomes.

New communities are invited to the Silverlands' training days, and if they are enthusiastic then they are encouraged to form a group. These 'Foundation Groups' plant their own plots of maize, soya and groundnuts and are regularly visited by Foundations for Farming. Training sessions held within communities makes the training accessible to the whole community. This is particularly important for women, who tend to have domestic duties that restrict their travel yet who are heavily involved in farming activities.

Six Foundation Groups were formed in the last season. They achieved maize yields of 3.8 - 4.4 t/ha, soya yields of 2.1 t/ha (even surpassing those on Silverlands' demo plots), and groundnut yields of 1.7 - 1.8 t/ha. These yields are a huge improvement on average smallholder yields. They represent typical results for the first year of implementing the conservation farming principles taught. However, Foundations for Farming is expecting an even greater improvement in the next season.



Farmer groups compare maize grown using conservation farming methods (on the left), to traditional methods (on the right).

**“Women smallholder farmers are particularly vulnerable to poverty and hunger, as they often lack equal access to agricultural information, financing, and decision-making power.”**

*Bill and Melinda Gates Foundation Website*

### Silverlands' demonstration plots with Foundations for Farming

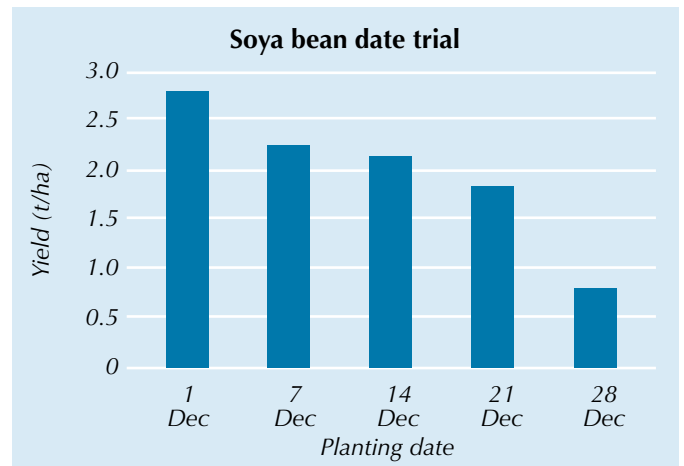
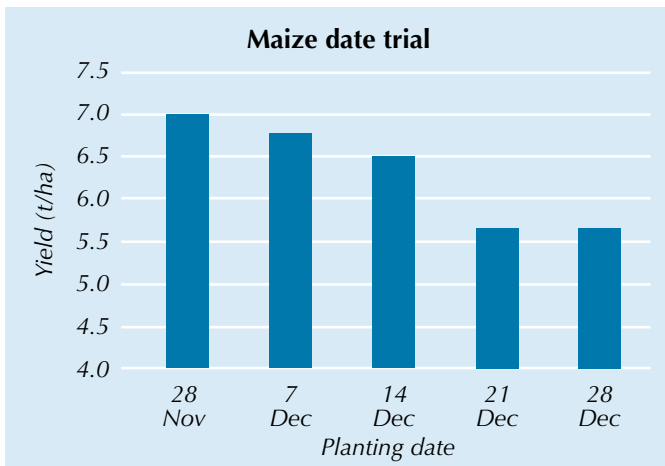
These plots trial different varieties of maize, soya, sugar/dry beans and groundnuts – useful knowledge for both commercial farms and smallholders. These plots serve as a 'classroom' for training sessions with smallholder farmers.



Silverlands' demonstration plot at SASL with commercial fields in the background.

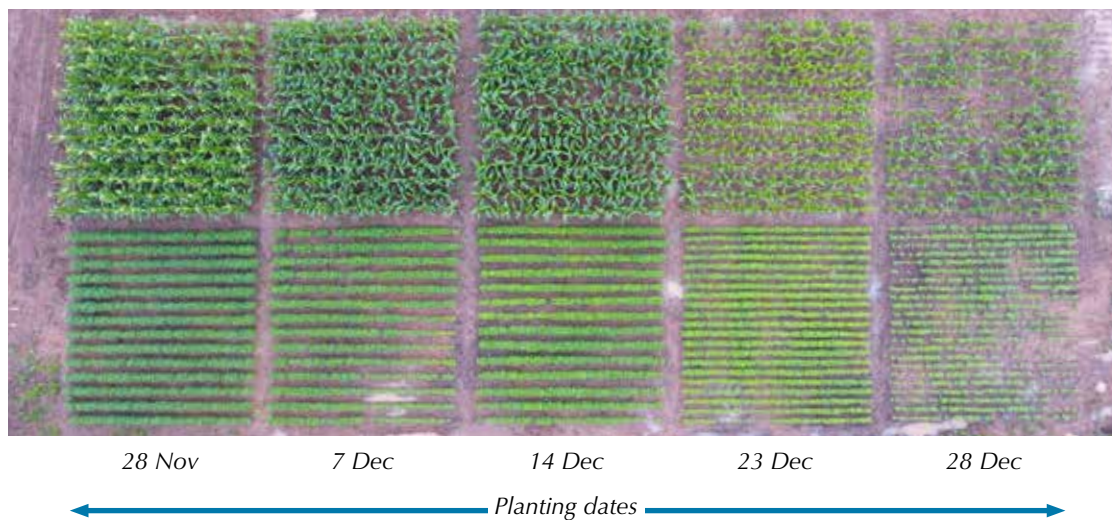
### Demonstrating timing of planting

Planting on time is a key message because the timing of planting has an enormous impact on crop yield. A trial in 2017 to 2018 at SASL showed that maize yields reduced 20% (7 t/ha to 5.6 t/ha) simply by planting a month later (28 November vs 28 December). Over a similar period, soya yields reduced 70% (2.8 t/ha to 0.8 t/ha). Results were likely influenced by inconsistent rain during the season but demonstrate the trend clearly.



On-farm support and impact

Date Trial at SASL: Photo taken 6 February



## 4 Inputs and Impact

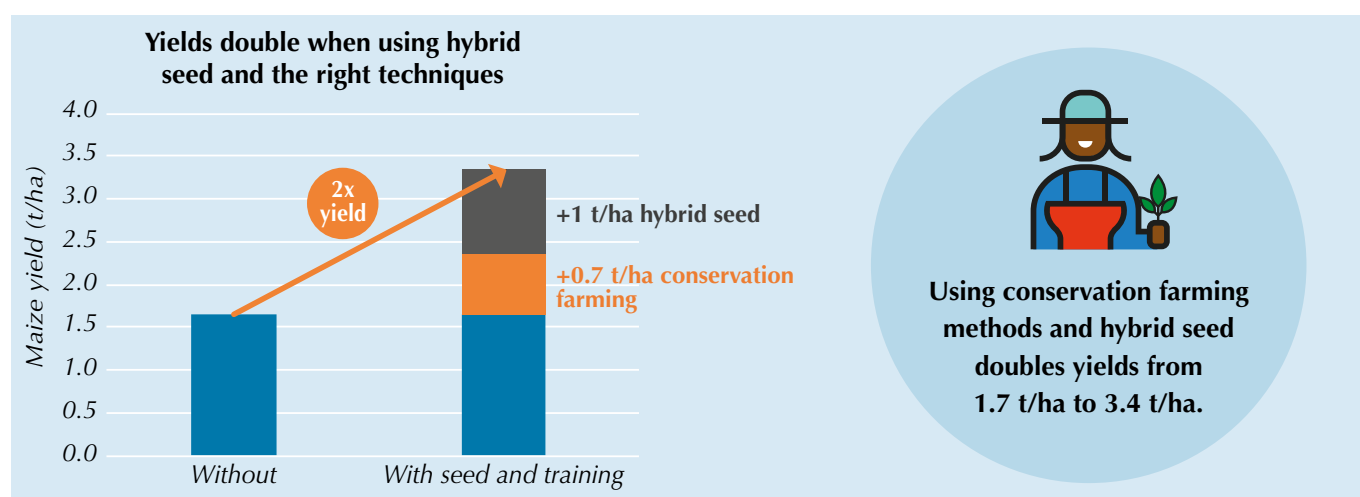
### High yielding seed - Impact summary

This year we expanded our development and production of high-quality hybrid seed, which can increase yields and incomes, improve drought tolerance and counter some diseases and pests.

We estimate the 8,700 tonnes of (mostly maize) seed produced and sold this year may be planted by almost 240,000 smallholder farmers, a 63% increase from 2018. Summarising academic research from across Sub-Saharan Africa has shown that by adopting hybrid seed, farmers can expect maize yields to increase from an average of 1.6 t/ha by 1 t/ha or ~60%. With this, and accounting for the cost of the hybrid seed, we estimate each farmer's profits to increase by ~\$250 per annum, from ~\$500 to \$750, an increase of ~50%. This produces a substantial increase in income given the large number of farmers benefiting: these farmers will earn an additional \$60 million this year.

Fund	Community participants (# 2019)	Increase in household income annually (\$ p.a. 2019)	Value added to community annually (\$m p.a. 2019)
Silverlands I	187,717	265	50
Silverlands II	62,708	292	18
<b>Overall total*</b>	<b>236,948</b>	<b>255</b>	<b>60</b>

\*Adjusted to avoid double-counting.



### The value of hybrid seed

We aim to improve smallholder farmers' yields through the development and production of high-quality hybrid seed. Using hybrid seeds can:

- Increase yields
- Increase incomes
- Improve drought tolerance
- Counter some diseases and pests

To meet increasing food requirements, global production of the three main cereal crops will need to increase to 70% by 2050 (Cairns et al., 2013). To achieve this, smallholder farmers in Africa must increase their yields substantially. Access to higher yielding hybrid seed is key to realising this dramatic increase.

Studies report that only 42-52% of farmers use hybrid seed:

- Our survey in Tanzania: 42%;
- World bank [policy paper](#) (2011): 44%;
- [A survey](#) by Abate et al. (2017): 52% in East Africa, 50% in Southern Africa, with a much lower overall average of 32% for all surveyed countries.

In other words, at least half of smallholder farmers do not use hybrid seed. This is partly due to lack of availability and provides an opportunity for our operations to meet that supply.

### Development and production of hybrid seed

Developing hybrid seed requires years of trials, crossing varieties and then growing the next generation to assess its characteristics. This requires patience and skill. The resulting seed has a mix of characteristics from the two parent lines.

Hybrid seed can be carefully bred to have high yield potential, improved drought tolerance and grains of high nutritional content. In addition, hybrid seed varieties are specifically developed for the local conditions and production methods of smallholder farmers. This seed significantly outperforms seed saved from the last season’s crop. Unfortunately, smallholder farmers often do not have access to, or knowledge of, hybrid seed and revert to using farm saved seed with poor yields.

Once the right two ‘parent’ lines are found, producing large volumes of the hybrid seed entails careful cultivation. The variety selected to be seed-bearing (referred to as the ‘female’) is pollinated with a different variety (the ‘male’).



Growing seed maize is a specialised task. Male plants (with tassels) pollinate the female plants to result in a good genetic blend in the resulting seeds. Every female plant must be “de-tasselled” to prevent self-pollination. This leaves two rows of male plants for every six rows of female plants.



Inputs and Impact

“Women have the attention to detail required to work with seed maize.”

*Duncan Kennaird, Manager, Silverlands Ndolela, Tanzania*

### Review of academic literature on hybrid seed

We reviewed published scientific material to ascertain possible increases in yield if hybrid maize seed was adopted by smallholder farmers. We included 13 academic papers that covered over 10,000 smallholder farmers across six countries in Sub-Saharan Africa.

We found that smallholder farmers planting hybrid seed produced 62% greater yields than those using farm saved seed, an average yield increase of 1 t/ha, to reach an overall yield of 2.6 t/ha.

### Summary of academic literature

Region	Yield using farm saved seed (t/ha)	Yield using hybrid seed (t/ha)	Yield increase (t/ha)	% increase
East Africa	1.7	2.7	1.1	66%
Southern Africa	1.8	2.4	0.6	34%
West Africa	1.3	2.3	1.1	83%
<b>Total</b>	<b>1.6</b>	<b>2.6</b>	<b>1.0</b>	<b>62%</b>

The reviewed literature showed that even though hybrid maize seed costs more than farm saved seed, using hybrid seed significantly increases incomes for smallholder farmers. A Zambian study estimated that growing hybrid seed increased incomes for smallholder maize farmers by 29% (Smale and Mason, 2013). In Northern Tanzania, despite higher seed costs “hybrid adoption was associated with significant profit advantages” (Kathage et al., 2012). In a drought in Ethiopia in 2015, it was estimated that 2-3% of rural farmers (64k – 104k households) escaped poverty by adopting hybrid seed, which yielded 48–63% more than farm saved seed (Zeng et al., 2015). This study found that 72% of farmers using farm saved seed were interested in using improved varieties in future (Zeng et al., 2015).

In summary, these studies demonstrate that adopting hybrid maize seed has significant potential for improving yields and incomes for smallholder farmers in Sub-Saharan Africa.

### Silverlands – Increasing access to high yielding seed

This year the 8,700 tonnes of seed produced (mostly maize seed) may be used to plant 330,000 ha of crops by smallholder farmers, mostly in Zambia and Tanzania. Overall, we estimate that this seed will be grown by almost 240,000 smallholder farmers. With increased yields of 1 t/ha from growing our higher-yielding seed, each farmer’s profits should increase by \$255 annually. This yield improvement is expected to increase incomes of smallholder farmers by \$60 million this year.

### Farmers growing crops with hybrid seed - 2019

Farm	Our seed production (t)	Area planted with our seed (ha)	Community participants (#)	Increase in household income annually (\$ p.a.)	Value added to community annually (\$m p.a.)
<b>Silverlands I</b>					
STL (Tanzania)	2,811	98,176	75,409	242	18
SNL (Tanzania)	3,308	147,680	98,831	291	29
SZL + SASL (Zambia)	438	17,520	13,477	209	3
<b>Silverlands I total</b>	<b>6,557</b>	<b>263,376</b>	<b>187,717</b>	<b>265</b>	<b>50</b>
<b>Silverlands II</b>					
Zamseed (Zambia)	2,695	107,800	62,708	292	18
<b>Overall total*</b>	<b>8,718</b>	<b>334,456</b>	<b>236,948</b>	<b>255</b>	<b>60</b>

\*Adjusted to avoid double-counting



Demonstration plots in Tanzania showing Zamseed 606 (left) and Zamseed 638 (right) Smallholder farmers were initially excited about the good emergence of 638. By the end of the season, 606 achieved higher yields and received more praise from smallholder farmers.

“It seems the size of the Zamseed 606 maize is very good compared to our local variety, so it good to farmers. Most of the villages we have passed they said, oh we need that variety because it is so good compared to our local variety.”

James Noel, Monitoring and Evaluation, Caritas





### Sunflower seed in Tanzania

Across Tanzania, more than 1 million ha are planted to sunflower. Yet the country still imports over \$300 million of vegetable oil. To stimulate local production, the import duty on vegetable oil has been increased. 95% of production is by smallholder farmers, yet 85% are using local varieties that underperform in terms of yield and oil content. The primary constraint on smallholder production is poor access to improved seed.



Silverlands has been integral in introducing new varieties of sunflower that are both high-yielding and rich in oil, containing up to 8% more oil than local varieties (a total oil content of over 40%). This year, 96 t of sunflower seed were produced in Tanzania. This may be used to plant over 19,000 ha by ~39,000 smallholder farmers, increasing each farmer's income by \$125 each year, 55-60% of whom are women. Using this seed will raise incomes for both the farmer and the owner of the sunflower seed crusher.

Silverlands Ndolela is the first producer of hybrid sunflower seed in Tanzania. It registered two new varieties in Tanzania to allow their production and use by smallholder farmers. Where imported hybrid sunflower seed costs \$12/Kg (or more), the seed that Silverlands Ndolela has grown will be retailed at \$6.50/Kg, almost half the cost of the imported seed. This is a huge step in making improved seed varieties more accessible.

Farmers lack information on the benefits of using quality seeds (yield and oil content) and are limited in their choice of seed varieties. To show farmers the new sunflower varieties, ~600 mini demonstration plots were planted with the aid of several NGOs in the prime sunflower areas – Tanzania's Central Corridor and Southern Highlands.

Additionally, sunflowers are good to add into the rotation with maize and soya beans as they improve soil by bringing nutrients to the surface soil layers from deeper down. Sunflower oil is also high in polyunsaturated fats which have nutritional benefits.

The large heads of sunflowers require large quantities of bees for pollination, presenting an additional opportunity. Silverlands' Ndolela farm is building 500 hives for a bee-keeping and honey producing project that will involve local communities.



### Seed potatoes in Tanzania



Silverlands Tanzania produces seed potatoes at the Ludodolelo farm in the high elevation Makete area that has a perfect climate for growing potatoes. Many smallholder farmers in that region also grow potatoes, presenting an excellent opportunity to train farmers and provide a supply of improved varieties of potato seed.

Smallholder farmers typically achieve low yields of 5 - 10 t/ha, when yields up to 40 t/ha are possible. Reasons for these low yields include: lack of good quality clean seed of improved varieties; no crop rotation; and losses due to soil diseases. To address these problems, Silverlands Tanzania is introducing new blight-resistant varieties to Tanzania and training smallholder farmers on the use of improved varieties as well as the long-term benefits of soil fertility management and crop rotation.

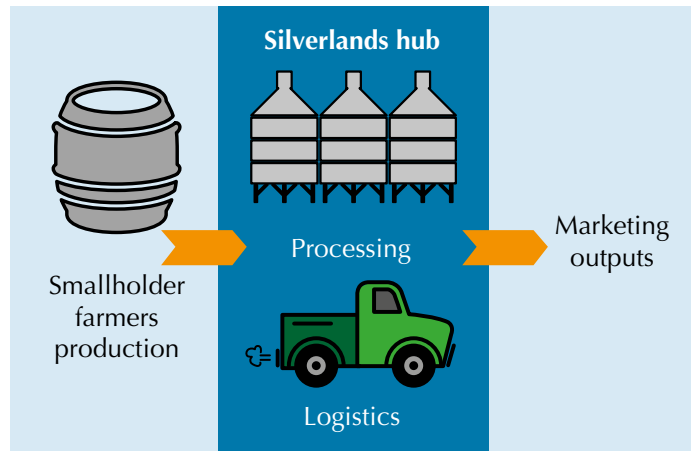


*New varieties of potato are being trialled at Silverlands Tanzania's Ludodolelo/Makete farm and registered in Tanzania. Current varieties are killed by blight without the application of agrochemicals (seen in the empty rows). The new blight resistant varieties (in the healthy-looking rows) are expected to benefit smallholder farmers.*

## 5 Markets: Our Hub Out-grower Projects

### 5.1 The Model

In this model a business ‘hub’ is established that includes processing of a product and assists smallholder farmers to help grow this product. The key to achieving a positive impact is to provide a market to smallholder farmers for a high value crop. By doing this, the smallholder farmer can diversify from lower value crops and thus make a sustainably higher income. The hub can also provide technical support, training and improved inputs – enabling farmers to reach their production potentials. This innovative and integrated solution has proven successful in galvanising markets and raising incomes.



### 5.2 Silverlands Tanzania Poultry: The Hub Out-grower Model in Action

#### Silverlands Tanzania Poultry - Impact summary

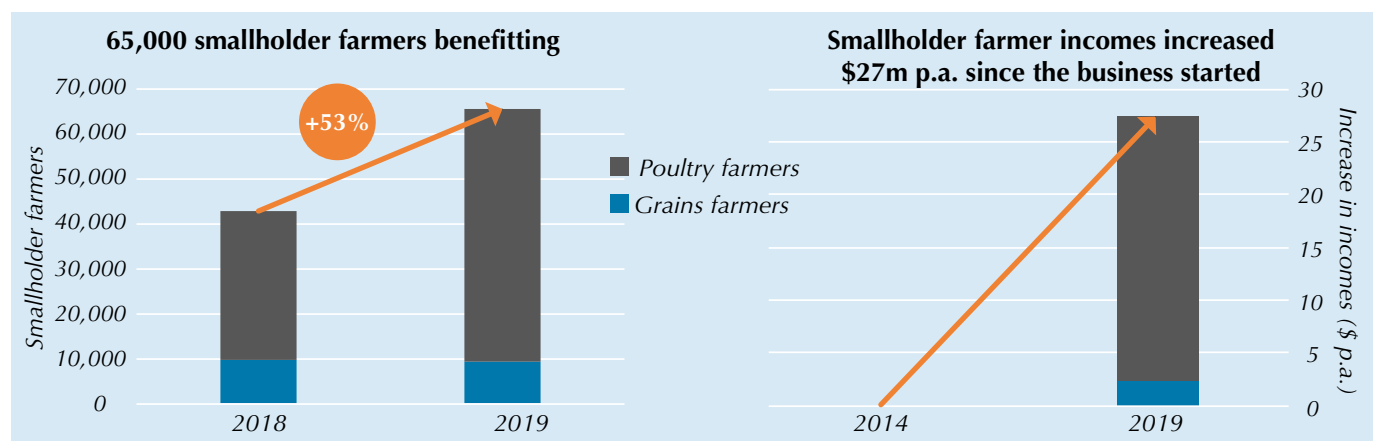
Silverlands Tanzania’s poultry business, an example of our hub out-grower model, produces day-old chicks and poultry feed primarily for sale to smallholder farmers. As inputs into the poultry feed, the business purchases grains (maize and soya) from smallholder farmers. From a standing start in 2014, the business now benefits more than 65,000 people, including:



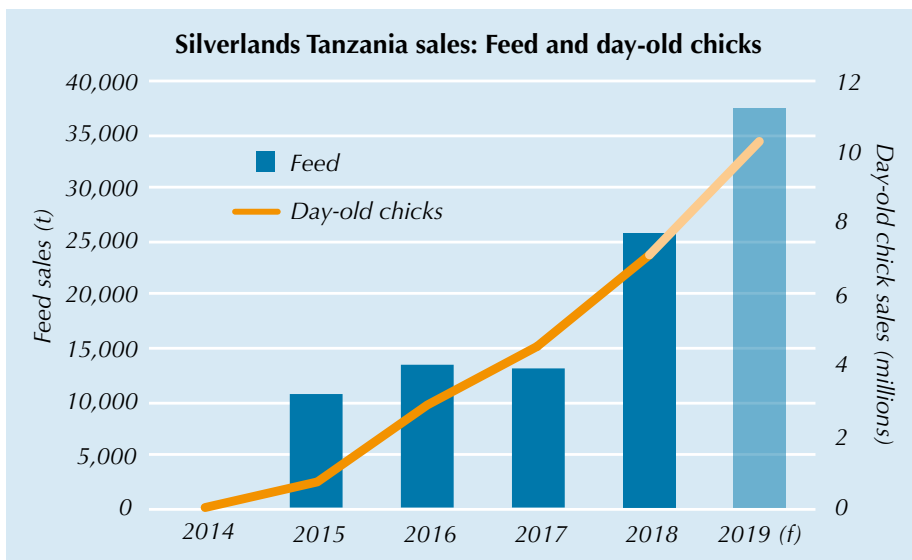
The Silverlands Tanzania silos and feed mill housed in the shed, with poultry houses and hatchery in the distance.

- 9,000 grain farmers (similar to last year) - around two-thirds of whom are women
- 56,000 poultry farmers (up 70% from 33,000 in 2018) - over 80% of whom are women.

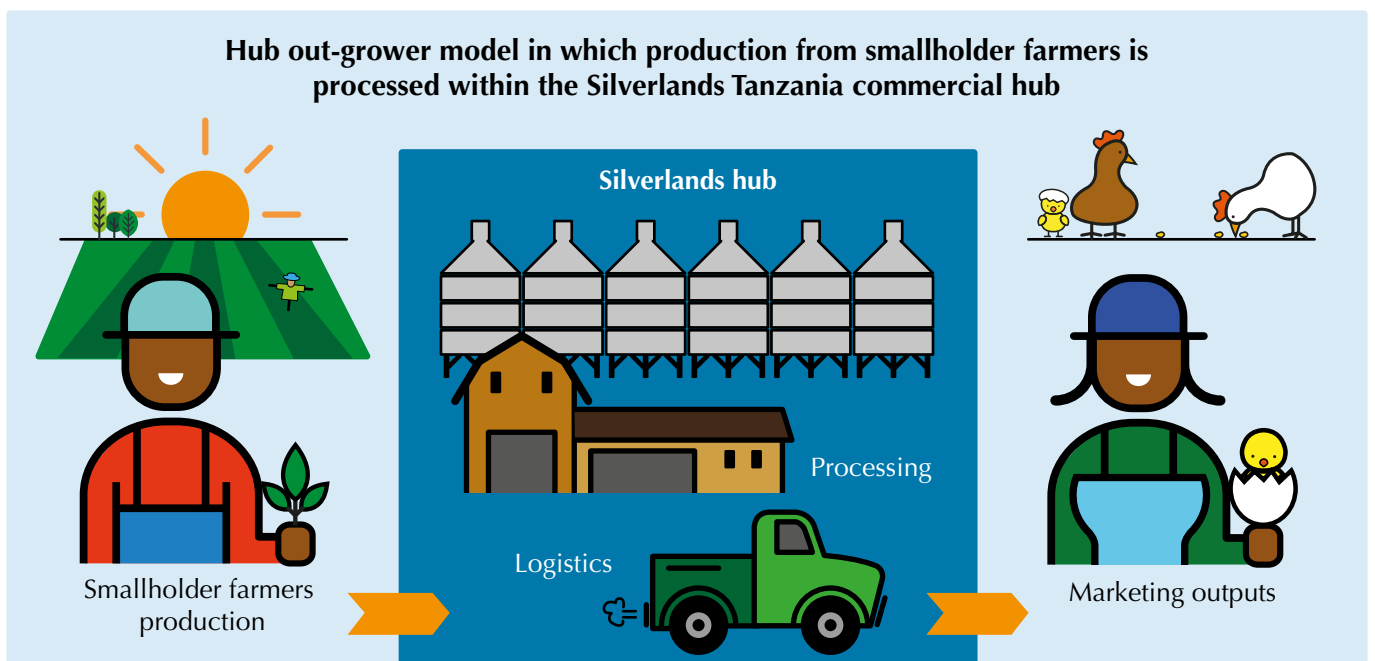
Incomes per farmer have increased by ~\$417 per annum from \$500 to \$917, implying an increase in smallholder net incomes of \$27 million per annum (up from \$23 million per annum in 2018), a significant multiplier effect.



Impact group	Community participants impacted (# 2019)	Increase in household income annually (\$ p.a. 2019)	Value added to community annually (\$m p.a. 2019)
<b>Grains farmers</b>			
Farmers selling grains to STL	9,180	248	2.3
<b>Poultry farmers</b>			
Brooder units	237	495	0.1
Smallholder farmers (17 chickens)	45,700	190	8.7
Medium farmers (400 chickens)	8,388	1,793	15.0
Farmers only buying poultry feed	2,046	612	1.3
<b>Total</b>	<b>56,371</b>	<b>445</b>	<b>25.1</b>
<b>Overall total / weighted average</b>	<b>65,551</b>	<b>417</b>	<b>27.4</b>



The business has grown rapidly, from breaking ground in 2014 to over 37,000 t of feed and 10.3 million day-old chicks forecast to be sold in 2019, a year-on-year growth of 45%. These are impressive production figures for anywhere in the world, and particularly for a country with poor supply chains and skills availability.



### Silverlands Tanzania background and overview

With the hub out-grower model in mind, SilverStreet evaluated the social impact and growth opportunities in Tanzania. Of the agricultural workforce in the country, 83% of landholdings are cultivated by smallholder farmers, contributing around 75% of the total agricultural output (FAO, 2018). These farmers represent a substantial part of Tanzania's economy and food production, posing an important target for development and growth opportunities.

SilverStreet identified several areas with a high potential for growth and positive social impact:

- A fledgling poultry industry that was underdeveloped
- An almost non-existent soya market
- The absence of quality chicken feed

In 2013, Silverlands Tanzania purchased several existing commercial farms in Tanzania's Southern Highlands. The aim was to answer to the above challenges by providing a market for higher value crops, benefiting thousands of smallholder grain farmers, and to provide quality inputs for smallholder poultry farmers, developing the poultry market.

Poultry consumption	Kg per capita (2013)
Kenya	0.5
Uganda	1.5
Tanzania	1.8
South Africa	37.6
United Kingdom	31.6
United States	50.0

Source: Food and Agriculture Organisation

### Poor nutrition restraining development in Tanzania

Tanzania's population is prone to significant nutritional challenges. 34% of children under five suffer from stunting or chronic malnutrition, 14% are underweight (UNICEF, 2015) meaning one in three children are chronically malnourished (WFP, 2019). The World Health Organization has identified Tanzania as one of the ten worst affected countries for childhood malnutrition in the world (WHO, 2012).

### Poultry as an opportunity

Poultry and eggs are an efficient source of protein, yet poultry consumption in Tanzania is low. Families of five may consume only one chicken and five eggs per month between them (ILRI Tanzania Baseline Report, 2018). Per capita consumption is lower than other African countries and a mere 5% of South Africa's. It is common for households to keep chickens, particularly in rural areas, yet the chickens are mostly unproductive indigenous breeds. There are obvious opportunities for growth in the poultry sector, with potentially significant positive impacts on population health.



### Tanzania's underdeveloped poultry industry

Despite high GDP growth of 6-7% per annum over 10+ years, the Tanzanian poultry industry never developed properly. One way of increasing poultry consumption would be through cheap importations of frozen chicken, as happens in other countries. However, this is limited by an almost non-existent cold chain, and the Tanzanian market prefers tasty local breeds over western commercial broilers. This would also miss the excellent opportunity for in-country development, and the government continues to take a proactive stance on banning imported chicken to develop the local poultry sector.

### Underdeveloped feed industry

A productive poultry industry requires a supply of quality, high protein feed. This would increase farmer efficiencies, through reduced chicken mortality and increased egg production, and thus increase consumer access to low cost quality protein. Globally, the protein content of feed is largely provided by soya. Before Silverlands' investment, there was virtually no soya grown in Tanzania, and the protein for poultry feed was sourced from unsustainable and salmonella-afflicted fish from Lake Victoria.

Smallholder farmers were planting most of their land to maize and not practicing modern agricultural techniques. This resulted in stagnant yields and stubborn poverty levels. This was combined with large maize price fluctuations, a lack of finance to fund working capital, little grain storage and no soya processing infrastructure. Conditions for growing soya are excellent in south western Tanzania and there are numerous benefits to smallholder farmers. Traditionally, farmers had not been growing soya as there was no market for the product.

### Silverlands built the country's first soya processing plant

SilverStreet invested capital into Silverlands Tanzania to facilitate the construction of world-class feed processing, storage, poultry rearing and hatching infrastructure. This integrated poultry business sells feed and day-old chicks alongside each other.

Silverlands Tanzania built the first soya processing plant in Tanzania. As raw soya negatively affects animals' digestion, it must be processed first. Construction of the processing plant allowed soya beans to be used as the protein component of poultry feed. Silverlands Tanzania also built a 40 tonne/hour capacity feed-mill, the largest known feed-mill in East Africa, and 32,000 tonnes of grain storage.



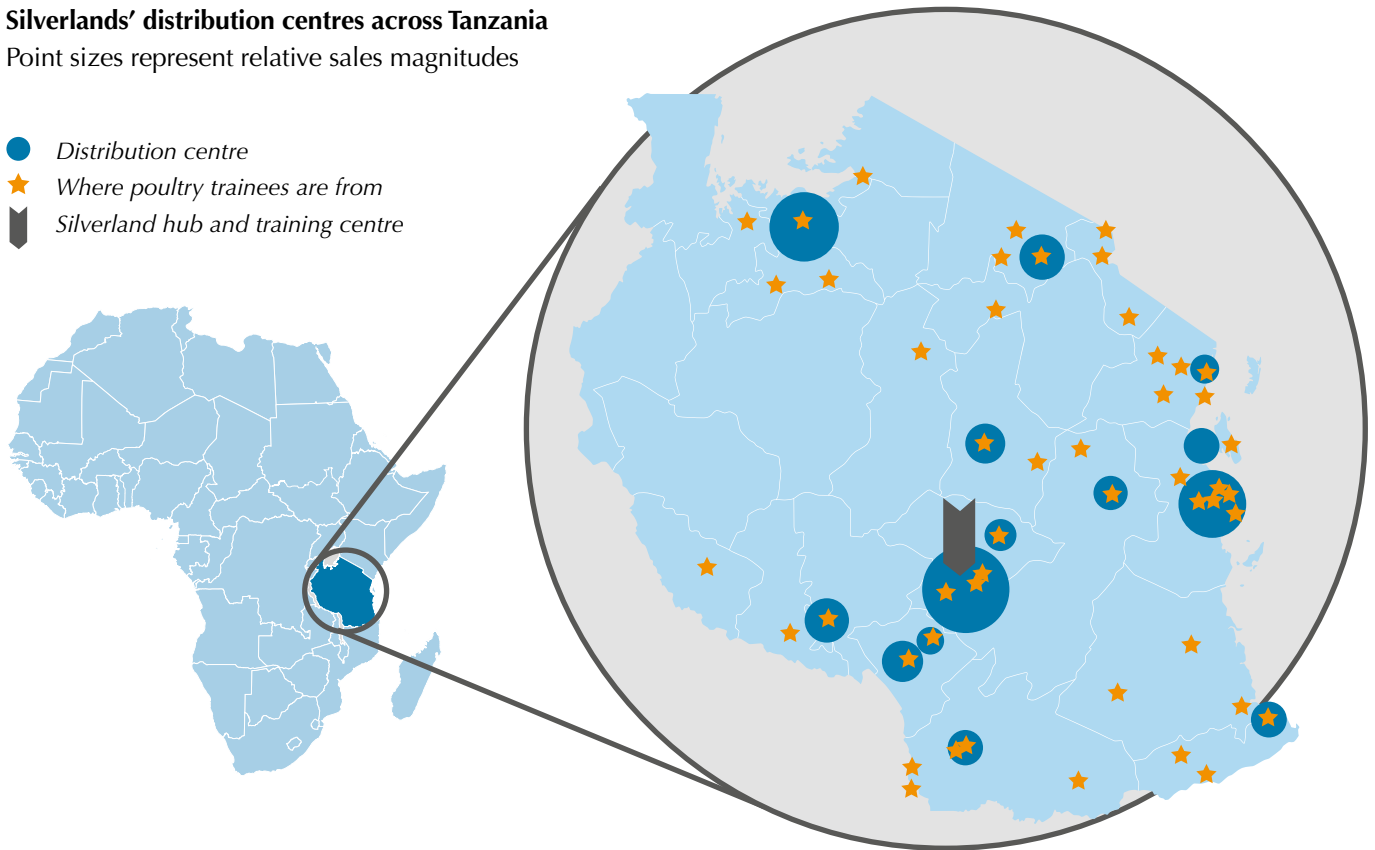
Completing the business 'hub', a distribution network was developed with 13 distribution centres and over 220 agents providing products and skills transfer to 56,000 poultry farmers. Silverlands Tanzania is now recognised as one of the largest players in the poultry industry in Tanzania, attracting the attention of the Tanzanian President His Excellency Dr John Magufuli, who opened the feed mill in 2018. Silverlands' achievements have galvanised the Tanzanian poultry sector.



### Silverlands' distribution centres across Tanzania

Point sizes represent relative sales magnitudes

- Distribution centre
- ★ Where poultry trainees are from
- Silverland hub and training centre



### Development impact – integrated into the Silverlands Model

In other countries, integrated models are common in the poultry sector, in which the business grows its own soya, processes it, grows poultry, processes the poultry and sells the finished product. Following this model would have missed a massive development opportunity in Tanzania, as smallholder farmers would not be involved.

The key success of Silverlands' project design was to integrate with two groups of smallholder farmers, those providing grain inputs for the feed, and poultry farmers who could purchase and rear their own poultry. An added value is that women would primarily benefit in this model as most smallholder farmers are women. In some cases, the suppliers of raw materials are also customers.

**The dynamic growth of Silverlands Tanzania proves our original investment thesis. The success has arisen because the business has successfully 'fixed' the key issues in the poultry value chain in Tanzania: no soya processing plant, inadequate storage, poor poultry breeds, insufficient distribution network, and poor farm management techniques.**



*Silverlands Tanzania is on track to sell over 37,000 tonnes of poultry feed, produced in the feed mill (left) and 10.3 million day-old chicks, in 2019.*

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### 5.3 Tanzania: Working with Smallholder Grain Farmers

Silverlands Tanzania’s hub is perfectly situated in Iringa, to make the most of the agricultural potential in the highly productive southern agricultural corridor. Silverlands Tanzania’s soya processing facility provided the market that initiated the production of large volumes of soya by smallholder farmers in this area. The company works with NGOs, primarily Caritas, to provide training to smallholder farmers on the benefits of soya production. Training is also provided on improved agricultural methods, such as minimum tillage, rotation, mulching and composting, the use of hybrid seed and post-harvest handling and management. With a grant from the IFU, Caritas has assisted the formation of smallholder farmer groups to facilitate the purchase of inputs and sale of grains to Silverlands.



#### Benefits of growing soya beans

Previously, farmers in the region generally mono-cropped maize, leading to low soil fertility and disease pressure. Farmers have now started rotating maize with soya. As a legume, soya fixes nitrates in the soil, naturally replenishing the soil and resulting in higher maize yields the following year. As pests and disease tend to be specific to plant groups, farmers also reduce disease pressure by rotating between maize and soya (from the grass and legume families). Furthermore, the input costs for soya are less than maize.

#### Step-functions are possible with the growth of soya beans

The following are highlights from a 2018 survey of soya farmers who sold to Silverlands:

- Incomes from soya increased nine-fold since the Silverlands investment (from \$50 to \$490 per year)
- 4x increase in average farmer production (from 0.3 t to 1.2 t)
- 1.4x increase in area allocated to soya (up to 44% of farm area)
- An estimated increase in maize yields from 2-2.5 t/ha to 3.5 t/ha. This implies a ~50% increase in yields, 50% more tonnes and therefore 50% more revenues.

This is an extraordinary step function demonstrating the substantial impact that can be achieved in relatively little time.

#### Huge increases in soya bean production

The annual production of soya has increased significantly, from almost nothing in 2014 to 4,000 tonnes in 2018 grown by ~8,000 smallholder farmers in this corner of Tanzania. The availability of soya in southern Tanzania has stimulated interest in the region, with buyers from neighbouring countries now purchasing Tanzanian soya. Silverlands is now just one of the buyers and will purchase ~2,000 tonnes from almost 4,000 farmers in 2019.



“Soya it is so special crop, because once you compare it with other crops, the price of soya is higher.”

Soya is a typical for women because the cost of producing soya is so cheaper compared to other crops.

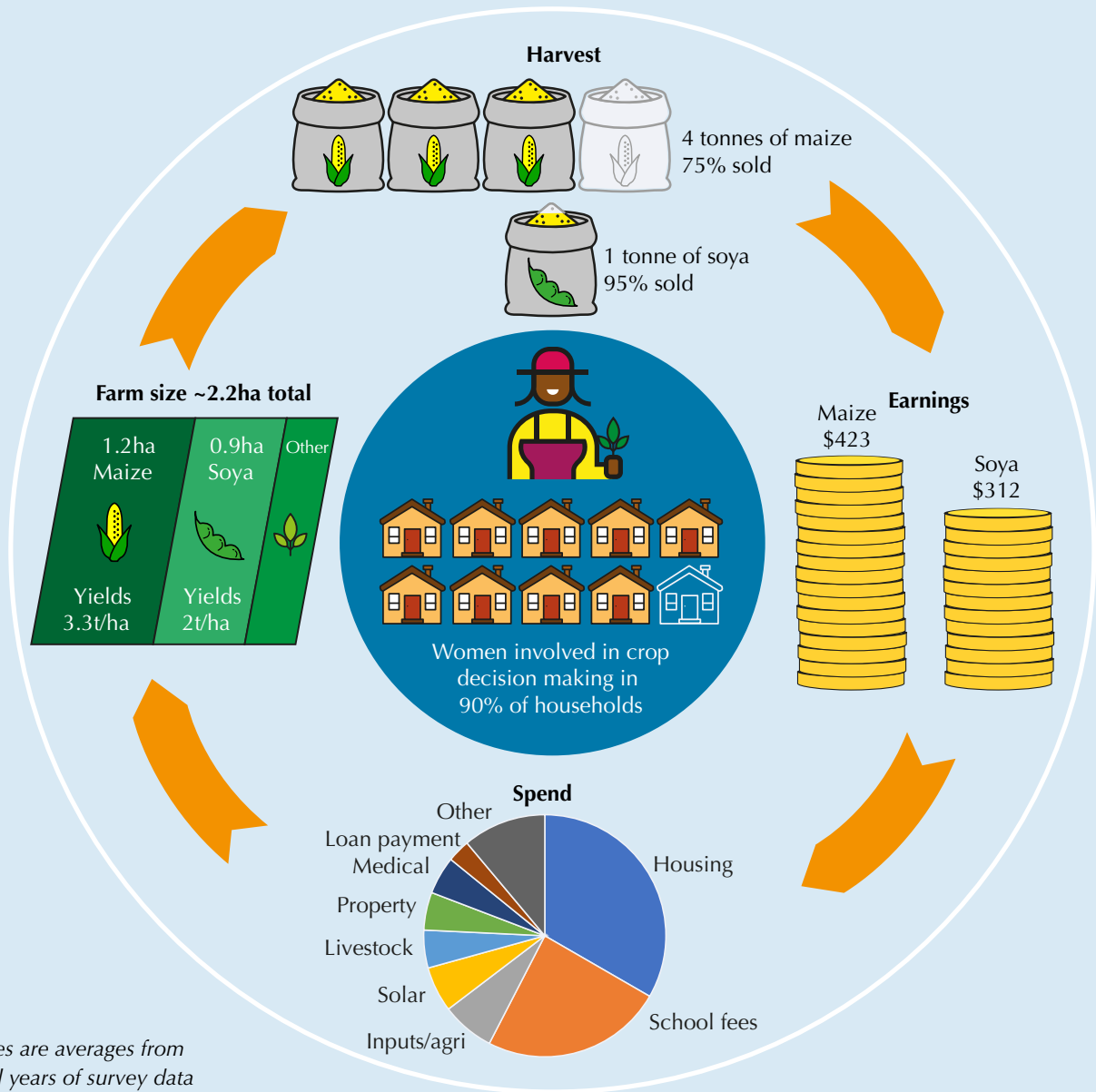
Once they get their cash from selling soya bean, most of them are generating to other economic activities like gardening and so forth.

*James Noel - Monitoring and Evaluation, Caritas*



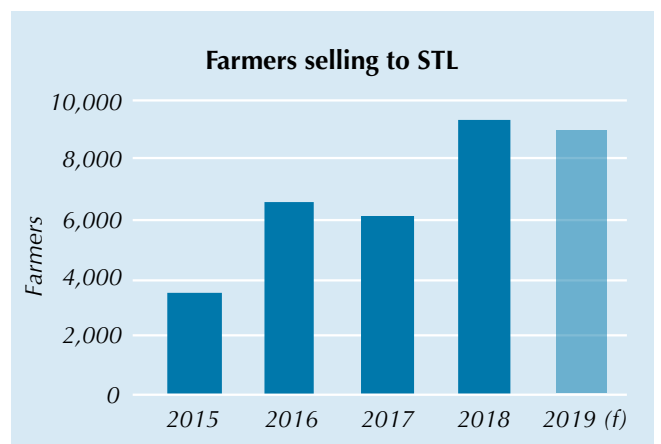
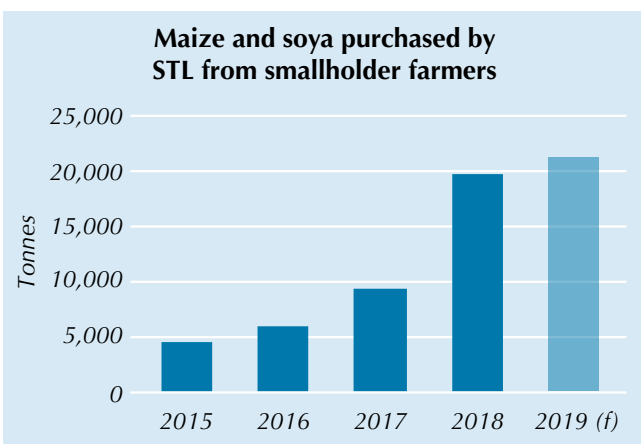
### Profile of a Tanzanian smallholder grain farmer

To better understand and work with smallholder grains farmers the NGO Caritas has helped with surveys of smallholder farmers in Tanzania's southern corridor. The surveys include questions on cropping areas, crop mixes, yields, incomes from cropping and areas of need. The below profile summarises data from 2018 and 2019 Caritas surveys.



\*Figures are averages from several years of survey data

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\*The farmers selling to STL have been re-stated for previous years to account for farmers who sell both maize and soya.

### Maize: Important for smallholders, important for Silverlands

Over half of each smallholder farm is planted to grow maize (~52% of farm area but can be as high as 70% if farmers have not received training in crop rotation). Maize will continue to generate an important portion of the income for many smallholder grains farmers.

Maize is also a key ingredient in poultry feed. Silverlands Tanzania's maize purchases from smallholder farmers is around 20,000 tonnes this year, grown by 9,200 farmers. With the ongoing dramatic increases in production at the feed mill, from zero in 2014, to a forecasted 37,400 tonnes of feed to be sold this year, maize purchase volumes are expected to continue to rise steeply.

“People are changing their life. For instance, before coming of the Silverlands, farmers selling their produce at a low price. But once Silverlands came in Songea, farmers sold their produce at better price.”

*James Noel - Monitoring and Evaluation, Caritas*

### The value of Silverlands Tanzania's market

Each year, farmers must decide which and how much of each crop to plant. They are hedging on the weather, future prices, market availability, and are limited by how much they can spend on inputs and which inputs are even available. The implications of these decisions have a real impact on farmers' lives, such as whether they can afford school fees.

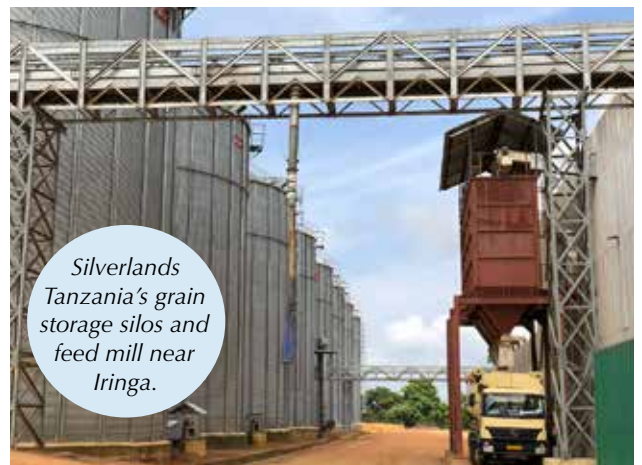
In mid-2017, partly due to food shortages in some areas of the country, the Tanzanian government placed an export ban on maize and other cereals, creating marketing challenges in the southern highlands. Without proper storage facilities, farmers lost some of their harvests. The export ban has since been lifted, but this market hiccup shook farmers' confidence in growing maize. The following year, farmers planted less, applied less fertiliser, produced less, and earned less.

Silverlands Tanzania, directly and indirectly, supports smallholder farmers through these challenges by:

- 1 Providing a market;
- 2 Facilitating access to inputs;
- 3 Providing training to farmers in conservation farming methods, crop rotation and hybrid seed; and
- 4 Setting up a warehouse receipt programme to help solve the issue of storage.

### The next step: Grain storage

37% of food is lost during handling and storage in Sub-Saharan Africa compared to 6% in North America ([World Resources Institute, 2013](#)). This is one of the most significant problems for smallholder farmers. Storage facilities in rural areas tend to be poor, and ~30% of harvests are potentially lost as a result, forcing farmers to accept typically low prices at harvest time. Solving this could add significant profits for farmers and improve food security.



*Silverlands Tanzania's grain storage silos and feed mill near Iringa.*

### The warehouse receipt programme

To help provide safe and dry storage so smallholder farmers can reduce losses and sell when crop prices are more attractive, Silverlands is implementing a Warehouse Receipt Programme in Southern Tanzania. This project has the support of Caritas, the East African Grains Council and a \$160,000 grant from Danida (the Danish Ministry of Foreign Affairs), via the Danish Investment Fund for Developing Countries (IFU), along with Silverlands Tanzania's commitment of \$110,000.

The programme depends on farmers working in groups and bringing high quality grains for storage. There are three components:

**1 Farmer group formation**

Farmers work together in Agricultural Marketing Cooperatives (AMCOS), which facilitate the amalgamation and quality checking of grains. An added benefit of the producer groups is the ability to form a collective and therefore enable cheaper purchase of inputs. Caritas formed and registered five AMCOS in 2018, with a total membership of ~8,000 farmers. This year training is ongoing, with the consolidation of procedures so groups function efficiently and effectively.



**2 Training on post-harvest handling of maize and soya beans: grading and moisture content**

It is essential grains are only stored when they are properly dry. Maize stored above 14% moisture is prone to insect damage and more likely to be affected by mycotoxins such as aflatoxin (which causes liver cancer in humans and animals). Training is provided to farmers on the need for proper drying of grains and moisture meters are used for quality checks during purchasing.

**3 Training in good agricultural practices**

To improve smallholder production of maize and soya beans, farmers are taught the benefits of good agricultural practices using demonstration plots. Improved agricultural practices include: crop rotation; conservation farming techniques (i.e. composting, mulching, precise placement of inputs, planting in lines and timing of planting); and utilising improved maize and soybean varieties. 22 demonstration plots were planted in 2018 and will continue into 2020.

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*Smallholder farmers from the Amani Makolo Village, Mbinga, Tanzania, after a training session with Silverlands and Caritas.*

“Before farmers produced with no education, especially in planting, using spacing, using recommended fertiliser, and timely weeding. Due to this project they have gotten that education on how to produce in a proper way.”

*Maziku Shalua - Field Extension Officer, Caritas*

**Georgina Mbawala - Director of Caritas**

*“Smallholders farmers benefit a lot through being members of the AMCOS. They can get inputs with discount rate. They can sell large volume and they get a better price from Silverlands as compared to individual farmers selling it to traders.”*



Article from IFU (Danish Government) website



INVESTMENT FUND FOR  
DEVELOPING COUNTRIES

5 September 2019

## IFU SUPPORTS SMALLHOLDER DEVELOPMENT

In Tanzania, the Silverlands fund has established a cropping and livestock operation aiming at developing and expanding markets for local small-scale farmers. This includes training, purchase of local crops and selling quality feed and day-old chicken for local breeding. To improve the outcome of the small-scale farmers, Silverlands has set up Agricultural Marketing Co-operative Societies (AMCOS), which is supported financially by IFU.



In the Njombe and Iringa regions of Tanzania, Silverlands produces cropping and livestock at the Ndolela, Makete and Selous farms as well as poultry and feed milling at the Makota and Iganga farms.

In recent years, Silverlands has invested heavily in the farms, including infrastructure, irrigation, expansion and introduction of new crops. Moreover, a new breed of chicken has been introduced. Today the farms employ close to 1,500 people.

The wider impact vision is to facilitate an increased domestic production of crops and poultry. At the core of this vision is the development and expansion of markets for local small-scale farmers, including training programmes in production techniques for small-scale crop and poultry farmers.

To achieve this, Silverlands Tanzania Ltd. has partnered up with the local NGO, Caritas, which is assisting in setting up Agricultural Marketing Co-operative Societies (AMCOS). The main purpose of forming these societies is to facilitate market access and connect smallholder farmers to the Electronic Fiscal Devices (EFD), which is a government requirement for selling produce. The connection has been financed by Silverlands.

### IFU is supporting training

IFU has supported the set-up of five AMCOS for smallholders around the Silverlands farms by offering a training grant of DKK one million.

This means that since May 2018, Caritas has conducted several training sessions for smallholders in the area. So far, more than 8000 farmers have been involved, of which half are women. The farmers have around 1,6 – 2,5 hectares each, and training is offered free of charge.

## Article from IFU (Danish Government) website continued ...

The training programme includes modules such as:

- 1 Land preparation
- 2 Time for cultivation, lay-out (proper lines and rows), spacing, fertilizer application, and planting of new seeds: beans, yellow maize, sunflower
- 3 How to weed (you loose 30% of your yield if you do not weed)
- 4 Scouting for diseases
- 5 Visits to demo plots
- 6 Post-harvest management
- 7 Learn and appreciate the importance of proper post-harvest management
- 8 Understanding the entire process and what is required to have a good harvest
- 9 How to dry produce properly.

### Based on Conservation Agriculture principles

The training is based on Conservation Agriculture (CA), which is defined as a sustainable agriculture production system comprising a set of farming practices adapted to the requirements of crops and local conditions of each region. The farming and soil management techniques protect the soil from erosion and degradation, improve its quality and biodiversity, and contribute to the preservation of natural resources, water and air, while optimizing yields.

Conservation Agriculture includes three core principles:

- Minimum soil disturbance
- Maintenance of permanent soil covers
- Cropping system diversity, crop rotations.

The advantages for the smallholders of the programme are that they:

- Get access to lower prices on input (seeds) and better-quality input, sold by Silverlands, which is introducing new and better seeds
- Better yields because they have a better understanding of how to grow their crops
- Now have different crops, which helps them when prices fluctuate/vary
- Better prices because the AMCOS set-up provides collective bargaining so the individual farmer does not have struggle on her own
- Have access to a bigger market and do not have to sell through middlemen who often destroy marketing systems.

### Smallholders selling 8000 tonnes

Through Caritas, the farmers meet with Silverlands, which hopes to off-take at least 8000 tons of maize and soybeans from the small-holders if they can keep up the quality. Furthermore, Silverlands is setting up a system to provide storage services issuing warehouse receipts at a very low cost.

Farmers have also had various field visits to Ndolela to learn good agricultural techniques for improving yields. This engagement will be strengthened further over the next year.

### To continue without support

To get further insight, a baseline study has been done, and in a year's time, when the external financial supports ends, it is the ambition that the AMCOS project can continue to create results.

Full article here: <https://www.ifu.dk/en/news/ifu-supports-smallholder-development/>

## 5.4 Tanzania: Working with Poultry Farmers

Silverlands Tanzania aims to develop the poultry industry and improve health and nutrition by providing productive poultry breeds, high quality feed and training. The business sells day-old chicks and poultry feed to farmers across Tanzania, distributing hatching eggs regionally. Women make up 80-90% of smallholder poultry farmers in Tanzania and are the primary beneficiaries of the project.



Silverlands sold 7.1 million day-old chicks in 2018, up from 4.5 million the year before and zero in 2014. Sales are on track to achieve 10.3 million this year, these chicks being sold to smallholder farmers for rearing as layers or broilers. Key to Silverlands' success has been the introduction of the Sasso breed that matures relatively quickly compared to traditional village chickens but is robust enough to cope with free-range environments typical of smallholder poultry farmers. The business has exclusivity on the Sasso breed in Tanzania.

Training and extension services are invaluable to smallholder poultry farmers whose productivity and profits can increase substantially by following correct procedures. Silverlands Tanzania built a poultry training centre to provide in-depth training to farmers. 34 extension officers provide technical support and on-the-ground training across the country. This extension work is assisted by a \$3.6 million grant from the World Poultry Foundation, allocated to Silverlands Tanzania in January 2017.



### Quality feed

High quality poultry feed is crucial for efficient poultry production. Most chicken feeds available in Tanzania are poor quality and there are limited control measures surrounding feed quality ([Poultry Subsector in Tanzania, 2018](#)). In contrast, Silverlands Tanzania's feed formulations are specially designed by a professional international nutritionist to align with the breed standards and all feed is quality tested in a laboratory. A range of feeds are produced for the varying energy and nutritional requirements of birds of different ages, breed and purpose (egg-laying or broilers).

An important differentiator is Silverlands Tanzania's production of pellets, which tend to produce better food-conversion ratios. With pecking mash, the smaller granules containing vital nutrition may be missed, whereas with pellets chickens receive all the important micronutrients and proteins in a single pellet.

### Quality control laboratory

Quality control is essential for maintaining product excellence. There are no testing laboratories close to Silverlands Tanzania, so last year the business established its own facility for testing the quality of inputs and every batch of feed produced.



“Our Silverlands feed is good because we analyse, and we test before we send to our customer. Our customers are happy because they get quality feed.”

*Theresa Joseph Paolo*  
- Quality Control Laboratory Technician

**Tito Matonya - Brooder Unit Owner**

Tito runs a brooder unit and is a self-proclaimed Sasso representative. When we spoke to him, he was rearing his second flock. The profit he had made was encouraging him to expand his business. He primarily spent his earnings on his daughter's education, and they also contributed to a solar panel and TV.

He was particularly excited about the performance of Sasso, saying the chicks' uniformity and body weights were very good. Part of this he attributed to Silverlands Tanzania's feed. According to Tito, *"Silverlands' feed is very good, and I want to tell people to use it"*.

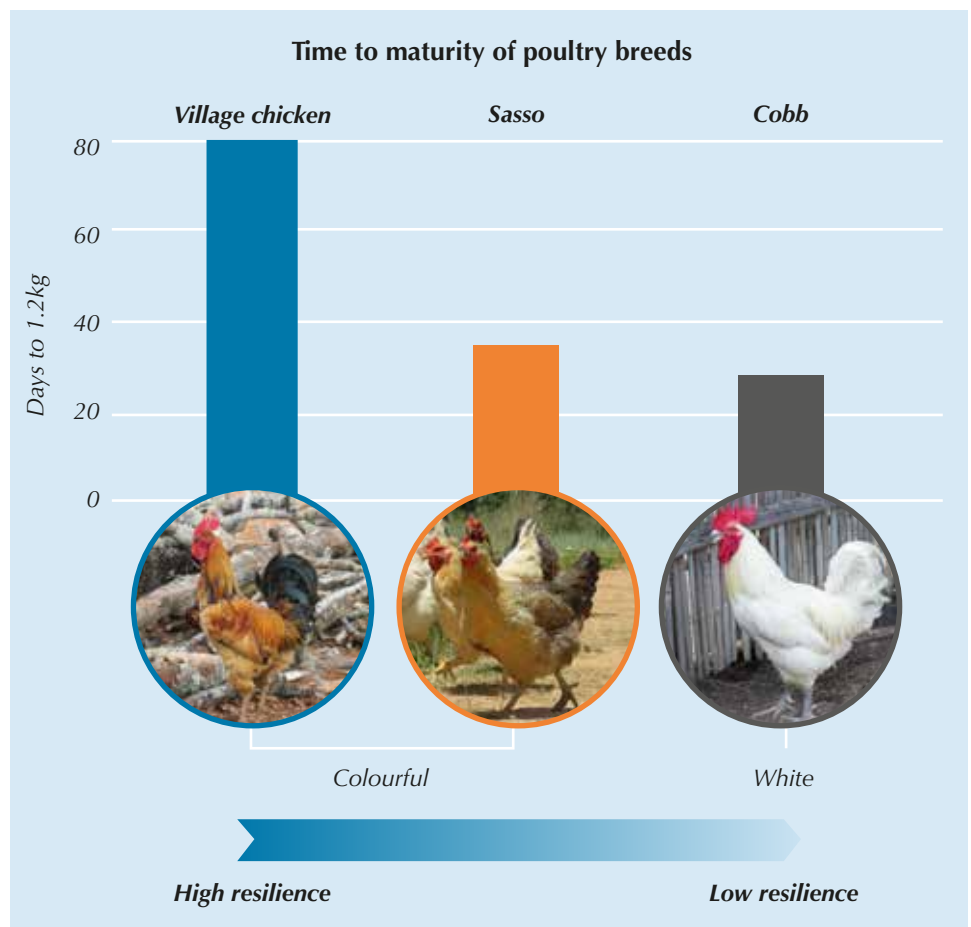


**Sasso: A breed with better food-conversion ratios**

Chickens have been bred to maximise different efficiencies and can vary widely in colour and look. Broilers grow rapidly and are bred for meat production, and layers produce high numbers of quality eggs.

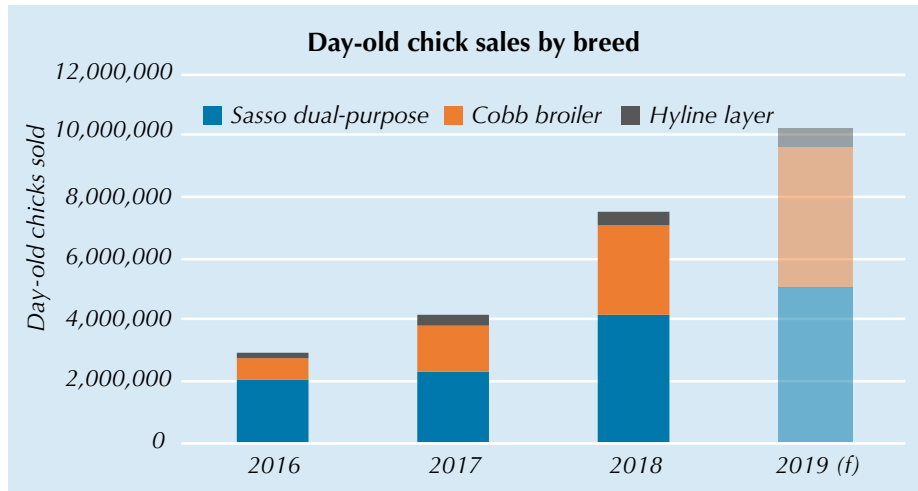
Silverlands Tanzania is the exclusive breeding agent for Sasso poultry in Tanzania, a breed originally developed in France. This Sasso breed has multiple advantages: it is a 'dual-purpose' bird that can be used both as a broiler for meat or for laying eggs, performing well both in terms of time to maturity and egg production. This flexibility greatly helps smallholders manage changes in demand and fluctuating poultry prices. Comparatively, most modern breeds are focussed on either meat or eggs, not both.

The colourful Sasso is preferred within rural Tanzania where traditionally chickens are multi-coloured. It is also generally more resilient to the local climate, pests and diseases, in comparison to a 'normal' broiler such as the Cobb or Ross (used widely in the West) which are typically not adapted to a free-range environment. The Tanzanian market is very particular on taste too. In blind-tastings by 400 people, 73% preferred Sasso over the Ross broiler.



Chickens are considered full size at about 1.2 Kg. Traditional village chickens take about 80 days to reach this size, compared with 28 to 35 days for breeds sold by Silverlands. As a result, farmers feed their poultry for shorter periods of time, saving on feed and improving smallholder farmer profits.

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**New disease diagnostics laboratory**

Silverlands Tanzania was recently approached by veterinary drug company Zoetis to partner in developing a poultry disease diagnostic laboratory. The aim is to help control poultry disease in Tanzania, starting by developing a poultry disease map for the country. Disease diagnostics is open to all poultry farmers. Extension officers will provide technical services to farmers and collect necessary samples for laboratory testing that includes a capability to test for ruminant diseases. The facility should be up and running by the end of 2019. This is yet another initiative that establishes Silverlands as a poultry centre of excellence in Tanzania.

**Training poultry farmers**

Silverlands Tanzania provides training and support to poultry farmers in multiple ways:

- 1 Silverlands Tanzania poultry training centre
- 2 Silverlands Tanzania extension officer home-visits
- 3 Silverlands Tanzania extension officer on-the-ground group training sessions
- 4 Advice and support via the Silverlands Tanzania website, Facebook page and phone

**Poultry training centre**

The poultry training centre runs five-day courses for poultry farmers some of whom travel across Tanzania to attend. Over 600 poultry farmers have attended such courses, 46% of which are women. The majority of the trainees (76%) have attended the course on brooder unit management. The courses combine theory and hands-on practical work.

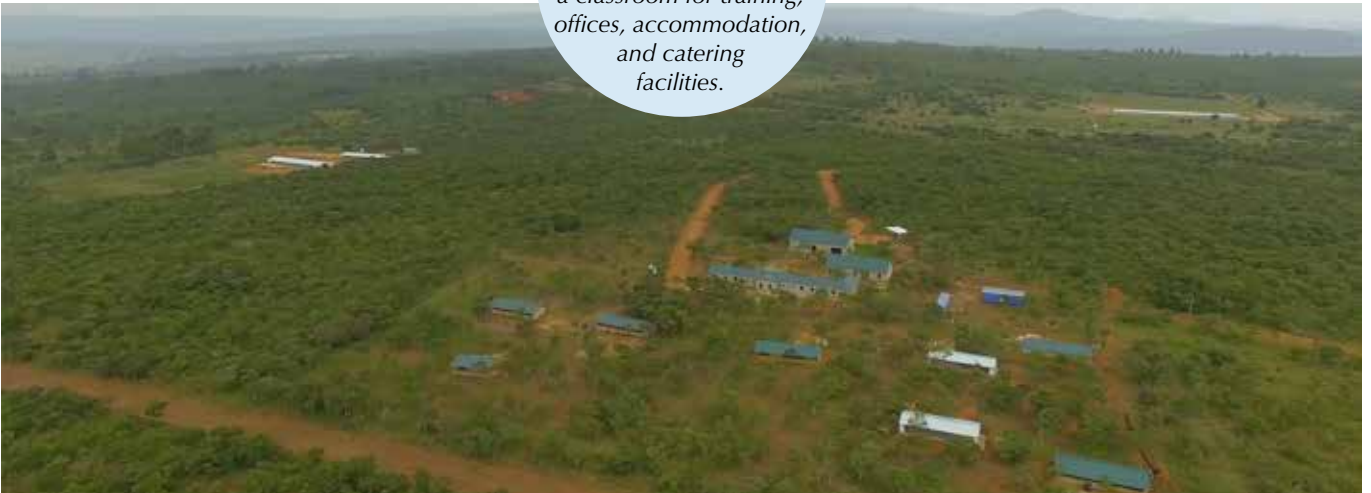
Courses focus on specific types of poultry breeding:

Course	Focus	Number of attendees
<b>Brooder unit management</b>	Rearing day-old chicks to 3-4 weeks for sale to other farmers. The most difficult phase of chicken rearing is up to three weeks.	~450 (76% Female, 24% Male)
<b>Broiler</b>	Rearing day-old chicks or brooders up to 4-6 weeks and then selling for meat.	~20 (46% Female, 54% Male)
<b>Layer</b>	Rearing egg laying hens. This includes egg handling and hygiene.	~20 (46% Female, 54% Male)
<b>Poultry production</b>	A general course covering all the best practices of poultry rearing.	~100 (46% Female, 54% Male)





*Silverlands Tanzania's poultry training centre includes multiple poultry houses, a classroom for training, offices, accommodation, and catering facilities.*



Our Hub Out-grower Projects

All courses include the following basic principles, for successful poultry rearing:

Poultry management	Hygiene	Business management
<ul style="list-style-type: none"> <li>• House design</li> <li>• Brooding</li> <li>• Feed</li> <li>• Water</li> <li>• Vaccination</li> <li>• Environment management</li> </ul>	<ul style="list-style-type: none"> <li>• Cleaning and fumigation</li> <li>• Biosecurity</li> <li>• Bird health</li> </ul>	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Record Keeping</li> <li>• Marketing</li> <li>• Finance Management</li> </ul>



*Trainees learn the value of and how to administer oral vaccinations to the chicks through drinking water, identified by a blue dye.*



**Gloria Peter Njau - Veterinarian under the APMI project**

*“The thing I enjoy most about my job is when I visit the farmers and see what exactly is happening and if they are following what we have been training them at the training centre. Sometimes there are mistakes, but most of them really try to follow what they have been trained.”*



**African poultry multiplication initiative**

The African Poultry Multiplication Initiative (APMI) is a project run by Silverlands Tanzania with a \$3.6 million grant from the World Poultry Foundation (WPF). The aim of the project is to increase poultry production by women across Tanzania, with the overall vision of stimulating rural income growth.

**Brooder units**

To ensure that day-old chicks survive their first vulnerable 28 days, they are reared in brooder units. Specially trained farmers run these units after attending courses at the Silverlands Tanzania poultry training centre which is funded by the APMI. Silverlands Tanzania extension officers provide ongoing technical support. The brooder farmers sell healthy four-week-old chickens to others in the area for use as layers or broilers. Thus far, over 450 farmers have attended the course on managing brooder units, 45% of whom are women. Over 200 of the 533 registered brooder units have reared more than one flock.

**Agri-wallet loan facility**

Limited capital restricts some farmers’ ability to start brooder units. A project is being trialled to link smallholder farmers to a loan facility, provided by the Rabobank Foundation. The World Poultry Foundation are de-risking the project, and Silverlands Tanzania is providing on-the-ground checks and farmer support.

**Silverlands’ team of extension officers**

Silverlands Tanzania has a team of extension officers operating across Tanzania who provide services to poultry farmers during home/farm visits and group training sessions. The team consists of a project manager, sales assistant, veterinarian, 17 technical advisors and 17 gender specialists.



*Silverlands Tanzania extension officers conduct home/farm visits with smallholder poultry farmers.*



*Some training sessions are held in community groups. Silverlands Tanzania is developing specific training tools to use in these kinds of training scenarios.*

Our Hub Out-grower Projects

**Meeting the needs of female smallholder poultry farmers**

Women make up 80-90% of smallholder poultry farmers in Tanzania, most with flock sizes of less than 30 birds. With duties at home, women aren't always able to travel across the country and spend extended time away. Yet, these are the women who benefit most from the training and keeping poultry. To meet this need, Silverlands trainers have recently been given additional training on gender and nutrition to add to their existing technical poultry knowledge. Training tools specifically for under-the-tree type training sessions are being designed.

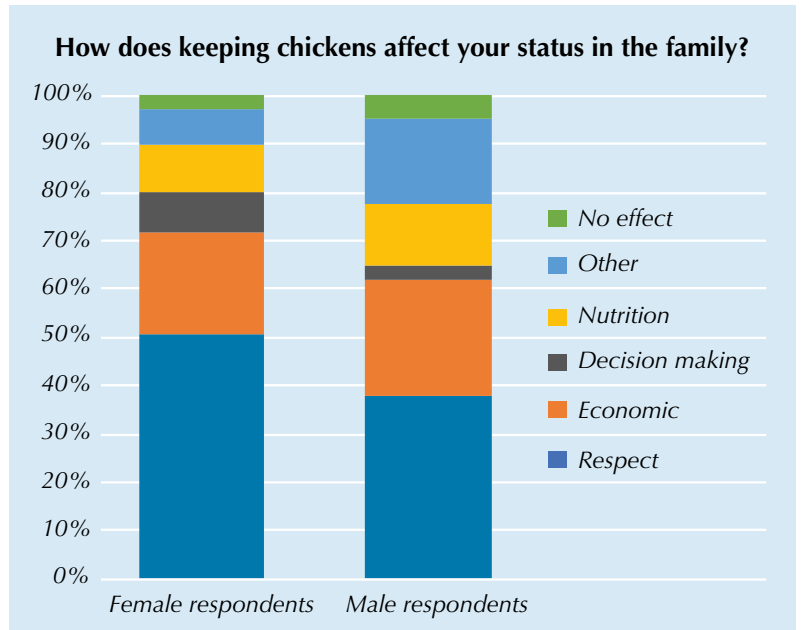
“ I am a new girl now. Look at my eyes, they are no longer red as I bought a gas stove. ”  
*Smallholder poultry farmer*

“ This chicken business has given us the right to sulk. Before, we always had to pretend to our husbands that we were happy, so they would give us money. Now we have our own money, and we can sulk if we want to. ”  
*Smallholder poultry farmer*

### Benefits of poultry to women

Women are typically disadvantaged in a rural setting. However, raising chickens is generally deemed women’s work, and they typically keep the profit from sales of eggs and birds. By focusing on poultry-rearing by women, it is anticipated that this project will benefit the productivity, income and nutrition of the whole household, and significantly empower women.

In a recent survey of smallholder poultry farmers, they were asked how keeping chickens (and the benefits that come with that) affects their status in the family. 50% of female respondents reported they are more respected by their family and 9% said they were now included in financial decision-making. These are huge steps towards empowering women in rural settings.



### Case studies

Many smallholder farmers employ 2-3 people, who are generally the sole earners in their families and who would otherwise not have work. These are examples of the additional jobs created within the sector because of this project.

#### Floriana Lisoba - Smallholder poultry farmer and entrepreneur

Floriana was introduced to poultry farming through Silverlands Tanzania’s APMI extension officers. After saving money from selling ice lollies, Floriana bought her first 10 Sasso chickens in March 2019. Although her husband, Charles, was not initially involved, he is now very proud of her, stating *“Sasso grow fast, so the income is also coming fast”*.

Due to the success of her chickens, and the profit she has made, Floriana has started another business selling fish. She and her husband set up their first bank account and are now saving for their children’s education.

Floriana said that Silverlands Tanzania were empowering the extension officers to empower her.

*“The eggs are many in Sasso. If you feed well, the eggs are everyday.”*



#### Mama Upendo Aaron - Smallholder poultry farmer

Upendo bought her first flock of broiler chickens in 2011 with money she saved from her job as a teacher. Since the initiation of Silverlands Tanzania she has used Silverlands feed and has expanded significantly. She now receives help from her husband. They currently keep 450 chickens that provide a net profit of ~TSH 700,000 p.a. (USD \$304). The income from selling chickens contributed to the purchase a new roof for their house, paying fees for improved schooling for their children and buying a car, which enables Upendo to travel directly to her customers.

The benefits are broader than just Upendo and her husband; two temporary workers help dress the chickens, creating a secondary impact in the community.

*“Silverlands is the best, you can’t find better feed”.*



### Jafary Kisumbe - Smallholder poultry and pig farmer

Jafary runs one of the brooder units in the African Poultry Multiplication Initiative (AMPI). Taking earnings from his first flock, he diversified his farm and began keeping pigs. Jafary is now raising a second brooder flock of 500 chickens.

His focus is his children and he plans to use his earnings to send them to better schools.

*"I have to invest in them".*

### Ruth Muganda - Smallholder egg producer

Ruth is a 3rd year law student and wanted a way to make some money while studying. She converted a building that was previously rented out as accommodation, to be suitable for poultry, by improving the ventilation. She is now planning to sell the eggs from the 220 Sasso chickens that she purchased from a brooder unit. Her earnings will go to further her studies at law school in Dar Es Salaam.



### Maselina Shangal - Brooder unit

Maselina teaches chemistry at a teachers' college and was managing her 5th brood of Sasso birds on the side when we met her. She's a diligent poultry farmer and from her first 3 broods of 1,000 birds each she profited Tsh1.4m (\$609) per brood. With her profits she's putting down instalments to buy some land.

## 5.5 Zambia: Working with Cattle Farmers

### Silverlands Ranching - Impact summary

Silverlands Ranching began in 2014 with providing technical assistance and cattle dipping in the communities surrounding the ranch, to reduce tick-borne diseases in cattle. In 2017 this expanded into purchasing cattle and sunflower from community members.

Last year we only reported on the ~1,000 farmers bringing their cattle to be dipped. This year, our reporting is more inclusive and the business has expanded. Over 28,000 cattle (a ~55% increase from 2018) owned by nearly 1,600 farmers are being dipped at the 28 SLIC dipping stations. Overall, nearly 8,000 smallholder farmers now benefit, whose annual incomes have increased by \$267 per person since before the project. This year's annual value-add to communities is nearly \$2.1 million.

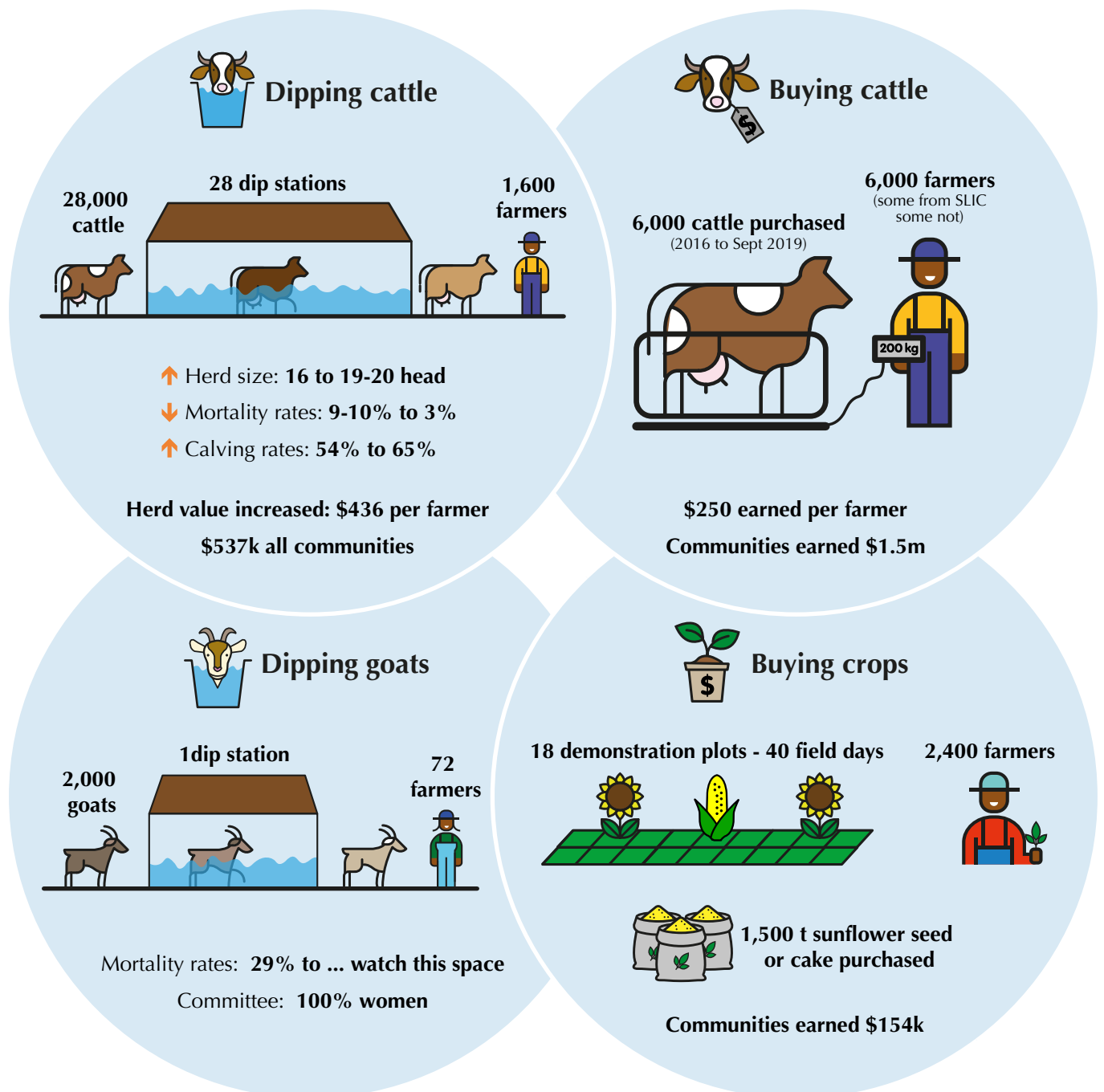
We anticipate greater impact as the business develops into the value chain. Plans are in progress to establish a joint venture with communities. Exporting beef will increase the price per head of cattle achieved, which will directly improve smallholder cattle farmer incomes.

Silverlands Ranching – Impact Summary

Impact group	Community participants impacted (#)	Increase in household income annually (\$ p.a.)	Value added to community annually (\$m p.a.)
Farmers dipping cattle	1,560	521	0.8
Farmers selling cattle to SRL	5,000	232	1.2
Farmers selling sunflower to SRL	2,012	52	0.1
<b>Overall total / weighted average</b>	<b>7,792</b>	<b>267</b>	<b>2.1</b>

\*The total for community participants accounts for farmers who both dip cattle and sell cattle to SRL.

Silverlands Ranching has created positive impacts on smallholder farmers via four initiatives:



### The business in summary

Silverlands Ranching and the SLIC programme demonstrate the hub out-grower model in action, benefiting both the communities and the business:

- The Silverlands 'hub' provides a market to smallholder farmers for cattle and grains, as well as ongoing technical support that improves cattle health and increases smallholder incomes.
- Silverlands benefits from the increased scale possible in the feedlots and processing, operations that both require scale.

The programme has a significant impact, yet its running costs are relatively low, and its low-tech nature is well suited to rural Zambia. Integrating SLIC into the business model is resulting in significant improvements in smallholder farmer incomes that will continue in the long-term. The programme continues to grow, focusing on:

- Increasing **access to a formal market** for community cattle and grains by expanding the feedlot and developing an abattoir and processing facility;
- Providing **technical advisory services** to cattle farmers at dip stations and grains farmers at demonstration plots;
- **Expanding the number of dipping stations** (ten new dip stations opened in the past year); and
- Facilitating **access to inputs** for smallholder grains farmers.

### Developing the Silverlands Ranching hub

The positive impact on the communities around the ranch continues to expand. Silverlands Ranching operates in the prime cattle-rearing region of South Western Zambia, where over 5,000 cattle are hosted on a 21,000 ha ranch. The original thesis when the ranch was acquired in 2014 was:

- To intensify the farm with cropping and irrigated pastures;
- To integrate up the value chain by adding feedlots and processing; and
- To work with surrounding smallholder farmers through an out-grower programme.

Construction of a large 13 million m<sup>3</sup> dam in 2014 allowed the planting of ~500 ha of irrigated pastures and crops to help feed the cattle and intensify farm usage. To develop the value-chain, a feedlot was built in 2016. This has successfully proven the model and helped provide a market for smallholder cattle farmers. There are now plans to develop an abattoir and processing plant to complete the beef value chain.



*Silverlands Ranching's 'hub' includes a new 13 million m<sup>3</sup> dam, cropping, workshop, silage clamps and feedlot.*



## Silverlands Livestock Improvement Community ('SLIC') programme

### History and establishment

Smallholder farmers in South Western Zambia rely on cattle for their livelihood. Crop production is inconsistent in this semi-arid region, and farmers depend on cattle as their 'bank', sold for cash when required. Without cattle these farmers would not have a means to support themselves.

In 2014, Silverlands consulted extensively with communities surrounding the ranch, establishing community 'Livestock Committees'. Consultation identified three main issues faced by the communities:

- 1 High cattle mortality rates due to disease (particularly tick-borne diseases);
- 2 A lack of operational dipping stations and no veterinary support; and
- 3 A limited market for cattle and high vulnerability to unfair traders (~40% of cattle transactions were between community members as there was no reliable market).



Smallholder farmers' need for a reliable market confirmed our thesis to develop a beef value chain. This also supported the business case because it meant the whole business could grow larger than if the value chain relied on off-take from Silverlands Ranching alone.

Prior to Silverlands' arrival, cattle disease was rife in the region. Frequent diseases resulted in high livestock mortality and low calving rates. Farmers had to travel long distances to sell their cattle or were subject to unfair traders.

In 2014, Silverlands established an extension service, hiring the first three 'Livestock Technicians' with veterinary training. These individuals helped the communities refurbish several non-operational cattle dipping stations in community areas. Prior to this, the communities had not been 'dipping' their cattle for 17 years. The project was named the Silverlands Livestock Improvement Community (SLIC) programme.

**“ I have got 23 cattle. We started dipping in August 3, 2016. On the construction of the spray race, Silverlands provided cement, iron sheets and the spray race itself. Then the community contributed labour, burnt bricks, building sand and some stones. ”**

**It is good that the community has a committee to run the affairs of the spray race. Because if anyone from the community has got a problem, they can complain through the committee can sit to solve that problem.**

*Godfrey Simbai - Committee Secretary, Lefalale Spray Race*



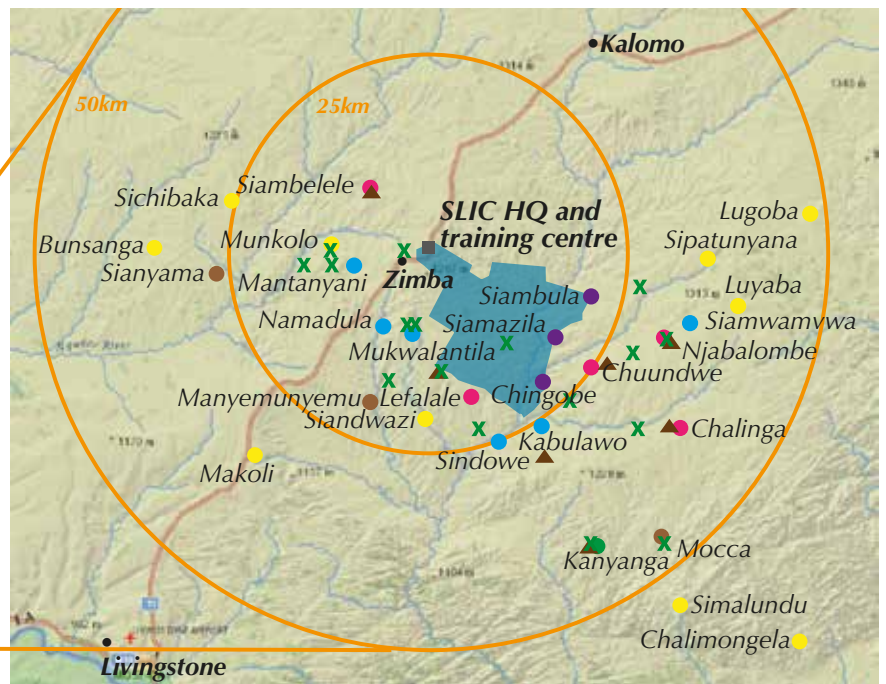
### SLIC footprint and operations

Silverlands has established dip stations, crop demonstration plots and sheds for distribution of inputs and storage of grains throughout communities surrounding Silverlands Ranching:

Dip stations opened in:

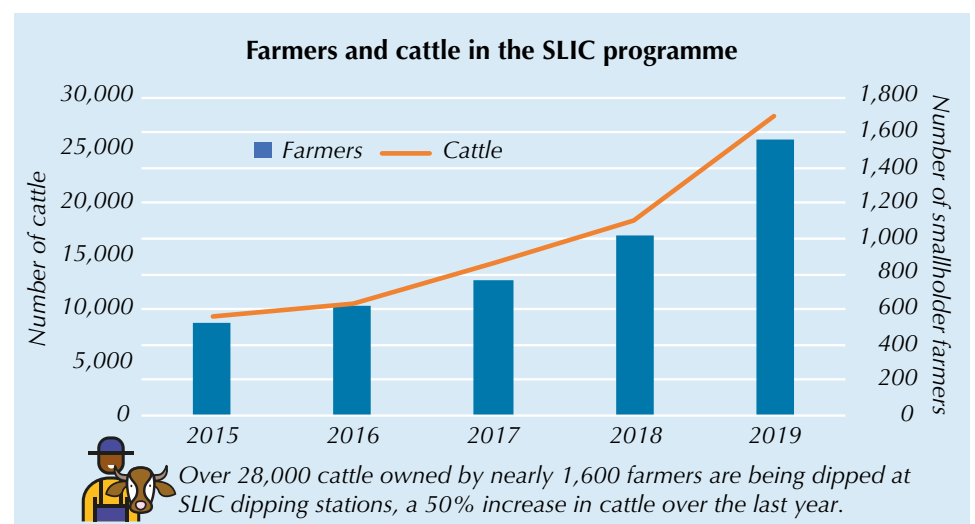
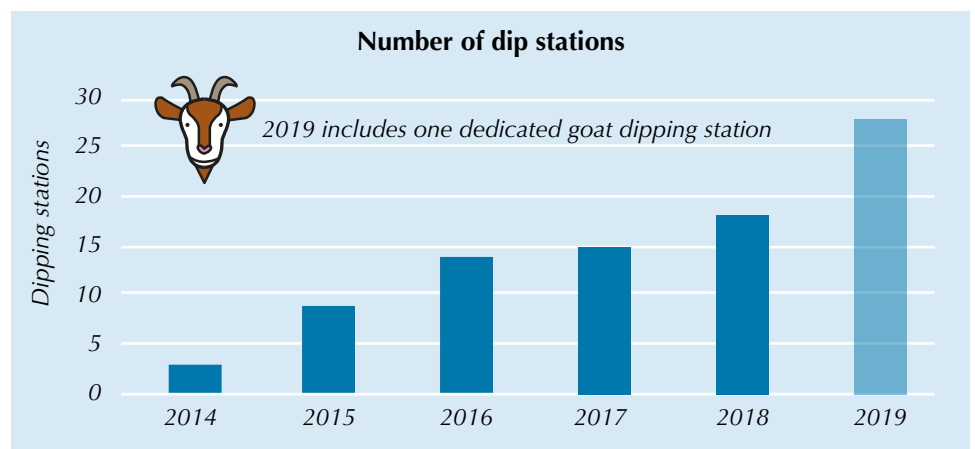
- 2014
- 2015
- 2016
- 2017
- 2018
- 2019

- Silverlands Ranching
- ✕ Demoplot
- ▲ Sheds



The SLIC programme has increased the number of dipping stations from zero to 28 in 4 years. This is ahead of the previous forecast that 28 dipping stations would be opened by the end of 2020.

Smallholder farmers immediately noticed the benefits of dipping and new communities continue to invite Silverlands/SLIC to refurbish old dip stations or set up new spray races where no dip station existed. Today, 28 dip stations are running, allowing ~1,600 farmers to bring over 28,000 cattle to the dips to get rid of ticks and accompanying diseases. There are sometimes 60,000 cattle ‘dippings’ a month, up from zero just five years ago, an impressive logistical feat.



Our Hub Out-grower Projects



*Smallholder cattle farmers bring their cattle for weekly dipping at the Mantanyani dip station refurbished by Silverlands and the Mantanyani community.*

**SLIC team**

SLIC's Livestock Technicians are trained in agrochemical handling and are present at every dipping day to manage the acaricide (pesticide targeting ticks), water levels and pH in the dip tanks. With veterinary backgrounds, the Livestock Technicians provide training in cattle management and assist with vaccinations, dehorning and other support when necessary. Expert veterinary advice is provided as necessary by Dr Moosa, the vet who oversees the Silverlands' herds.

The SLIC team consists of a financial controller, administrator, manager and eight Livestock Technicians. A learner centre has been constructed for hosting workshops and training sessions. Satellite housing facilities are also now established so Livestock Technicians can stay closer to the dip stations during the week, reducing travel times.



*Chipuya Simooya was hired in 2018 as the Assistant Administrative Manager to facilitate the expansion of SLIC.*

**Community control of dip stations**

Part of the success of SLIC is the ownership of dipping days by communities. Silverlands acts as an invitee in communities to provide technical support and advice. A community committee runs each dip station: tracking attendance, collecting fees, providing water and maintaining infrastructure. Dipping fees (ZMK 1.50 or \$0.11/head) fund the daily expenses of the programme so the dip stations are self-financing with all fee collection managed by the community itself.



*Community committees manage the dip stations – one of the key successes of the SLIC Programme.*



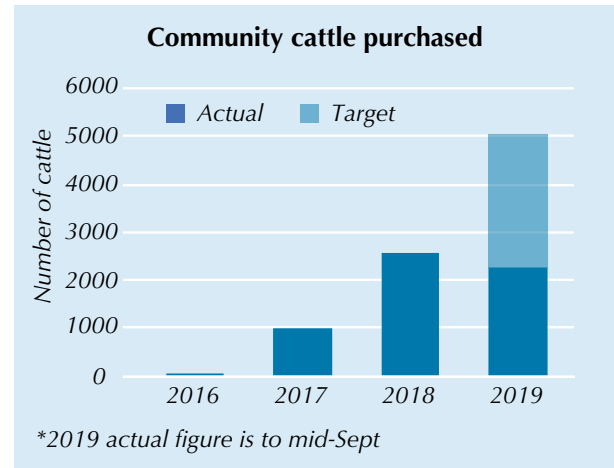
**SLIC integration into Silverlands’ hub and business model - cattle purchases**

Another success of SLIC is that the programme is fully integrated into Silverlands’ business model and both the Silverlands hub and smallholder farmers benefit. Community cattle are needed to help stock the feedlot. The business has grown from purchasing 53 cattle in 2016, to a target purchase of 5,000 head of community cattle in 2019. A total of almost 6,000 community cattle have been purchased thus far.

This market provides valuable income for smallholder farmers and the communities in the area. Between 2016 and September 2019, \$1.5m of funding has flowed into communities from cattle purchases.



*Silverlands’ transparent approach to community cattle purchasing is highly appreciated by smallholder farmers.*



*Community cattle are held in a feed pens prior to transfer to the feedlot, to assess their health and give them time to adjust to a fodder-based diet. More feed pens were constructed this year and all water troughs were upgraded.*

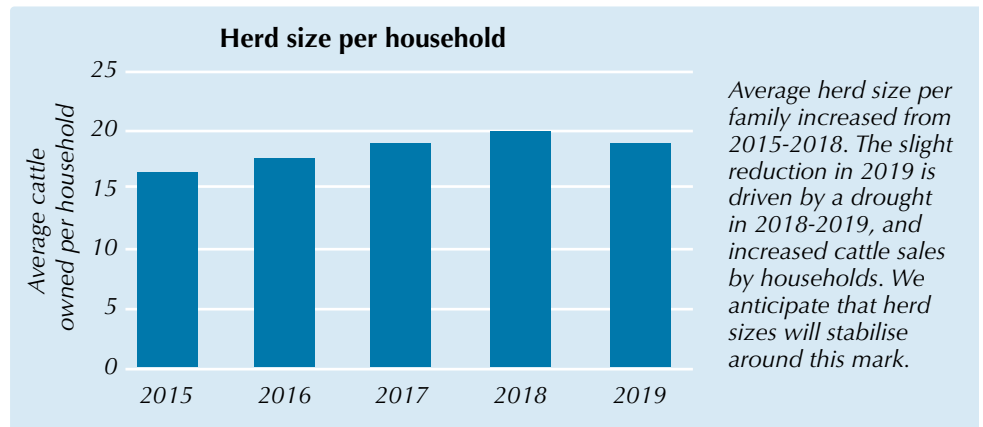
**Collaborating with NGOs – Musika and AgDevCo**

Silverlands partnered with the NGO Musika at the start of the project. Musika provided donor support, advice on implementation, and assisted with community surveys. Silverlands Ranching ran the day-to-day out-grower programme. To further expand on the achievements of the project, AgDevCo provided \$320k in donor funding through their Smallholder Development Unit for use over three years (2018 to 2021).

Our Hub Out-grower Projects

**The benefits for smallholder farmers - increased herd size**

The programme has resulted in remarkable improvements in the community herds. Average herd size per farmer has increased from 16 to between 19 and 20. Assuming a value of \$250 for each head, the total herd value for each farmer has increased by ~\$1,000 since the programme began, a substantial uplift in an area where average incomes are probably in the \$250-\$400 per annum range.

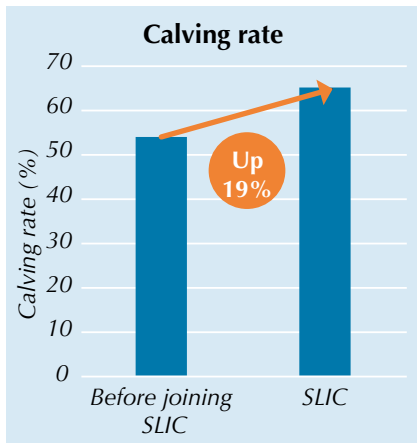
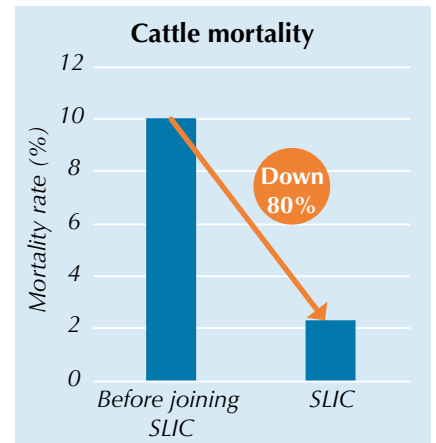


Average herd size per family increased from 2015-2018. The slight reduction in 2019 is driven by a drought in 2018-2019, and increased cattle sales by households. We anticipate that herd sizes will stabilise around this mark.

Accounting for the increase in herd size (resulting from improved mortality and calving rates), we estimate that each family has access to a potential additional income of ~\$436 per year (\$537k across the programme).

**Reducing mortality rates**

In 2012, before the SLIC programme started, 70% of households reported that their herds had been affected by cattle diseases. Cattle mortality rates in Zambia's Southern Province stood at 9.3% (Rural Agricultural Livelihood Survey, 2012). In 2019, before new herds joined the programme, mortality rates were 10%. Comparatively, mortality rates amongst cattle within the SLIC programme have reduced to 2.3% (an average over three years), implying a substantial benefit for these farmers.



**Improved calving rates**

Calving rates in smallholder herds improved 20% from 54% before joining SLIC to an average of 65% between 2016 and 2019. Calving rates have risen because cattle are healthier as a result of the dipping. More calves mean a greater income for farmers.



**Godfrey Simbai - Committee Secretary, Lefalale Spray Race**

*"We are very much thankful to Silverlands for joining a force with the community. They have really saved our animals. Before we started dipping, our animals used to suffer from many tick-borne diseases. But as we started dipping, most of the diseases are not showing up. We used to lose a lot of money trying to fight tick-borne diseases. Now the load is very light.*

*I prefer selling my animals to Silverlands because their buying there is very transparent. Now we are safe. We would like this project to have no end."*

### More than just dip stations

Dip stations have become important meeting places for communities in addition to the important role they play for cattle health. Each dip station has one dipping day per week, and community members often bring produce to sell or barter.

### Financial inclusion of smallholder farmers

SLIC management has been exploring options with financial institutions to make financial services available to smallholder farmers in the region, most of whom are unbanked. This would also provide a safe non-cash payment option for Silverlands purchasing cattle and grains from farmers.



#### Eugene Dondolo - Smallholder Cattle Farmer

*"I started dipping in 2016. The dipping it has made a difference: our animals have stopped suffering from tick-borne diseases, and we are able even to take our children to school. Just recently I have sold 13 cattle and have bought a house from that 13 cattle I've sold. This year there is drought. It is good to have cattle when there is drought, because those animals, the cattle, you can use to buy mealie-meal for your family. Thank you very much to Silverlands for the work they are doing to us."*

### Working with women - goats and crops

Cattle are traditionally owned and managed by men in the community, with women usually focusing on cropping and goats. Silverlands Ranching is working with women's groups to promote sunflower production, sell sunflower oil, and improve the health of goats. This work empowers women with knowledge and increased income, both valuable in a male-dominated society.

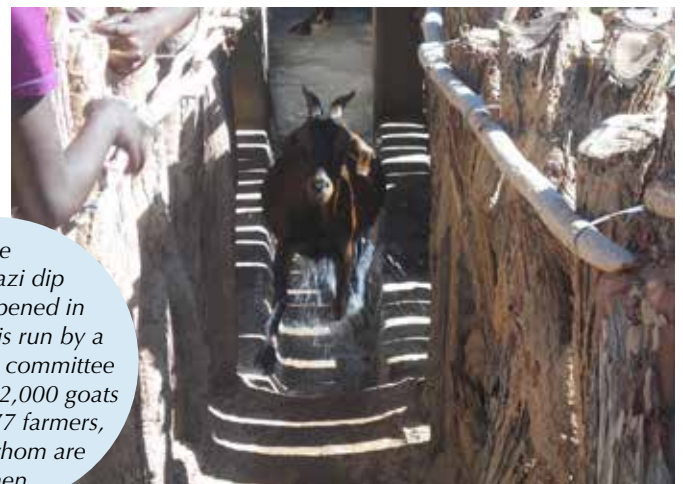
### A goat dipping station - benefiting women

SLIC helped build the Siandwazi dip station solely for goats and sheep. The station began dipping in April 2019. Located in an area with a high goat population, about 2,000 goats are brought for weekly dipping by 77 farmers (many of whom are women). Prior to dipping, it was reported that mortality rates amongst these herds of goats was as high as 29%. This project dove-tails with the work of the Canadian NGO Sustainability through Agriculture and Micro-enterprise (SAM) Project. The SAM Project works with smallholder farmers to improve the local goat breed, encourage proper herd health and management, and teach business skills.

In this area, those with more wealth own cattle whereas goats tend to be owned by those less privileged, most being women. As such, the facility is managed by a women-only committee. In addition to improving the health of their herds, these women will benefit from the transfer of organisational and management skills, animal husbandry and financial record-keeping.



*The Siandwazi dip station, opened in April 2019 is run by a women-only committee and services 2,000 goats owned by 77 farmers, most of whom are women.*



### Supporting smallholder cropping

Silverlands' hub has established a market for smallholder crops that are processed into cattle feed for the feedlot. Although livestock is the primary income source in this area, many smallholder farmers also grow ~3-4 ha of crops.

The SLIC team has established 18 demonstration plots throughout the surrounding communities. In the last year, 40 field days have been held at these plots with training focusing on:

- **Conservation agriculture methods** - These include minimum tillage, proper and timely land preparation, correct spacing, weed management, and using manure or compost.
- **Drought resistant crops** - The main crop grown is typically white maize (equating to over 70% of income according to a Silverlands survey). White maize performs poorly in dry climates and SLIC are introducing farmers to drought-tolerant crops such as sunflower and sorghum. Families can then spread their risk across a diversity of crops and benefit from the assorted nutrition they provide. Excess crops can be sold to Silverlands and others.



Women tend to focus on crop production. By providing training in conservation agriculture and a market for sunflower seed, Silverlands are empowering women in a typically male-dominated society.

To ensure correct messages are distributed clearly and effectively to smallholder farmers, workshops have been held with a local NGO, Conservation Farming Unit (CFU), and AgDevCo to train Silverlands' trainers.

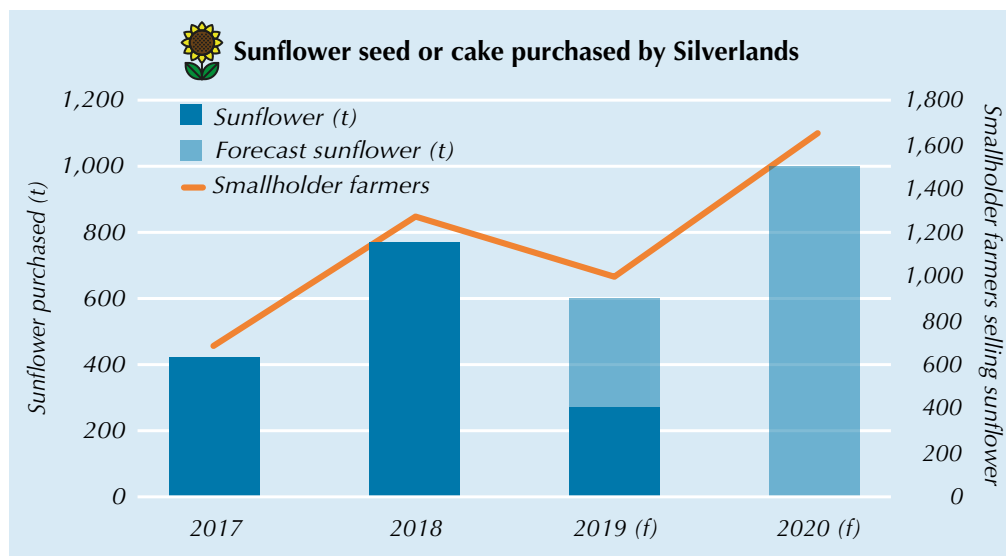
**“We have been encouraged by Silverlands to grow more sunflower, and sorghum. This is a good idea because they don't need a lot of fertiliser, and they are both drought resistant. Maize is no longer dependable because of the change in weather. We hope in the future we shall be producing a lot of sunflower and sorghum.”**  
*Godfrey Simbai - Committee Secretary, Lefalale Spray Race*

### Sunflowers - drought tolerant and good cattle fodder

Sunflower seed may be processed into cooking oil for human consumption and sunflower 'cake' for adding into cattle feed. Also, as sunflowers are well adapted to growing in drier climates, Silverlands has promoted it in demonstration plots and training. The number of farmers growing sunflower has now roughly doubled from 43% in 2014-2015 to 82% in the 2017-2018 season.

Survey results	SLIC farmers		
	2014-2015	2016-2017	2017-2018
Farmers growing sunflower (%)	43	81	82
Area cultivated (ha per farmer)	1.4	1.2	1.3
Sunflower: average production (t)	0.4	0.3	0.3
Sunflower: average yield (t/ha)	0.3	0.4	0.4
Farmers selling sunflower harvest (of farmers that grew sunflower) (%)	8	35	33
Volume sunflower sold (t)	0.12	0.25	0.24
Sunflower price achieved (K/t)	2,410	3,320	3,466
Average total income from sunflower (K)	506	927	988

Silverlands purchased 1,463t sunflower seed or cake between 2017 and September 2019, equating to \$154k of cash into the community. It is estimated this is grown by 2,400 farmers. In time the feedlot will have an annual sunflower requirement of about 1,000 tonnes, which will be purchased from ~1,650 smallholder farmers.



Silverlands Ranching is working with women’s groups in the Sianyama area to encourage entrepreneurship and improve nutrition. The women’s groups purchase sunflower oil from the project in bulk and sell it in smaller volumes in the community. This work is in conjunction with the NGO Sustainability through Agriculture and Micro-enterprise (SAM) project who have a nutritionist on their team helping to improve nutrition in the area.

**Aggregation points - input distribution and grain aggregation**

Silverlands Ranching have built seven sheds in communities, in partnership with Musika, to help with the distribution of inputs and aggregation of grains. Agro dealers use the sheds to sell fertiliser and seed, and farmers can store their grains in the sheds for sale to Silverlands. For the first time in decades, farmers have distribution points located near to them, reducing the logistical costs and difficulties of buying inputs and selling grains.

**2019 Survey**

A survey of smallholder farmers in the SLIC programme was conducted in June 2019 by independent Zambian consultants, Precise Research Solutions (PRS). (The survey period was from June 2018 to May 2019 and is referred to as “2019” for simplicity – similarly for previous surveys.)

**Education levels** are extremely low in the area. 51% of farmers have only primary school education.

**Access to veterinary extension services:** Access to veterinary services has greatly improved, resulting from the expansion of SLIC services in the area.

Smallholder farmers	2017	2019
Accessed veterinary drugs and services (%)	11	89
Received agricultural extension (%)	20	55
Received technical support related to livestock (%)	20	69*

\*most received this support via Silverlands Ranching.

**Frequency of dipping:** 98% of farmers dipped their cattle at least every two weeks: 71% of farmers dipped their animals once a week, and 27% every second week.

**Supplementary feed:** 47% of farmers gave their animals supplementary feed in 2019 compared to 23% in 2017. The most common feed was crop residue, given in May and June post-harvest.

**Weaning:** 34% of farmers weaned their animals in 2019 at an average age of 7.9 months.

Our Hub Out-grower Projects

**Cattle sales:** 24% more farmers are selling cattle (currently 54%, up from 30% in 2017). These households sell an average of three cattle annually. Only 33% of cattle are sold to Silverlands Ranching, hence a slightly lower average price per head (\$218) than Silverlands' Ranching purchase figures (\$232).

Cattle sales	SLIC farmers		
	2016	2017	2019
Farmers in the survey that sold cattle (%)	32	30	54
Average number of cattle sold per household	1.6	4	3
% of herd sold	-	10	7
Average price per cattle	\$253	\$259	\$218
Average total income from cattle per household	\$425	\$552	\$554

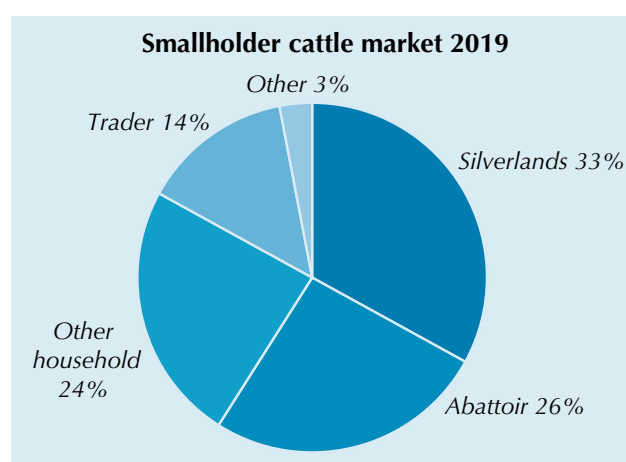
*\*Using exchange rate of 10 in 2016 and 2017, and 12.5 in 2019. No survey was done in 2018.*

**Reasons for selling cattle:** 52% of farmers sold cattle to finance domestic costs, and 23% to pay school fees. Other reasons for selling cattle included business and lobola (customary marriage payments).

**Health of cattle sold:** 88% of cattle sold were healthy animals. 7% were old, 4% were sick, and 1% were not breeding.

**Perceptions of Silverlands Ranching:** 99% farmers viewed the company positively, stating that Silverlands Ranching:

- Has good intentions in their engagement with farmers;
- Provides knowledgeable extension services such as dipping, deworming, dehorning, castration and vaccination;
- Provides a close-by market for crops and livestock and buy in cash; and
- Offers employment to locals.



“Silverlands does not discriminate on the provision of these services and is honest.”

*Smallholder farmer during the 2019 survey*



## 6 Other Impact

### 6.1 Economic Impact

Our investments bring food security, substantial jobs, export earnings and precious foreign direct investment to countries. Using our investments in Namibia as an example:

- Namibia is very dry with most land only suitable for game or cattle ranching.. Unemployment is extremely high at 33%. Agriculture employs ~41% of the labor force, with grapes and cotton being the main export crops. Silverlands Vineyards and Achill already employ ~2,000 people with this expected to grow substantially as the farms mature.
- Namibia has been relatively starved of foreign direct investment in recent years. Total FDI was only \$196m in 2018. Therefore the \$68m investment into Silverlands Vineyards and Achill is meaningful at ~35% of Namibia's 2018 FDI figure.
- Namibia's imports of goods and services are 47% of GDP and exports are only 37% of GDP. Businesses like Silverlands Vineyards and Achill greatly help to increase exports, bring in foreign currency and close this deficit.

### 6.2 Boosting Employment

Our portfolio companies are key employers in areas which are typically rural with little high-paid work available. Since making the investments, the number of jobs provided by our operations has materially increased.

Silverlands now employs over 6,900 people, almost a 50% increase from the number employed when the businesses were purchased (~4,700). Employment figures are shown below. Except for SVL, CBL and Achill, which were already large established employers, the number of people employed has increased by a multiple typically three- to four-fold of the original number. Reduction in employees at the Achill table grape operation in Namibia is due to the conversion to in-field packing. This requires slightly fewer seasonal employees during harvest yet has a significant positive effect on grape quality as they are only handled once. Employment at Achill is expected to treble from current levels once the expansion plan has been completed.

Most of the increase in employment has occurred in those countries that have lower average incomes per capita. If we exclude South Africa, Namibia and eSwatini/Swaziland, middle-income economies with a GDP per capita of ~\$5,500, then the balance of the portfolio is in Zambia, Tanzania and Mozambique, all countries with lower incomes per capita. In these countries, we have raised employment 3.7-fold, from ~690 to ~2,500.

#### Increase in employment

Portfolio company	Number of employees			
	At purchase	Current	Change	Increase
<b>Silverlands I</b>				
Silverlands Tanzania	248	816	+568	3.3 x
Silverlands Ndolela	78	643	+565	8.2 x
Silverlands Zambia	53	257	+204	4.8 x
Silverlands Agriculture Services	16	203	+187	12.7 x
Silverlands Ranching	86	240	+154	2.8 x
Silverlands Vineyards	1,104	1,445	+341	1.3 x
Crookes Brothers*	2,365	2,444	+79	1.0 x
Quinta da Bella Vista	4	67	+63	16.8 x
<b>Silverlands I total</b>	<b>3,954</b>	<b>6,115</b>	<b>+2,161</b>	<b>1.5 x</b>
<b>Silverlands II</b>				
Achill	555	520	-35	0.9 x
Zamseed	201	308	+107	1.5 x
<b>Silverlands II total</b>	<b>756</b>	<b>828</b>	<b>+72</b>	<b>1.1 x</b>
<b>Overall total</b>	<b>4,710</b>	<b>6,943</b>	<b>+2,233</b>	<b>1.5 x</b>

\*CBL numbers adjusted for farm sales and outsourcing seasonal workers.



### Joel Mnisi — Poultry Manager, Silverlands Tanzania Poultry

Joel began working for Silverlands Tanzania in 2015 after completing his field practical course at Silverlands Tanzania. With ambitions to work with chickens but little experience, Joel showed dedication and ambition. Since joining the business Joel has worked in rearing, production and the hatchery, giving him experience in all aspects of poultry production. He now manages the team at the rearing houses, demonstrating commendable career progression.

*"I wish to be someone, not just a normal manager, not just a normal guy. I have a small family. It's a poor family. When I look at my family, they give me strength to work harder. Because through this employment I give them life, because they eat, they go to school, everything."*

## 6.3 Boosting Salaries Through Expansion

By employing more people, particularly in technical positions, we put more money into the surrounding communities. Salaries have increased 1.6-fold since purchase and 3-fold when CBL is excluded, which was already well established at the time of investment. The payroll is now nearly \$25m for Silverlands I and \$3m for Silverlands II.

The increases in salary bills in Tanzania, Zambia and Mozambique are partly due to the large (3- to 17-fold) increase in employee numbers. Furthermore, salary increases are more magnified than the employment increases as the incremental jobs are better paid.

Using Silverlands Tanzania as an example, employment numbers have risen 3.3x. However, the jobs created are higher paid than those generally available in the area, as they involve technical skills including management of the processing plant and hatchery. Silverlands Tanzania's annual salary-spend increased from \$0.1 million per annum at acquisition to \$3.6 million per annum now, a period of six years. This staggering 30x increase has injected cash into the surrounding communities and has noticeably increased development in these areas, most prominently in housing and retail.

### Salary spend: up 3-fold

Portfolio company	At purchase annual salaries (\$ millions)	Current annual salaries (\$ millions)	Increase
<b>Silverlands I</b>			
Silverlands Tanzania	0.1	3.6	30.3 x
Silverlands Ndolela	0.1	1.4	15.7 x
Silverlands Zambia	0.1	0.8	10.3 x
Silverlands Agriculture Services	0.0	0.7	31.8 x
Silverlands Ranching	0.1	0.6	4.4 x
Silverlands Vineyards	1.6	3.8	2.4 x
Crookes Brothers	12.3	13.8	1.1 x
Quinta da Bella Vista	0.0	0.1	31.7 x
<b>Silverlands I total</b>	<b>14.3</b>	<b>24.8</b>	<b>1.7 x</b>
<b>Silverlands II</b>			
Achill	0.7	1.4	2.2 x
Zamseed	2.0	1.6	0.8 x
<b>Silverlands II total</b>	<b>2.6</b>	<b>3.0</b>	<b>1.2 x</b>
<b>Total</b>	<b>16.9</b>	<b>27.8</b>	<b>1.6 x</b>
<b>Total excluding CBL</b>	<b>4.6</b>	<b>14.0</b>	<b>3.0 x</b>

## 6.4 The Employment Multiplier Effect

Employing ~6,900 people has two main multiplier effects. Firstly, direct, indirect and induced jobs created as a function of each permanent job we create. (The 3x multiplier is for the agricultural sector in Tanzania, from an IFC jobs study.) Secondly, every employee's family benefits from their income. We have used a 4.4x multiplier here and the average family size from UN 2018 data for Zambia, Tanzania, Mozambique, South Africa, Namibia and eSwatini/Swaziland ([www.population.un.org](http://www.population.un.org)).

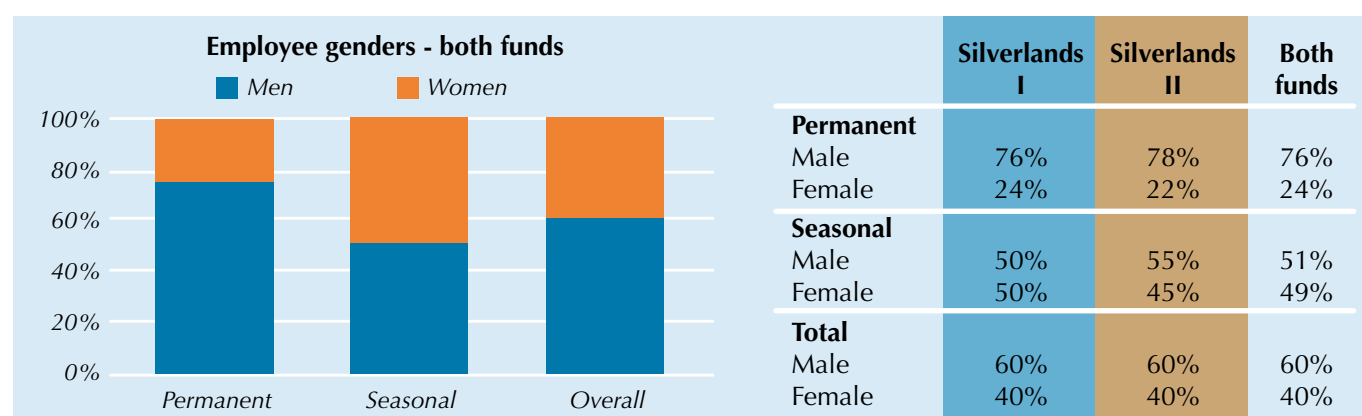
### We create impact through additional jobs created and household persons benefiting

Portfolio company	Employees			Job creation effect from employment	Household persons impacted	Total persons impacted
	Total permanent & seasonal	Permanent	Seasonal	Direct, indirect, induced jobs (3x perm. jobs)	Employment (4.4x total employment)	
<b>Silverlands I</b>						
Silverlands Tanzania	816	408	408	1,224	3,590	<b>4,814</b>
Silverlands Ndolela	643	200	443	600	2,829	<b>3,429</b>
Silverlands Zambia	257	161	96	483	1,131	<b>1,614</b>
Silverlands Agriculture Services	203	155	48	465	893	<b>1,358</b>
Silverlands Ranching	240	220	20	660	1,056	<b>1,716</b>
Silverlands Vineyards	1,445	164	1,281	492	6,358	<b>6,850</b>
Crookes Brothers	2,444	1,007	1,437	3,021	10,754	<b>13,775</b>
Quinta da Bella Vista	67	28	39	84	295	<b>379</b>
<b>Silverlands I total</b>	<b>6,115</b>	<b>2,343</b>	<b>3,772</b>	<b>7,029</b>	<b>26,906</b>	<b>33,935</b>
<b>Silverlands II</b>						
Achill	520	49	471	147	2,288	<b>2,435</b>
Zamseed	308	122	186	366	1,355	<b>1,721</b>
<b>Silverlands II total</b>	<b>828</b>	<b>171</b>	<b>657</b>	<b>513</b>	<b>3,643</b>	<b>4,156</b>
<b>Overall total</b>	<b>6,943</b>	<b>2,514</b>	<b>4,429</b>	<b>7,542</b>	<b>30,549</b>	<b>38,091</b>

Other Impact

## 6.5 Women in Our Workforce

Although agriculture is typically male-dominated, we employ a significant proportion of women. 40% of our total workforce are women, although there are more in the seasonal / temporary labour force (49%) than permanent staff (24%). Women tend to be better at those jobs requiring more care, such as handling fruit, caring for poultry, quality checking, scouting for pests, or de-tassling and de-cobbing maize. Also, many women have been appointed in key management positions. Hiring women continues to be a focus for each operation, and over time cultures are changing to allow women to leave their responsibilities at home and seek employment.





*“What I enjoy about Silverlands is they give me the different training paths. I learn every day when I’m working at Silverlands.”*

**Happy Ntendele, Vaccinator in the Silverlands Tanzania Hatchery**

*“At first the men didn’t accept me as a woman working at the dip station. Now they do.”*

**Billa Mweemba, SLIC Programme Livestock Technician, Silverlands Ranching, Zambia**

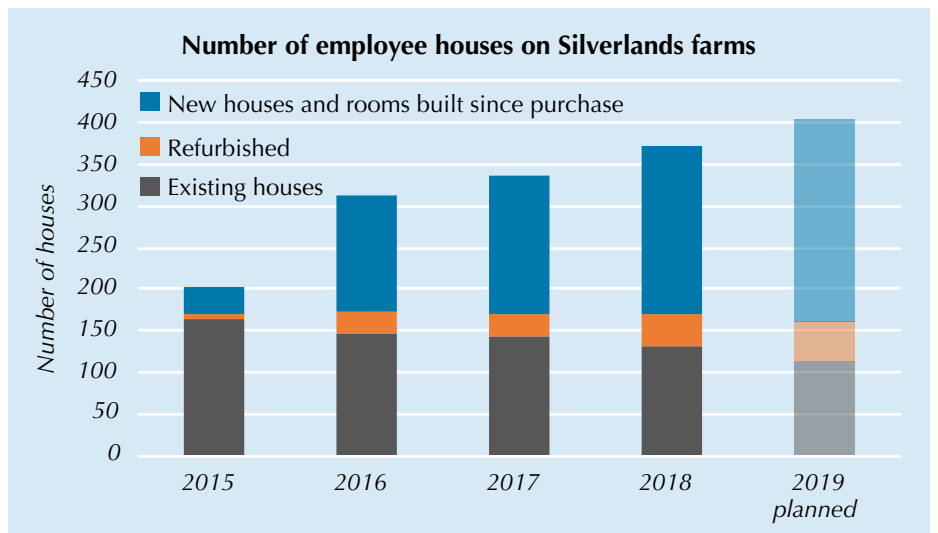


Women fill technical positions, for instance, **Kepha Kulanga** monitors the Silverlands Tanzania feed mill.

## 6.6 Improving Employee Housing

“The improvements to staff housing have notably improved employee buy-in and productivity.”  
*Mike Lennox, Workshop Manager, Silverlands Ndolela, Tanzania*

Employees’ productivity, happiness and wellbeing is better when they live in good housing in a pleasant environment. Generally, the Silverlands farms were not operational at acquisition. Of the limited housing available, most needed upgrading. Housing has thus been a priority focus for farm development. At the five Silverlands operations in Zambia and Tanzania, 291 houses have been refurbished or built over the last five years. This work has taken place alongside the construction of dams, canals, management hubs, irrigation systems and cropping development, which has been no small feat.





Examples of housing at Silverlands Agriculture Services in Zambia (left) and Silverlands Tanzania (right).



In remote areas, our employees need more than just housing. Silverlands Zambia has started a school for employees' children and built a clinic.



In Namibia, Silverlands Vineyards and Achill have opened a creche during work hours.

Other Impact

## 6.7 Skills Development

“People say Silverlands is good, because they have a lot of training, they treat workers good.”

*Theresia Joseph Paolo – Quality Control Laboratory Technician, Silverlands Tanzania*

Many of our portfolio companies operate in remote areas where there is a shortage of skills, particularly among general workers and junior-middle management. Our operations team aim to raise the bar of skills within the workforce. Much of this is through on-the-ground training, with our experienced senior managers feeding knowledge into their teams, supported by a wide variety of formal training.

Theme	Specific topics
Safety	Firefighting, health and safety, first-aid, safe handling of chemicals, emergency response.
Health and wellness and disease control	HIV/AIDS education; malaria spraying, testing and knowledge dissemination.
Operating machinery	Tractor, grader, excavator, motorbike, forklift, knapsack, chainsaw, combine harvesters, pump stations, pivots, etc.
General agriculture	Plant production, irrigators, pruning, pest and disease scouting, sprayers, conservation farming.
Livestock	Biosecurity, cattle handling, poultry production, poultry brooder management.
Finance, IT	Payroll, Excel, tax, capital allowances, internal auditing. Basic financial understanding and planning for general workers.
Governance	Anti-bribery and corruption, harassment, whistle-blowing, etc.
Other	GlobalGAP, Hazard Analysis and Critical Control Points (HACCP), teambuilding, etc.



*We require outstanding technical skills at our operations, including those to effectively manage poultry (above left), operate silos (above right), run large farming equipment such as combine harvesters (below left), and work in the feed mill (below right). Much training has been provided to raise the level of skills in our teams, located in the remote areas of our operations.*



## 6.8 Supporting SMEs who Support Us

Our operations require the support of a wide diversity of SMEs, including transporters, builders, electricians, caterers, and various smaller suppliers. In some cases, our businesses have enabled these SME businesses to expand, increasing their workforce with positive knock-on effects on local economies. Our businesses rely on upwards of 630 SMEs in Tanzania, Zambia and Namibia. Annually, over \$18.3 million is paid to these SMEs, which filters into our surrounding economies. If each SME has ~10 employees, this implies that some 6,000 jobs are supported by our businesses.



All transport of Silverlands Tanzania's grains and poultry feed is done by SME trucking businesses.

**Maureen Mkhize** was assisted by CBL in 2017 to establish a company to build gabions for the property development. She has progressively increased her workforce and now employs 16 people. With her earnings, she has built a house and sent her two children to university.



## 6.9 Community Engagement

Our aim is to support and develop the communities in which we operate. In addition to the numerous community engagements described in the impact sections above (i.e. employment, CSI projects and interactions through our JVs and hub out-grower models), we also strive to understand and positively impact the communities immediately surrounding our farms. Community liaison personnel regularly meet with our neighbours. Strong relationships with communities are essential for the success of our operations.

*Regular community meetings ensure strong working relationships with our neighbours. This photograph is from a meeting with communities surrounding Silverlands Ranching in Zambia.*





*Silverlands Zambia constructed boreholes with hand pumps (shown here), and pit latrines for the Milumbe Hills Community. According to David Sakala (District Water Supply and Sanitation Coordinator, Serenje):*

*“Silverlands don’t realise what a huge impact this going to have on peoples’ lives”.*

### 6.10 Corporate Social Investment

We are conscious that donations can have long lasting positive impacts on people’s lives. Every operation contributes in some way each year to those in need. These initiatives are an important mechanism for meaningful interaction with our surrounding communities.

In 2019, ~\$185,000 of CSI donations benefited an estimated 36,000 people.



Our general focus is on improving access to healthcare, education and water. Contributions include the construction of clinics, schoolrooms, teacher houses, boreholes, wells, weirs and roads; donations of food, training materials, and fuel; and hosting training days and school educational visits. Some sponsorship is also allocated to sports teams and celebrations.



*Silverlands Zambia is remote and far from health posts. The company built a clinic on the farm which was opened in April 2019 by the District Commissioner.*



The Silverlands Zambia clinic now treats over 900 patients monthly providing services to: outpatients, those seeking anti-natal care, those wanting family planning advice; HIV patients; those seeking vaccinations; and those requiring health checks for children under five.



Training students, such as those visiting SASL from Ndabala Secondary School, is not included in CSI spends, but is a great knowledge-sharing opportunity.

## 6.11 Tax Contributions

Portfolio company	Income taxes	Total taxes*	Year End
<b>Silverlands I</b>			
Crookes Brothers	1,129,350	8,581,582	31 Mar 2019
Silverlands Ranching	(244,623)	276,795	31 Dec 2018
Silverlands Zambia	67,286	450,350	31 Dec 2018
Silverlands Tanzania	(213,805)	1,921,884	31 Dec 2018
Silverlands Agriculture Service	41,675	174,356	31 Dec 2018
Silverlands Ndolela	(806,059)	582,679	31 Dec 2018
Silverlands Vineyards	None	641,389	28 Feb 2019
Quinta da Bella Vista	73,324	93,221	31 Mar 2019
<b>Silverlands II</b>			
Achill	None	147,911	28 Feb 2019
Zamseed	None	401,429	31 Mar 2019

\* Taxes and all fees and proceeds paid to local and central government of host country, including customs, duties and royalties, VAT, social security payments and deferred tax over the last reported financial year.

## 7 Our Environment: Strategies and Efficiencies

Our operations are successful partly because of the dedicated management of key environmental aspects. Initiatives to reduce emissions include minimising the clearing of land and reducing the use of water and fertilisers through focused application. Practising minimum tillage increases carbon, moisture and nutrient levels in the soil. Operations adhere to proper waste management practices including outstanding management of hazardous wastes (such as empty chemical containers). Furthermore, each farm protects the biodiversity in its non-cropping areas. The compliance of each business to the environmental aspects detailed in our Responsible Investment Code and the International Finance Corporation's Performance Standards, are reviewed externally each year.

### 7.1 Our Strategies for Climate Resilience

Climate change models predict greater volatility in weather with more variable rainfall patterns. Recognising the potential challenges associated with rising temperatures, droughts and floods, we seek to mitigate climate-related risks through the following measures:

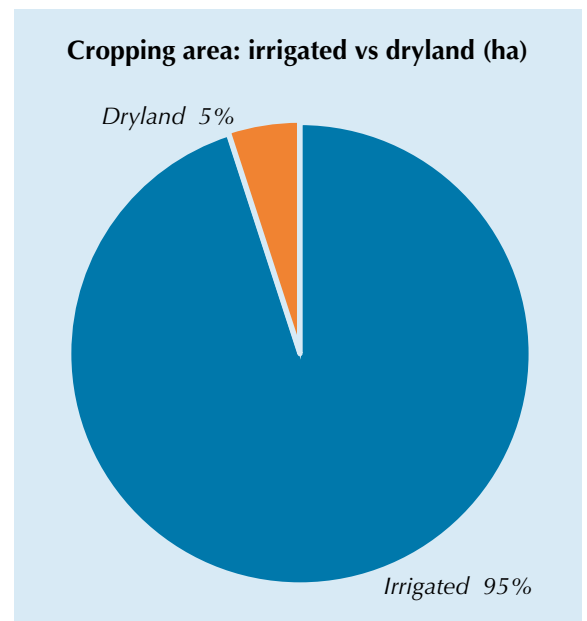
- 1 Using irrigation rather than relying on rainfall alone
- 2 Storing water from summer floods to use during dry winter periods
- 3 Selecting investments in climatically optimal locations
- 4 Growing crop and livestock varieties best adapted for local conditions

#### 1 Irrigation

We follow an irrigated cropping strategy for over 90% of the hectares cropped. 'Dryland' cropping is more of a 'bolt-on' to the core irrigated strategy and in the minority. With irrigation, a crop can receive supplemental irrigation to help it through a dry period mid-season. This is particularly important at certain times in the crop's life e.g. during the crucial two-week period when soya beans flower, a lack of rain can reduce the crop yield by around 25%. The ability to add irrigation at this critical point is obviously beneficial.

	Irrigated	Dryland	Total hectares
Silverlands I	17,226	691	17,917
Silverlands II	456	240	696
<b>Total</b>	<b>17,682</b>	<b>931</b>	<b>18,613</b>

*\*Summer and Winter cropped hectares counted separately for double-cropped irrigated areas in Tanzania and Zambia.*



#### 2 Water storage

In an environment where the rainfall is predicted to become more volatile, having the ability to catch sudden downpours can assist in maintaining effective crop management. Where possible, we seek to store water rather than rely on the run of rivers.

Most of our projects already use stored water, with the following exceptions:

- *Silverlands Ndolela*: The water risk is very low given the large size of the river. There are also no major water users either up or down stream.
- *Silverlands Tanzania (Iringa farm)*: A holding dam is being planned.

- *Silverlands Zambia:* The team is working with others in the catchment area on the planning of a dam, which would supply all the users in the area.
- *Silverlands Vineyards and Achill:* Although the farms do not have their own dams, several dams feed the Orange River upstream in its large catchment area. The key risk is one of mismanagement of these dams, which is largely under government control.



*The Kakushi Dam on Silverlands Agriculture Services was completed in 2016. This is the only dam on the Kakushi River, with a catchment that appears to perform better than surrounding areas due to its higher altitude.*

*In addition to providing water for the farm, water users up to 45Km downstream report that more water is available in the river during the dry season since the dam was built.*



*The 13million m<sup>3</sup> Luezi Dam on Silverlands Ranching, constructed in 2014, has allowed the planting of ~500 ha of irrigated pastures and crops to help feed the cattle and intensify farm use.*

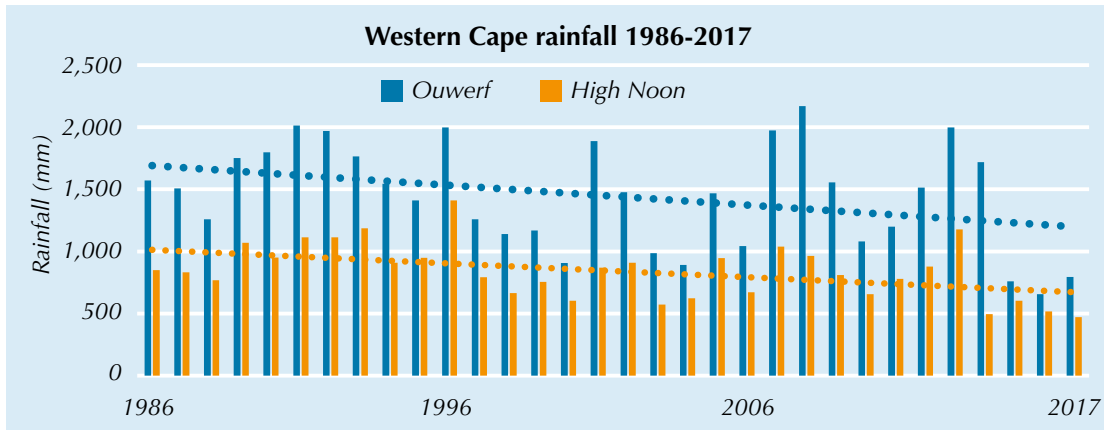
### 3 Climatically Optimal Locations

We look for operations in climatically optimal locations for the specific crops we want to grow. For instance, Central Zambia and Southern Tanzania have optimal climates for growing grains and soya. Furthermore, we are careful in selecting areas where water security is highest.

#### Deciduous fruit farms in the Cape

The extreme drought in the Cape area a few years ago has highlighted that the CBL deciduous fruit farms are in better locations than others. The Crookes' farms in the Elgin-Grabouw-Vyeboom-Villiersdorp (EGVV) area were less affected than farms in drier areas such as the Ceres valley. This will become increasingly important, given the long-term trend of reduced rainfall in the Cape.

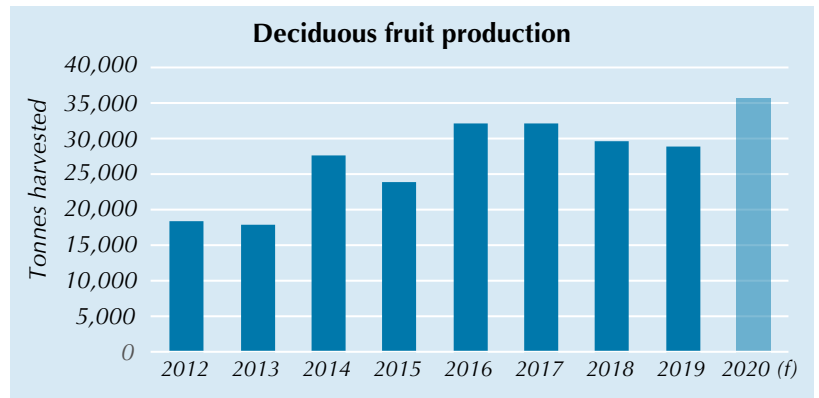
The drought also showed the excellent management of water resources by our teams on the ground. The farms run automated irrigation systems, allowing management to apply water when most effective, i.e. at night to avoid day-time evaporation (see water management section below).



**Comparison of dam levels in August for the last three years**

Dam	Farm	Aug 2017 (%)	Aug 2018 (%)	Aug 2019 (%)	Change
Theewaterskloof	Ouwerf	25	44	72	+28
Elandskloof	Bellcro	29	87	95	+8
Ouwerf	Ouwerf	60	100	100	-
Vyeboom	Vyeboom	30	47	100	+53
Bateleur	High Noon	48	100	100	-
Apiary	High Noon	15	100	100	-
<b>Average</b>		<b>35</b>	<b>80</b>	<b>95</b>	<b>+15</b>

The volume of deciduous fruit was low in the extremely dry 2018 season and remained low in 2019, an expected delayed recovery from the drought. Given the large areas of replanting in the last few years, yields and production volumes are set to increase this year with new varieties coming into full production.



The Vyeboom Dam (on one of CBL's deciduous farms) is full for the first time in three years.



The Elandsloof Dam was less than 30% full in 2017 ...



... and spilled in 2019.

#### 4 Variety selection

Every year, advances in breeding produce varieties that are better adapted to climate variations, particularly drought. Informed by industry expertise and their own trials, our farmers select the best varieties for the area. This is done for every crop in the portfolio (e.g. sugar cane, soya, maize, beans, wheat, barley, macadamias, apples, pears and avocados) as well as the livestock.



The cattle reared at Silverlands Ranching are suited to the dry climate of southern Zambia.



The Sasso poultry breed is better adapted to the free-range environment of rural Tanzania than traditional 'Western' poultry breeds.



Trials at Silverlands Ndolela identify crop varieties that perform best in that remote part of Tanzania – useful for both the commercial farm and surrounding smallholder farmers.

Our Environment

## 7.2 Increasing Productivity

Globally, agriculture is under pressure to produce more, on the same area of land, and with less resources. The majority of the world's population growth between now and 2050 will come from Africa, with estimates from the UN showing an increase from around one billion people now to over two billion in 2050. Most countries have food deficits already and a huge sustainable increase in yield productivity is necessary to meet future food requirements.

This challenge presents a unique opportunity to use strategically invested capital to fix some of the challenges in the various crop value chains. Specifically, to raise productivity sustainably without perpetuating agricultural practices that harm the environment.

In our portfolio, food production has trebled since purchase (excluding sugar cane which distorts the figures because of its large volumes). Across all our operations, production for the last cropping season was over 825,000 tonnes. Production of fruit has doubled, row crops (mostly grains and soya) are up six-fold, and cattle numbers are up by a factor of seven.

### Silverlands I - Production volume summary

Product	Year prior to acquisition	Current year	Multiple of start value	Cropping area (ha)
<b>Livestock</b>				
Cattle	778	5,753	7.4 x	
Day old chicks	-	10,825,000		
<b>Processing</b>				
Poultry feed (t)	-	37,440		
<b>Row crops</b>				
Barley (t)	460	3,948		672
Seed maize (t)	1,401	6,024		1,010
Commercial maize (t)	-	2,849		383
Soya beans (t)	125	5,183		2,824
Seed beans (t)	-	238		140
Potatoes (t)	-	2,298		109
Seed potatoes	-	360		20
Wheat (t)	6,614	22,907		2,828
Silage (t)	-	8,080		257
Seed sunflower (t)		96		250
<b>Row crops total (t)</b>	<b>8,600</b>	<b>51,983</b>	<b>6.0 x</b>	<b>8,493</b>
<b>Plantation crops</b>				
Sugar cane (t)	552,728	714,188	1.3 x	6,837
<b>Fruit crops</b>				
Grapes (t)	3,198	4,268		352
Deciduous fruit (t)	14,900	33,961		653
Bananas (t)	12,618	22,204		530
<b>Fruit total (t)</b>	<b>30,716</b>	<b>60,433</b>	<b>2.0 x</b>	<b>1,535</b>
<b>Tree nuts</b>				
Macadamia nuts (t nut-in-shell)		1,040		463
<b>Total crops (incl. sugar cane)</b>	<b>592,044</b>	<b>827,644</b>	<b>1.4 x</b>	<b>17,328</b>
<b>Total crops (excl. sugar cane)</b>	<b>39,316</b>	<b>113,456</b>	<b>2.9 x</b>	<b>10,491</b>

## Silverlands II - Production volume summary

Product	Year prior to acquisition	Current year	Multiple of start value	Cropping area (ha)
<b>Row crops</b>				
Commercial seed (t)	2,096	2,695	1.3 x	1,019*
<b>Fruit crops</b>				
Grapes (t)	868	1,492	1.7 x	135
<b>Total crops</b>	<b>2,964</b>	<b>4,187</b>	<b>1.4 x</b>	<b>1,154</b>

\*Zamseed outsources the majority of its production. Last season, seed was grown on roughly 600 ha of out-grower farmers' land plus 419 ha of Zamseed's own cropping (summer and winter).

## 7.3 Reducing Carbon Emissions

In the context of increasing atmospheric carbon dioxide levels, there is a critical need to ensure environmentally responsible food production practices across the food value chain. We are reducing regional carbon emissions through two strategies:

- 1 Increasing local production and reducing imports reduces carbon emissions.
- 2 Improved farming methods on our farms and by smallholders, reduces emissions while also taking carbon from the atmosphere and storing it in the soil.

## 1 Increasing local production and reducing imports

Food production at our farms is reducing the need for food imports into those countries, reducing both the carbon emissions from transportation, as well as the cost of food in-country.

**Wheat:** In Zambia, our wheat already contributes notably to national production levels. Silverlands is projected to produce over 15% of the national production of wheat in 2019, up from 0.1% prior to Silverlands' purchase.

Wheat production in Zambia	2012	2017	2018	2019
Zambia national production (t)*	254,000	194,000	114,000	152,000
Silverlands production (t)	300	17,992	22,764	22,907
Proportion grown by Silverlands	0.1%	9%	20%	15%

\* IndexMundi

2018 national production was presented as 200,000 t in 2018, and has since been updated.



Wheat production at Silverlands Agriculture Services in Kakushi.

**Soya:** Before we established Silverlands Tanzania, and implemented the country’s first poultry feed mill, Tanzania was importing its entire soya requirement. By creating a market and buying soya for processing in our feed mill, we triggered the local production of soya by smallholder farmers. Tanzania has become more self-sufficient. Locally the smallholder farmers’ yields have improved as a result of crop rotation reducing the need for expanding cropping areas. This year, Silverlands Tanzania is purchasing 2,000 tonnes of soya from 4,000 farmers, although more farmers are now selling into the local and regional markets. We expect Tanzania to become fully self-sufficient in soya over the next eight to ten years through our initiatives.

**Fruit:** Apples and pears are sold through Two-a-Day (of which CBL own 19%) into 65 different countries. The volume directed into local African markets has increased, reducing the associated carbon footprint.



Locally produced bananas reduce the import requirement from Latin America. Since investing in CBL, banana production has increased 82% from 12,618 t in 2012 to 22,907 t in 2019.

## 2 Improved farming methods – Reduce emissions and increase carbon stored in soils

Our farmers practice minimum tillage and the smallholder grain farmers we work with receive training in the benefits of minimum tillage and other conservation agriculture practices. By not tilling the land, we maximise the carbon retained in the soil as organic matter. Along with improving soil structure, moisture, nutrient levels and yields, this also reduces the carbon dioxide and other greenhouse gases that are released from the soil into the atmosphere.

“There’s two times more carbon in the earth’s soil than in all of its vegetation and the atmosphere - combined.”

*Asmeret Asefaw Berhe, Soil Biogeochemist, University of California*

## 7.4 Soil and Land Management

Soil is the resource within which our crops grow. It is irreplaceable and needs to be nourished and nurtured now and in the future.

Without properly managed soils, our businesses would not be profitable. Conversely, with proper soil management, we can dramatically increase productivity to meet the nutritional needs of a growing population, while minimising negative environmental effects from land conversion. Our aim is to optimise the use of every hectare of land under our care, whether it is planted to crops or protected from biodiversity loss. Initiatives to improve our soils include:

**Minimum tillage:** Specific to row cropping, minimum tillage increases soil organic matter, and improves soil structure and moisture levels, which then reduces erosion and nutrient leaching.

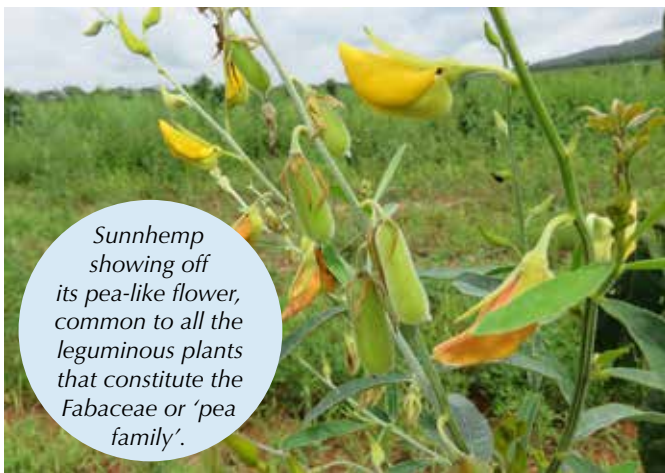
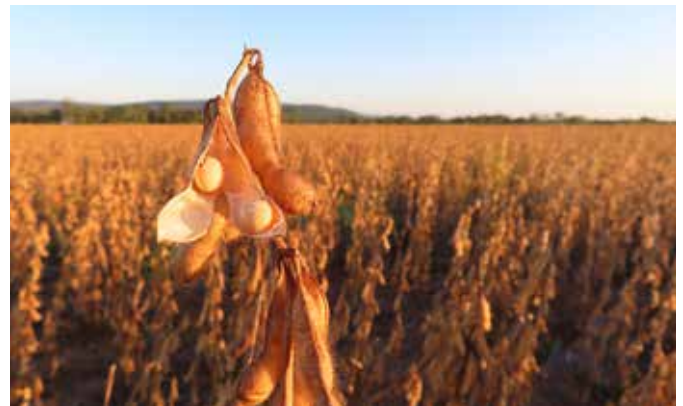




*When practicing minimum tillage, the next season's crop is planted into the residue of the previous crop, that breaks down and improves the organic and moisture content of the soil.*



**Intercropping:** Legumes significantly increase nitrogen in the soil (one of the main components of fertiliser), as well as improving soil organic matter and soil structure. Using legumes as a rotation crop results in marked improvements in yields. On our farms, legumes such as sunnhemp are planted on new lands, between successive plantings (such as sugar cane) or intercropped between avocados. Legumes are also included in crop rotations, such as soya (right) in summer and wheat/barley in winter.



*Sunn hemp showing off its pea-like flower, common to all the leguminous plants that constitute the Fabaceae or 'pea family'.*



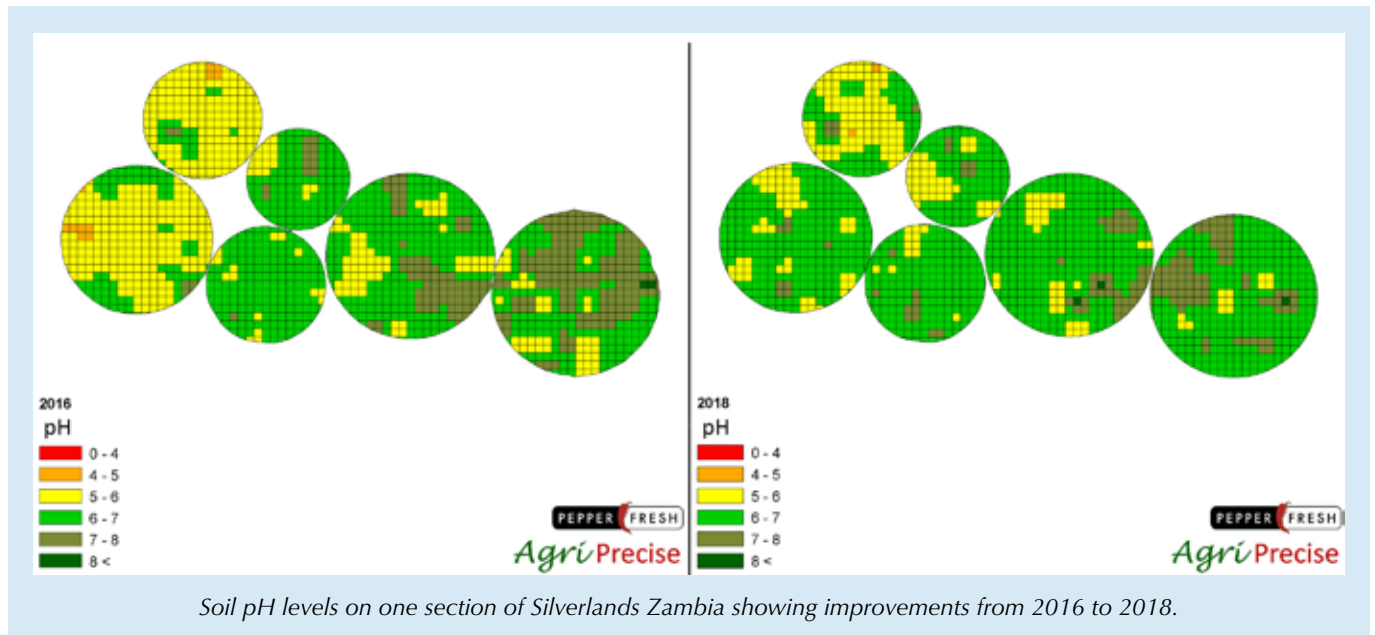
*At Silverlands Ndolela, sunnhemp was planted between rows of young avocado trees creating a favourable above-ground environment for young trees, whilst also improving the soil.*

**Nutrient management:** All farms across the group make use of soil and leaf analyses in designing fertiliser programmes. With detailed analysis, and equipment allowing for variable fertiliser application, we can minimise environmental impacts and reduce costs.

The diagrams below illustrate the results of detailed soil analysis undertaken on a 2 ha grid, in which one 100 ha pivot has 50 sampling points. They show soil pH which is a crucial measure as low pH / high acidity soils lock up nutrients and make them unavailable to plants. The low pH / acidic soils are shown in yellow and the best soils in the 6-7 pH range are shown in light green.

To rectify this, calcium (in the form of lime or calcium carbonate) is added to the soils. This is a delicate process as adding too much will throw the calcium-magnesium levels out of balance. Soils become acidic for various reasons, for instance, being leached by rain. The two pivots on the left were also previously planted to gum trees and bringing the soils back in line for row cropping takes time.

The left image is from 2016, one of the first seasons Silverlands planted the pivots. The right image demonstrates the results of better and more even pH levels after two years of correcting the soils. Some of the remaining yellow patches indicate laterite patches with shallow soils, and others are still a work in progress.



**Composting:** This improves organic content, moisture levels, soil structure and fertility. An example of composting is when old deciduous orchards are removed (grubbed), the trees are chipped and reapplied to the orchard.

**Poultry manure:** In Tanzania, poultry manure is composted and spread on fields as a natural fertiliser.

**Erosion control:** Contouring, carefully designed by engineers and marked out on the ground by surveyors, is implemented and maintained to reduce surface runoff. Additional erosion control methods are implemented where required.

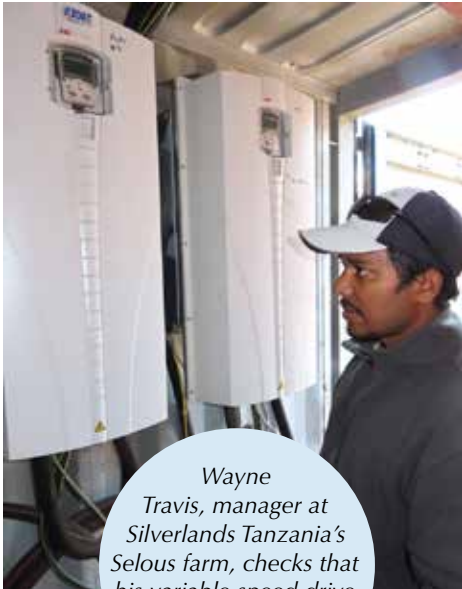


## 7.5 Efficient Water Management

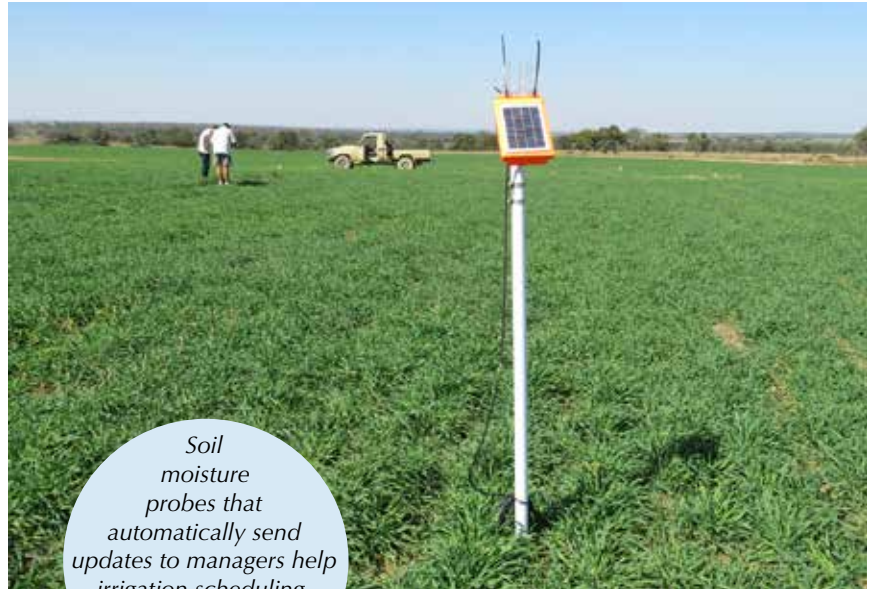
Water is the largest input by volume in many types of agriculture and of high concern to our farmers. Minimising water use has direct benefits for the environment, other water users and profitability (using less water reduces electricity costs, directly affecting the bottom line).

Implementing the most efficient technologies, and with diligent on-the-ground management, our managers take extreme care to minimise the volume of water used. Some of our operations have also been integral in establishing water user associations with other commercial farmers, to ensure good water management beyond our boundaries.

Technologies to aid in water management and improve water use efficiency include flow meters, variable speed drive pumps (VSDs), drip and micro-sprinkler irrigation systems, soil moisture probes, weather stations, evaporation pans and automation methods.



Wayne Travis, manager at Silverlands Tanzania's Selous farm, checks that his variable speed drive pumps (VSDs) are running smoothly.



Soil moisture probes that automatically send updates to managers help irrigation scheduling. This is an image taken at Silverlands Ranching.

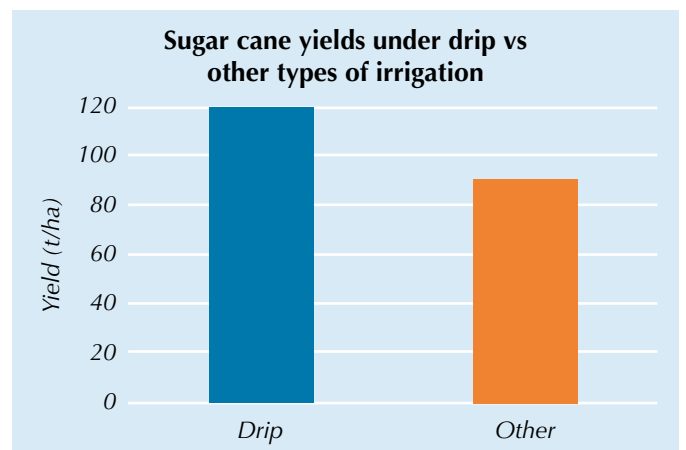
We are endeavouring to track water use per area or tonne of product for each crop. Challenges in doing this include: variation in rainfall (even on the same farm), and flow meter measurements only being available for broad areas rather than individual fields.

We continue to pay careful attention to water management.

### Conversion to drip irrigation

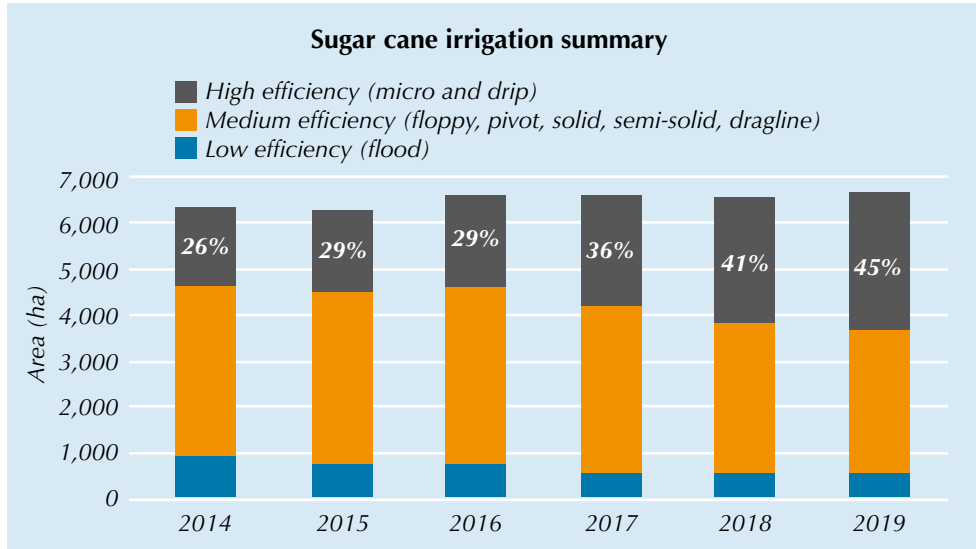
As most of our Silverlands investments were new developments or expansions, efficient irrigation systems were implemented from the start. CBL, an established company, is doing well to continuously upgrade to the most efficient irrigation types, budget permitting.

Drip irrigation is best for sugar cane, both from water usage and profit perspectives. Under drip irrigation, yields increase over 30% while using 25% less water. This is a remarkable saving that maximises water efficiency and reduces electricity costs. The better performance of the areas under drip irrigation is particularly noticeable during drought periods when water supply is restricted. This significant increase in yields, from around 90 to 120 t/ha, brings substantial increases in profitability. The revenues on a farm hinge on 'tonnes of produce times price per tonne'. Any increase in the tonnes per hectare goes straight to the bottom line.



Sugar cane is re-planted roughly every 10 years, and about 10% of a farm's cropping area is replanted annually. This is the best opportunity to change the irrigation. It cannot be done all at once, rather consistently each year as replanting takes place and budgets allow. CBL continues to convert their areas of cane to drip irrigation. Five years ago, approximately 26% of CBL's sugar cane (1,600ha of 6,300ha) was under drip irrigation. This is being increased to 45% of the area in 2019 (2,800ha of 6,300ha).





**Automation in deciduous fruit farms**

Every orchard of apples or pears has a different water requirement, depending on the variety and age of the trees. These farms are also small in comparison to row-cropping fields and every 4 ha of orchard is monitored by a soil moisture probe. Linking these to automated irrigation systems allows farm managers to carefully apply specific volumes of water to orchards, at any hour of the day. These systems were invaluable during the 2017-2018 drought.

**Aquatic Biomonitoring:** To check we are not negatively affecting dams and rivers, we use insect larvae as a sensitive indication of water quality. For the third consecutive year, we have used expertise from the University of Cape Town to assess the health of rivers on our farms in Zambia.



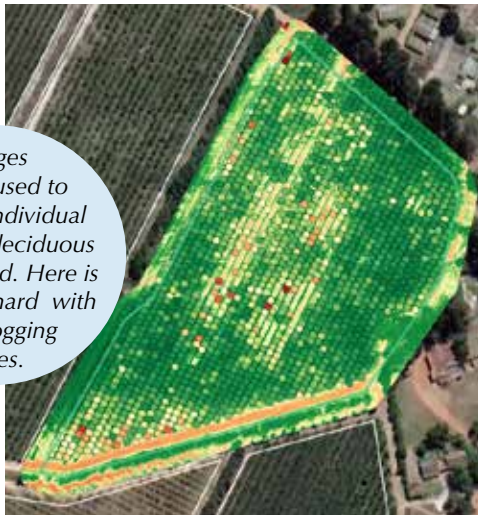
**7.6 Using Satellite Technology**

Almost all of our farms are now using Normalised Difference Vegetation Index (NDVI) imagery to identify areas of crops in need of attention. The NDVI provides an indication of vegetation health using near-infrared light (which vegetation reflects) and red light (which vegetation absorbs). Darker green areas show stronger plant growth.

Taken by either satellite or drone (or both), with weekly updates, the imagery is used to assess plant health, monitor impact by pests and diseases, and plan management of the farm, such as irrigation and fertilisation. With high resolution imagery (up to 3 cm accuracy), farmers can focus their attention on individual trees or vines. This helps management to be more accurate, thereby reducing time and resources spent on each intervention. The result is that the field, orchard or vineyard is more uniform and ultimately maximises production while minimising inputs.

Plant health is assessed using imagery showing Normalised Difference Vegetation Index (NDVI) values. These help management efficiently grow the most uniform and productive crop.

*Images can be used to monitor individual trees in a deciduous fruit orchard. Here is an old orchard with waterlogging issues.*



*... and a younger fully productive orchard.*



*Images of vineyards in Namibia from September 2018 and September 2019. The blocks shown in red are in the process of being replanted with new vines of special taste varieties.*



## 7.7 Integrated Pest Management

To maximise the efficiency of production, pests need to be managed, using as little pesticide as possible and only as a last resort. Multiple other pest control measures are implemented to prevent the use of pesticides, which are costly to the business, the environment and have potential health risks. Initiatives include:

- Maintaining buffer zones of vegetation around the cropping areas provides habitats for natural pest predators.
- Erecting bat houses at Silverlands Zambia in a trial aimed at controlling fall army worm.
- Physically removing certain pests by hand, such as the fungal 'smut' in sugar cane.
- Using physical barriers – such as wrapping sticky tape around the trunks of fruit trees to prevent crawling insects, such as snout beetles, from climbing up and damaging fruit.
- Tying up tags dosed with pheromones in the deciduous fruit tree orchards; these act as mating disruptors, flooding the orchard with pheromone so male codling moths can't locate their females.
- Releasing sterile fruit flies into orchards and vineyards

- Using early detection systems to help catch infestations early and allow small focused applications of pesticides rather than broad spectrum spraying; for this, employees trained as pest scouts walk through fields assessing pest numbers, and insect traps placed in fields are frequently checked.



*Sticky tags prevent insects from ascending fruit trees.*



*Traps are used to monitor insect populations to catch infestations early.*



*Pheromone tags in deciduous orchards act as mating disruptors, flooding the orchard with pheromone so male codling moths can't locate their females.*



*This wasp visits a flower in a buffer zone of natural grassland around potato fields in Tanzania. It also predate on diamondback moth caterpillars, a pest to potato plants.*

## 7.8 Waste Management

In accordance with the IFC Performance Standards, we dispose of our hazardous waste – such as empty chemical containers and used oil and oil filters – with registered hazardous waste disposal facilities. Identifying such companies outside of South Africa remains a challenge, and where available this service is extremely expensive. To keep the cost in check, some farms are using pelletisers to condense the volume of containers and reduce transport and disposal costs. A recent success is our Tanzanian agrochemical suppliers, who have agreed to take their old containers back.

We continue to try to implement recycling initiatives across all our operations; however, service providers are seldom present in remote areas. We welcome suggestions regarding waste disposal and recycling options if other investors have innovative solutions.

## 7.9 Power Management

### Efficiencies and infrastructure

Pumping water is usually the greatest energy requirement in farming. To minimise this, the amount of water needed must be minimised (see section on water management above). In addition, energy efficient variable speed drive (VSD) pumps are installed whenever a new pump is required. They are relatively new in farming and reduce the power requirement. Less maintenance is also required on the pumps, and other irrigation infrastructure as previously high pressures resulted in frequent pipe bursts. Introducing VSDs resulted in a 33% reduction in the cost of pumping water at Silverlands Vineyards, which led to capex payback within a single year. CBL has reported similar achievements.

### Solar power

Namibia is an excellent location for solar and Silverlands Vineyards have implemented a 210 kW solar power unit to supplement grid power on the farm, as well as reduce the dependence on fossil-fuel-generated electricity. This has an estimated annual return on investment of 7 to 10% at current electricity prices, but this will rise as an arrangement has just been made to provide unutilised solar power back into the Namibian power grid. A further 250 kW is due to be commissioned in early 2020 at Silverlands Vineyards. Achill is in the process of determining the optimal power solution to supply its new development and it will most likely include a solar combination.



CBL are planning the implementation of a 1.5MW solar power project at their sugar cane farm in eSwatini/Swaziland. Energy management consultants have been tasked with identifying the best technologies and management practices to reduce energy consumption. Solutions from this pilot project will be rolled out across the group. The aims of the project are to a) lower electricity costs, and b) reduce emissions from electricity generation.

### Hydro-electric power

Hydro-electric power is a proven and clean technology and can be the most efficient in certain locations. Silverlands Ndolela has the luxury of an 80 m drop in the large Ruhuhu River on the southern border of the farm. They upgraded the mini hydropower facility present at acquisition from 80 to 800 kW by extending the canal and installing a new hydroelectric plant.

Commissioned in December 2017, the hydro-generated electricity powers the farm's irrigation pumps, pivots, housing and offices. It supplies the power requirements for all except two months of the year when it fulfils around 70% of the farm's needs.



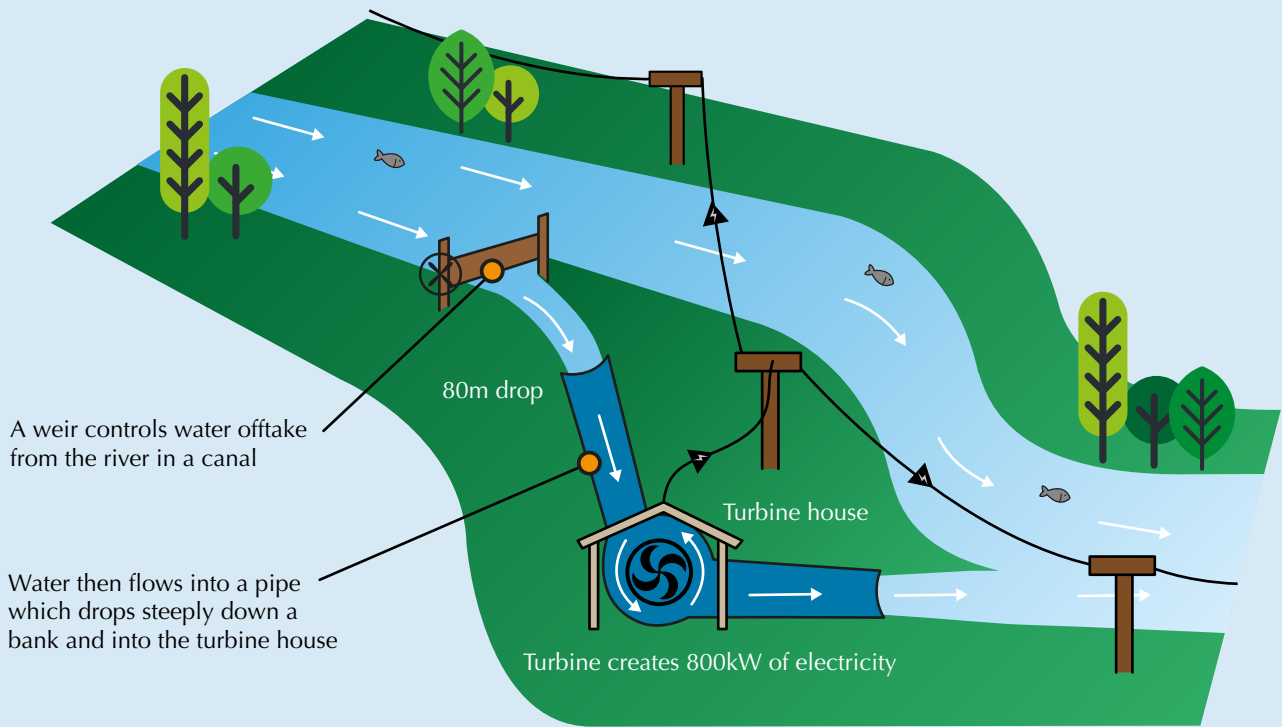
*Silverlands Ndolela is privileged to have use of an 80m drop on the large Ruhuhu River (left) – the perfect location for a hydropower plant. A small quantity of the total river volume flows into a pipe that drops steeply down a bank and into the turbine house (right).*



*Water enters from the left and turns turbines in the large blue casings (left), before being released back into the Ruhuhu River (right).*

### Hydro-electric Power

A proven and clean technology and can be the most efficient in certain locations. Silverlands has the luxury of an 80m drop in the large Ruhuhu River on the Southern border of the farm.





## 8 Summarising Our Impact Through the Sustainable Development Goals (SDGs)

The UN's Sustainable Development Goals are aimed at improving the quality of life for all people and our planet. Most of our work is in rural areas where people are dependent on land, livestock and agriculture for their livelihoods. These people are typically the poorest in these countries. We feel privileged to have the opportunity to take financing, knowledge and resources into these areas to make a significant difference to the lives of people in rural Africa.

Average GDP per capita is ~\$3,250 per annum in the six countries where we operate. We really are operating in poor countries where we can have a large impact.

Country	GDP per capita (\$)
Mozambique	490
Namibia	5,931
South Africa	6,374
eSwatini/Swaziland	4,140
Tanzania	1,050
Zambia	1,539
<b>Average</b>	<b>3,254</b>

Source: World Bank, 2018



- ~340,000 people benefit economically from our investments. On average they profit ~\$330 more per annum. Therefore, third parties – employees, smallholder grains and livestock farmers, and communities in joint ventures within our portfolio companies – earn an incremental profit of \$112m per annum because of our investments.
- Our businesses transact with over 630 SMEs who are paid over \$18.3m per annum for their goods and services. We estimate that these SMEs hire over 6,000 people. In total, based on an IFC jobs study multiplier, we create ~7,500 indirect jobs in the industries we rely on.
- CSI donations to communities around our operations total ~\$186,000, estimated to benefit ~36,000 people. Our projects focus on improving access to healthcare and education.

Sustainable Development Goals

- Our investments in the seed sector and out-grower programmes aim to increase smallholder farmers' yields from ~1.7 to 3.5 t/ha. If this can be achieved, then it will remove hunger in the countries where we operate. Smallholder farmers can realise this simply through using the right seed and conservation farming techniques.
- In Zambia, the smallholder cattle farmers we work with have seen their herds increase from 16 head to 19-20 over the last 5 years. This is a result of our extensive dipping and vaccination programme, which has reduced cattle mortality and improved calving rates. Over 28,000 cattle owned by nearly 1,600 farmers benefit from this programme.
- Production on our farms has increased substantially because of our investments. Fruit production alone has doubled since we made the investments.
- Silverlands' grains farms in Zambia have increased the country's wheat production by 15%.



- Our impact is particularly strong in empowering women because most smallholder farmers are women. As an example, our poultry project in Tanzania focuses on women, who make up 80% of smallholder poultry farmers. We estimate that ~56,000 poultry farmers are earning over \$450 more per annum because of this project.
- The majority of grains farmers in Central and Southern Africa are also women. This year, nearly 22,000 t of grains are being purchased from smallholder farmers. Our seed is used by ~240,000 smallholder farmers and high yields are estimated to increase incomes by ~\$255 p.a. per farmer.
- Women are crucial to our operations, constituting 40% of our workforce. Women are particularly good at careful and technical work, such as managing our feedmill, handling fruit and poultry, and de-tasselling maize.
- At our ranch in Southern Zambia, a sunflower out-grower scheme focused on women provides sunflower cake for feed for our feedlot.

- Silverlands has over 6,900 employees, up 47% from purchase (~4,700). Employee numbers have increased 4-fold in the Tanzanian and Zambian operations, associated with our large developments. Our businesses are key employers in their rural locations, increasing salaries by 3-fold since purchase (excl. CBL) – currently at \$28m p.a.
- Each operation has capacity and systems in place to ensure we follow world-class employment practices and ensure safe work environments for all employees. We adhere to the IFC Performance Standards with annual reviews of performance.



- To protect soils and water resources: water use is minimised by using the most efficient irrigation methods, soil moisture probes, weather stations and mechanisation; runoff is managed with contouring; pesticide use is minimised by following Integrated Pest Management programmes; and fertiliser applications are tailored to the needs of soils and crops rather than broad spectrum application.
- Minimum tillage and cover crops improve soils, which increases crop productivity and soil carbon. We implement these practices and train smallholder farmers about them.
- On our farms that are blessed with large areas of natural woodland and grassland the biodiversity is protected and managed within conservation areas where possible. The removal of alien vegetation is ongoing.
- Adherence to the best environmental practices, as per our Responsible Investment Code and the IFC Performance Standards, are assessed annually during external reviews.

Sustainable Development Goals

## 9 Managing ESG Aspects

### 9.1 Governance Structures

Our goal is to establish high levels of governance through the appropriate board structure and associated board committees at each of our portfolio companies.

**Responsible Investment Code:** The boards of all our portfolio companies have signed up to our Responsible Investment Code.

**Anti-Bribery Policy:** The boards of all our portfolio companies have adopted SilverStreet's Anti-Bribery Policy. SilverStreet is committed to ensuring that all officers, employees and third-party representatives of Silverlands are aware of the UK Bribery Act and the US Foreign Corrupt Practices Act, that they do not infringe them and that they exhibit the highest ethical business standards at all times.

**Independent directors:** We aim to have a minimum of two independent directors as this helps to bring an independent perspective, local networks and expertise in the sector. We aim for one of the independent directors to be of sufficient stature to chair the board meetings.

**Board mix:** The target board structure, for those companies of which Silverlands owns 100%, usually comprises:

- Two independent board members
- Two executive members (the MD and CFO)
- Two SilverStreet members.

In some countries, there are regulatory rules on board membership, which also need to be followed. In Zambia as an example, at least half of the board must be resident in Zambia.

**Board committees:** We have also put in place board committees to deal with key specific governance issues. The two key committees we target creating are the 'Audit Committee' and the 'Remuneration Committee'. The 'Audit Committee' has the role of overseeing the annual audit process and interacting with the auditors to understand any issues arising and any debates on accounting practices; this allows detailed review and checks. The 'Remuneration Committee' principally approves the remuneration of the senior management team of the portfolio company, as well as approving the annual bonus scheme and any long-term incentive plans. This committee also reviews and recommends the nomination of any new member to the board, interviewing them and monitoring the balance of skills in the team. On some boards, this role has been separated into a 'Nominations Committee', but it is generally not significant enough to justify a separate committee.

Other committees are added where useful. Examples include a 'Risk Committee' whose members seek to identify the key risks facing the company and to recommend ways that the company can mitigate those risks. Additionally, CBL has a 'Social and Ethics Committee' and Julia Wakeling (our Head of ESG) attends these meetings.

**Reporting:** The portfolio companies have a minimum of four board meetings a year. Monthly reports are produced for the SilverStreet Investment Committee. A member of each portfolio company has responsibility for monitoring and reporting back to the SilverStreet Investment Committee on Anti-Bribery and Corruption training.

**Strategy:** The boards approve budgets and agree strategy. Key strategic matters are escalated SilverStreet's Investment Committee for its consideration. Examples of such matters include new developments, acquisitions, divestments etc. The Head of ESG is also a member of the SilverStreet Investment Committee.

**Environment, Social and Governance:** The portfolio companies conduct an annual ESG review and the results are made available to our investors. They are also presented to the boards of the portfolio companies and action points are discussed. Some of these action points may require sufficient budget to be allocated for the action to be implemented. Action points are monitored between annual reviews, and the ESG team visit the portfolio companies to get updates and to provide ESG training. Each portfolio company has a designated ESG contact person.

The following table summarises these governance features. Most of the governance structures are in place. Silverlands Vineyards and Achill are both searching for second independent directors. QBV is a joint venture company with CBL and there is already a reasonable balance on the company's board given the company's size. As the business develops the board will be added to.

Portfolio company	Silverlands' stake	Number of independent directors	Independent chairperson	Board committees		Written commitment to the Responsible Investment Code	Independent auditor
				Audit	Remuneration		
<b>Silverlands I</b>							
Crookes Brothers	44.8%	4	✓	✓	✓	✓	✓
Silverlands Ranching	100%	1	✓	✓	✓	✓	✓
Silverlands Zambia	100%	2	✓	✓	✓	✓	✓
Silverlands Agriculture Services Ltd	100%	2	✓	✓	✓	✓	✓
Silverlands Tanzania	100%	2	✓	✓	✓	✓	✓
Silverlands Ndolela	100%	1	✓	✓	✓	✓	✓
Silverlands Vineyards	100%	1	✓	✓	✓	✓	✓
QBV	51%	0	✗	✗	✗	✓	✓
<b>Silverlands II</b>							
Achill	100%	0	✓	✓	✓	✓	✓
Zamseed	78.71%	1	✓	✗	✗	✓	✓

## 9.2 ESG Responsibility

### Board level responsibility

A member of the board of each portfolio company has been assigned the responsibility for ESG issues. The following individuals are responsible for ESG at a board level: Elisha Chivero (STL), Simon Morgan (SNL, SZL, SASL), Harvey Leared (SRL, QBV) and Kevin Liddle (SVL). CBL's board has a separate Social and Ethics Committee, a board committee, which is accountable for ESG issues and is attended by SilverStreet Capital's Head of ESG, Julia Wakeling. ESG managers are present at each board meeting.

### Day-to-day ESG implementation

Each portfolio company has personnel responsible for ESG. These people oversee ESG aspects by managing the Social and Environmental Management Systems (SEMS) that have been implemented. This includes assessing and updating ESG risks, reviewing and implementing procedures, and collating and reporting ESG data to senior management and the General Partner. SilverStreet oversees all ESG implementation across all portfolio companies.

The following personnel across the group have key ESG management and/or reporting duties:



**Julia Wakeling (SSC)**  
SilverStreet Head of ESG



**Luke Lowsley-Williams (SSC)**  
SilverStreet ESG and Impact Analyst



**Dr Ben Moshi (STL & SNL)**  
Board, Community Liaison



**Janet Sanders (STL & SNL)**  
ESG Manager Tanzania



**Nelson Mung'ong'o (SNL)**  
Administration Manager



**Sheryl Bradnick (STL)**  
Poultry Training Manager



**Madeus Deule (STL)**  
HR Assistant and CLO



**George Chabaputa (SASL)**  
HR/ESG Manager Zambia



**Francine Matanda (SRL)**  
HR/ESG Assistant



**Arthur Mwale (SZL)**  
HR/ESG Assistant



**Chris Simpasa (SZL & SASL)**  
Community Liaison Officer



**Ross Trotter (CBL)**  
Group Services Manager



**Bruno Lima (QBV)**  
Farm Manager (ESG oversight)



**Lara Hough (SVL & Achill)**  
ESG Manager



**Lewona Heyn (Achill)**  
ESG Officer

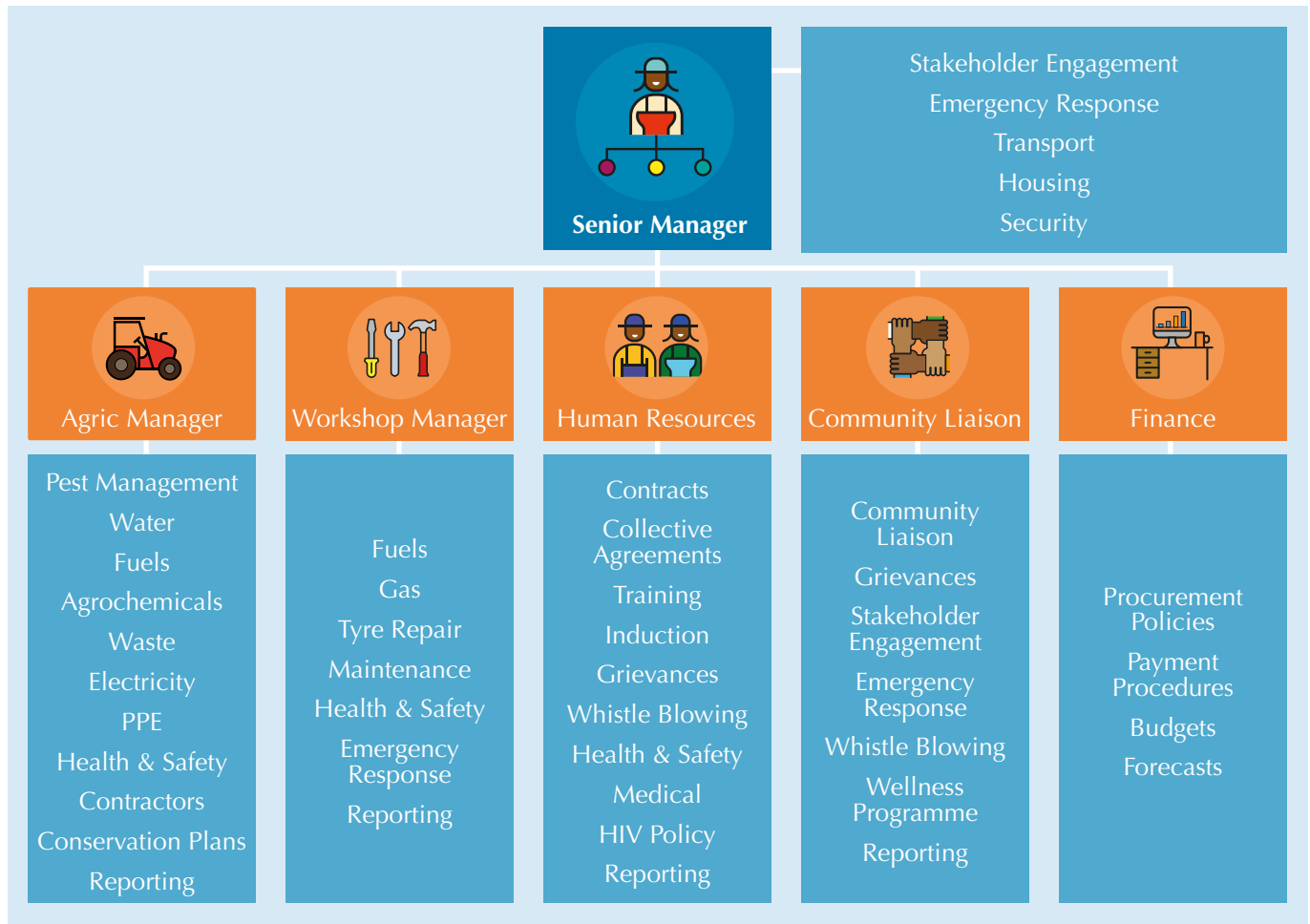


**Chimankata Kashimbaya (Zamseed)**  
Head of HR

### Shared Responsibilities

Managing all the aspects relating to ESG is beyond one person’s task alone. Each farm has an organogram showing how management of ESG is divided between roles. Going through this exercise helps management understand that ESG really is all about risk management, and that it’s everyone’s responsibility.

### Example of an organogram showing the separation of ESG risk management topics across typical farm roles



### 9.3 Social and Environmental Management Systems

The board of each portfolio company has committed to adopt and implement a Social and Environmental Management System (SEMS). In each SEMS, ESG risks are identified, procedures implemented to manage the risks, and key ESG aspects reported to management and the boards.

Portfolio companies in which we have been invested for longer have done well to integrate management of environmental and social aspects into their day-to-day operations. They are generally moving from implementation to finessing the management of ESG.



Managing ESG Aspects

“The quality of your regular E&S reports is noteworthy – I wish all of our projects provided such thorough reports!”

*FS – visiting DFI E&S specialist*

## 9.4 ESG Training

On-the-ground training continues to take place with all management responsible for ESG and any new key personnel. Topics include: an overview of ESG; the International Finance Corporation (IFC) Performance Standards; the Fund’s Responsible Investment Code (RIC); Social and Environmental Management System (SEMS) adaptation and implementation; monthly reporting and stakeholder engagement; and discussions to ensure understanding of all actions in Environmental and Social Action Plans.

Online training in ESG risk assessment and management, such as those provided by the IFC and World Bank, are very useful. Most people in ESG roles have completed online training courses in the last year.

## 9.5 ESG Monitoring and Due Diligence Visits in 2018-19

SilverStreet Capital and independent consultants visit portfolio companies regularly. In the 12-month reporting period, six of the businesses were visited by ESG specialists from the IFU and OPIC. Their recommendations and action points are being implemented by management.

### ESG visits during the reporting period

Silverlands I	Properties	Type of visit	Participants
November 2018	CBL head office	Social & Ethics Committee meeting	CBL, SSC
February 2019	STL, SNL	ESG monitoring & training	SSC
April 2019	SZL, SASL, SRL	ESG monitoring & training	SSC
	SZL, SASL, SRL	Aquatic Biomonitoring: river monitoring, using faunal indicators	Researcher from University of Cape Town
	SVL	ESG monitoring & training	SSC
May 2019	CBL Mpumalanga & Swaziland	Annual ESG Review	CBL, Trusted Partners
	QBV	Annual ESG Review	CBL, Trusted Partners
	CBL Zambia	Annual ESG Review	Trusted Partners, OPIC
	SRL, SZL, SASL	Annual ESG Review	Trusted Partners, OPIC
June 2019	CBL head office	Social & Ethics Committee meeting	CBL, SSC
	CBL head office & Renishaw	Annual ESG Review	CBL, SSC, Trusted Partners
	SVL	Annual ESG Review	Trusted Partners
	SRL	SLIC Impact Survey	Precise Research Solutions (PRS)
July 2019	CBL Murrimo	Annual ESG Review	SSC, Trusted Partners
	STL, SNL	Annual ESG Review	SSC, Trusted Partners, IFU
	CBL Deciduous	Annual ESG Review	CBL, Trusted Partners
August 2019	CBL Deciduous	ESG training at CBL Agriforum	SSC



Silverlands II	Properties	Type of visit	Participants
January 2019	Zamseed	ESG monitoring & training	SSC
March 2019	Zamseed	ESG monitoring & training	SSC
April 2019	Achill	ESG monitoring & training	SSC
May 2019	Zamseed	Annual ESG Review	Trusted Partners
June 2019	Achill	Annual ESG Review	Trusted Partners
July 2019	Zamseed	Zamseed Farm Housing Assessment	George Nicoll (independent)



*Site visits by ESG professionals naturally include invaluable on-the-ground staff training. Visits in the last year included Trusted Partners and OPIC to Zambia (left) and Trusted Partners, IFU and SilverStreet to Tanzania (below).*



*We welcome more visits in future.*

Managing ESG Aspects

## 10 Annual ESG Review

### 10.1 Overview

Annual reviews of the portfolio began in 2013 with the review of CBL. Since 2015, all portfolio companies have been reviewed. The goal is to have the review performed by an independent external every second year, yet due to limited internal capacity independent consultants have been contracted every year other than 2016.

This year Trusted Partners performed the review. The consultants had previously conducted the annual reviews and rotated between farms to maintain independence. We are comfortable in their independence and impressed with the thoroughness of their work. Detailed ESG reports were completed for each portfolio company. Below follows a summary of each.

### 10.2 Compliance with Our Responsible Investment Code

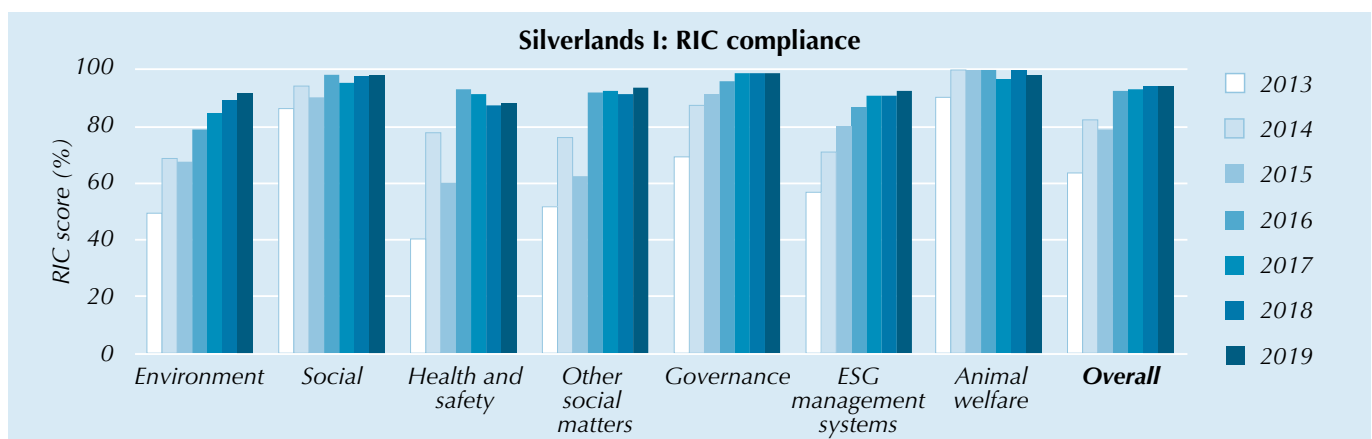
The Responsible Investment Code (RIC) is divided into seven sections. Each year portfolio companies are scored against the various topics. Although these reflect only snapshots of the performance of each portfolio company at the time of the annual review, they are a good indicator of overall performance.

#### 1 Silverlands I

We are proud to report that overall there has been a positive trend in compliance by all portfolio companies. As portfolio companies have become more established, the focus has shifted from major items to finessing the integration of ESG into the business. As such, we anticipate scores to remain in early- to mid-nineties overall, as they have for the last few years. Scores are detailed below and in the individual reports for each portfolio company.

#### Silverlands I: Responsible Investment Code (RIC) compliance

Section summary	2013 %	2014 %	2015 %	2016 %	2017 %	2018 %	2019 %	Change %
Environment	49	69	68	79	84	89	92	3 ↑
Social	86	94	90	98	95	97	98	1 ↑
Health and safety	40	78	60	93	91	87	88	1 ↑
Other social matters	52	76	62	92	93	91	94	3 ↑
Governance	69	87	91	96	99	99	99	-
ESG management systems	57	71	80	87	91	91	93	2 ↑
Animal welfare	90	100	100	100	97	100	98	2 ↓
<b>Overall</b>	<b>63</b>	<b>82</b>	<b>79</b>	<b>92</b>	<b>93</b>	<b>94</b>	<b>94</b>	<b>-</b>

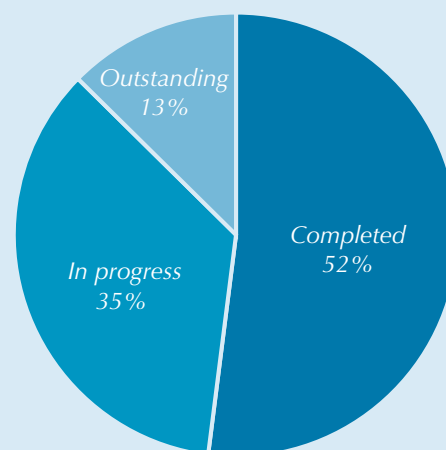


In addition to compliance with the RIC, each Portfolio Company has made significant progress on action points raised in previous ESG reviews.

## Silverlands I: Portfolio company progress against previous action plans

Portfolio company	No. of actions	Completed	In progress	Outstanding
Silverlands Tanzania	90	46	31	13
Silverlands Ndolela	43	25	15	3
Silverlands Zambia	36	21	8	7
Silverlands Agriculture Services	38	28	8	2
Silverlands Ranching	18	5	9	4
Silverlands Vineyards	24	14	10	0
Quinta da Bella Vista	13	5	7	1
Crookes Brothers	111	50	44	17
<b>Total</b>	<b>373</b>	<b>194</b> 52%	<b>132</b> 35%	<b>47</b> 13%

Silverlands I - Annual ESG review actions



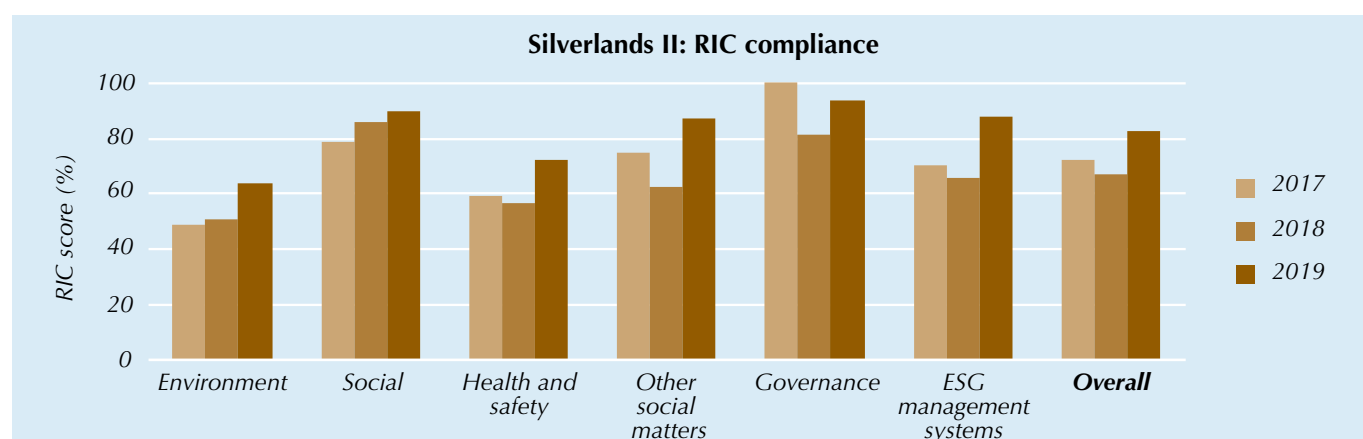
This table excludes actions which are not yet actionable.

## 2 Silverlands II

Silverlands II currently comprises two companies: Achill Island Investments (Achill) and Zambia Seed Company (Zamseed). The overall compliance level fell between 2017 and 2018 because the fund acquired Zamseed and its compliance with our ESG Code was low at acquisition (44%). The overall compliance score has improved substantially in 2019 with overall compliance now up to 82%. Implementation is ongoing and we expect scores to rise to the medium-term goal of over 90%.

## Silverlands II: Responsible Investment Code (RIC) compliance

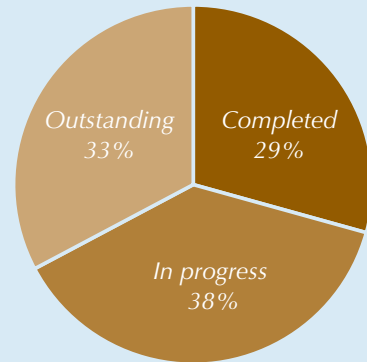
Section Summary	2017 %	2018 %	2019 %	Change %
Environment	49	51	64	13 ↑
Social	79	86	90	4 ↑
Health and safety	60	57	72	16 ↑
Other social matters	75	63	88	25 ↑
Governance	100	82	94	13 ↑
ESG management systems	71	66	88	22 ↑
<b>Overall</b>	<b>72</b>	<b>67</b>	<b>82</b>	<b>15 ↑</b>



**Silverlands II: Portfolio company progress against previous action plans**

Portfolio Company	No. of actions	Completed	In progress	Outstanding
Achill Island Investments	24	11	10	3
Zambia Seed Company	34	6	12	16
<b>Total</b>	<b>58</b>	<b>17</b> <b>29%</b>	<b>22</b> <b>38%</b>	<b>19</b> <b>33%</b>

**Silverlands II - Annual ESG review actions**



**10.3 Summary of Key Actions in Progress and Outstanding Across the Group**

**Systems**

- SEMS implementation: update procedures as necessary and ensure access to them.
- Risk assessments: incorporate new developments.
- ESG team capacity: continue with ESG training to key responsible individuals.
- H&S incident reporting: include minor incidents, ensure follow-up.
- Properly archiving ESG data.
- Emergency response: conduct drills.
- ESG performance targets and KPIs.
- Implementing EMPs from EIAs.

**Environmental**

- Fuel, oil and agrochemical storage: ongoing storage and handling improvements.
- Resource use: monitor and benchmark efficiency against production.
- Runoff water: test for presence of agrochemicals / monitor aquatic health.
- Waste management: although disposal options may be limited, improve management.
- Conservation management plans: update plans for management of non-farming areas.

**Social**

- Training: update training matrices for good planning and budgeting.
- PPE use: refresher training on PPE use.
- Contractors: improve monitoring of contractors' adherence to ESG principles.
- Housing: continue construction/refurbishments, add housing policies to employee contracts.
- Agrochemicals: refresher training on handling and storage, medical checks of handlers.
- Grievance mechanisms: improve accessibility and reporting.
- Stakeholder engagement: plan key engagements six months in advance.
- Community engagements: monitor progress.

## Appendix

Silverlands Funds I and II are subject to the following annual ESG reporting obligations:

### **Silverlands I – Reporting Obligations**

The Offering Document for the Silverlands Fund provides that the General Partner will produce an annual ESG Report that will cover:

- a) *The development and implementation of environmental and social management systems including completed training;*
- b) *ESG performance, including compliance with the Investment Code;*
- c) *The corrective measures taken and/or still required with regard to the issues listed in the ESG Action Plan; and*
- d) *Information on development impact, including any out-grower schemes.*

Additionally, a number of Limited Partners have signed Side Letters with the General Partner in which the General Partner has committed to the following reporting obligation:

*“We shall provide an annual report to any Investor who requests such a report on our implementation of the Investment Code and the performance of our investee companies against the Investment Code. The report shall include any issues, targets and a timetable for improvements, and performance over time against such targets and timetable.”*

### **Silverlands II – Reporting Obligations**

The Silverlands II memorandum commits that:

*“SilverStreet seeks to implement its ESG policy and monitor these performance standards across portfolio companies. An annual ESG report is to be produced for investors including updates on social impact initiatives.”*

### **Disclaimer**

- This report is issued by SilverStreet Capital LLP (“**SilverStreet**”) on a confidential basis to a limited number of sophisticated institutional investors for the sole purpose of providing information about the impact of SilverStreet Private Equity Strategies SICAR – The Silverlands I Fund and Silverlands II SCSp (together, the “**Funds**”). SilverStreet is authorised and regulated by the UK Financial Conduct Authority.
- SilverStreet has taken all reasonable care to ensure that the facts stated in this report are reasonable estimates of the likely impact of the Funds. Measuring impact of the various projects is by its nature a process which requires assumptions and inference based on the available information.
- All statements of opinion and/or belief contained in this report, all views expressed and all estimates, projections, forecasts or statements regarding current or future impact and projects related to such impact represent SilverStreet’s own assessment and interpretation of the information available to it as at the date of this report. No warranty or representation is made or assurance given that such statements, estimates, views, projections or forecasts are correct or that the objectives of the Funds will be achieved.
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*Murrimo  
Macadamias is a  
Crookes Brothers farm  
in northern Mozambique.  
The farm harvested 450 t of  
macadamias this year (dry  
nut-in-shell), 40% ahead of  
budget and a 1.7-fold  
increase from  
2018.*



*Crookes  
Brothers' High  
Noon deciduous farm  
in the Cape is optimally  
located in a high valley  
that is cooler than other  
areas and well suited  
to apples and  
pears.*

