



OFF THE GROUND:

INVESTING IN RWANDA'S
AGRICULTURE VALUE
CHAINS

AGRICULTURE
FOR **IMPACT**
GROWING OPPORTUNITIES
FOR AFRICA'S DEVELOPMENT



INTRODUCTION

This report is based on the experiences gained over a week-long visit by the Agriculture for Impact (A4I) team to Rwanda in February 2016 to look at various aspects of investment in agriculture value chains. TechnoServe hosted visits to two projects, the 'Strengthening Rural Youth Development through Enterprise' programme (STRYDE) in the Musanze District, and the SMS Bookkeeping Project at the Muhondo Coffee Wet Mill. One Acre Fund (OAF), known as Tubura in Rwanda, also hosted the team in Rubengera, Eastern Rwanda. The A4I team had the chance to meet with farmers who are part of OAF's core programme, with agrodealers, and also visited an OAF warehouse. Experiences gained from these visits, as well as meetings with the Rwandan Minister for Agriculture, the UK Department for International Development (DfID) and H2O in Kigali, form the base of this report.

RWANDA'S DEVELOPMENT CHALLENGES

Rwanda is a country determined to continue to build on its successes of the last 20 years that have seen its economy grow and stabilise from a once fragile and impoverished base. Rwanda has received praise for remarkable development successes over the last decade, which helped to reduce poverty and inequality levels.¹ Notable progress has been made in agricultural development and food and nutrition security, but also for women and gender equality: in 2015, Rwanda's parliament became the first in the world where women hold a majority. Women now account for 64% of members of parliament,² including ministerial positions such as the Minister of Agriculture, Gerardine Mukeshimana. In addition, GDP has rebounded with an average annual growth of 7-8% since 2000³ and average annual agricultural growth rates reached 5.7% between 2001 and 2012.⁴

Nonetheless, significant challenges remain and poor infrastructure, restricted access to electricity and limited irrigation deters important private sector investment in the country, needed to improve the livelihoods of rural populations and farming communities in particular. This has a significant impact on the broader efforts of agricultural development and achieving food and nutrition security. Increased attention must, therefore, be paid to developing the Rwandan agribusiness value chains. Stimulating innovation and entrepreneurship by offering opportunities within well-functioning farming and agri-food systems, in particular for young rural people, can help alleviate hunger, create livelihoods and support sustainable economic development.



FARMING IN A TOUGH ENVIRONMENT

Agriculture and farming remain the main economic activity for rural households, especially women, and generates more than 70% of Rwanda's export revenues.⁵ Coffee, tea and hides are among the country's main export goods, whereas domestically bananas, beans, sorghum and potatoes are popular products.⁶

Farm plots across the country have an average size of 0.6 hectares and tend to be fragmented over several locations.⁷ As a result many households actually farm as little as 0.4 hectares. Farmers use the flat land to grow crops to sell at local markets, and the steeper, more difficult to farm slopes for growing food for household consumption. An increasing population density is putting additional pressure on the scarce land, encouraging people to move on to ever steeper slopes. The mountainous landscape presents significant challenges to farmers. Farming is not only physically more demanding and tiring, but the shallow soils found on steep slopes are also prone to erosion and landslides. Approximately 1.3 million tonnes of fertile soil per year are lost in Rwanda due to soil erosion, which has a significant impact on farmers' ability to increase agricultural productivity on their small plots of land.⁸ Farmers adapt by building terraces to retain water and stop the soil moving downslope. In order to improve the agricultural use of the sloped ground, the Rwandan Government's 'Vision 2020' aims to protect up to 90% of soil from erosion by 2020 through its Crop Intensification Programme.⁹ To achieve this goal soil protection infrastructure, including terracing and agroforestry, will be implemented with support from extension

services that equip farmers with the training and skills to use and maintain these structures properly.

Despite these challenges, smallholder farmers in Rwanda are fortunate to have two growing seasons. Season A usually runs from September through to January, while season B lasts from February to June. In some areas there is also a third, shorter season, between June and September. Being able to grow at least two crops over two seasons enables smallholder farmers to survive on small plots of land and to even make a surplus to sell at the markets, allowing them to send their children to school or rent additional plots of land. The two growing seasons give smallholder farmers in Rwanda the opportunity to produce for diverse markets and hence take better advantage of the new opportunities that arise from being more integrated into emerging agribusiness value chains. In comparison, elsewhere, for smallholder farmers with only one growing season, going beyond subsistence farming remains a great challenge.

Rwanda has reduced the proportion of people living in poverty substantially, from 44.9% in 2011 to 39.1% in 2014,¹⁰ however, there are clear differences between urban areas, where 22% of people live in poverty, and rural areas, where 49% of people do.¹¹ Yet, the demand of a rapidly growing urban middle class for more varied and nutritious food presents new opportunities for the rural population, opening markets for new crops and processed foods. For this to happen smallholder farmers need to be provided with the right support and training.



VALUE CHAINS CREATE OPPORTUNITIES AND LIVELIHOODS

Value chains trace the flow of inputs, services and products from research and development into farmers' hands, from there to agricultural products at the farm gate that then move up the supply chain to the urban, regional and international consumer. Along the way value is created or added, and can be captured by farmers, entrepreneurs and agribusinesses, large and small. Ideally, value

chain development is the strengthening of mutually beneficial linkages between different actors or businesses working together to gain from market opportunities. Within the African agricultural sector, the opportunities to create well-functioning and sustainable agribusiness value chains are vast.

RWANDAN VALUE CHAINS

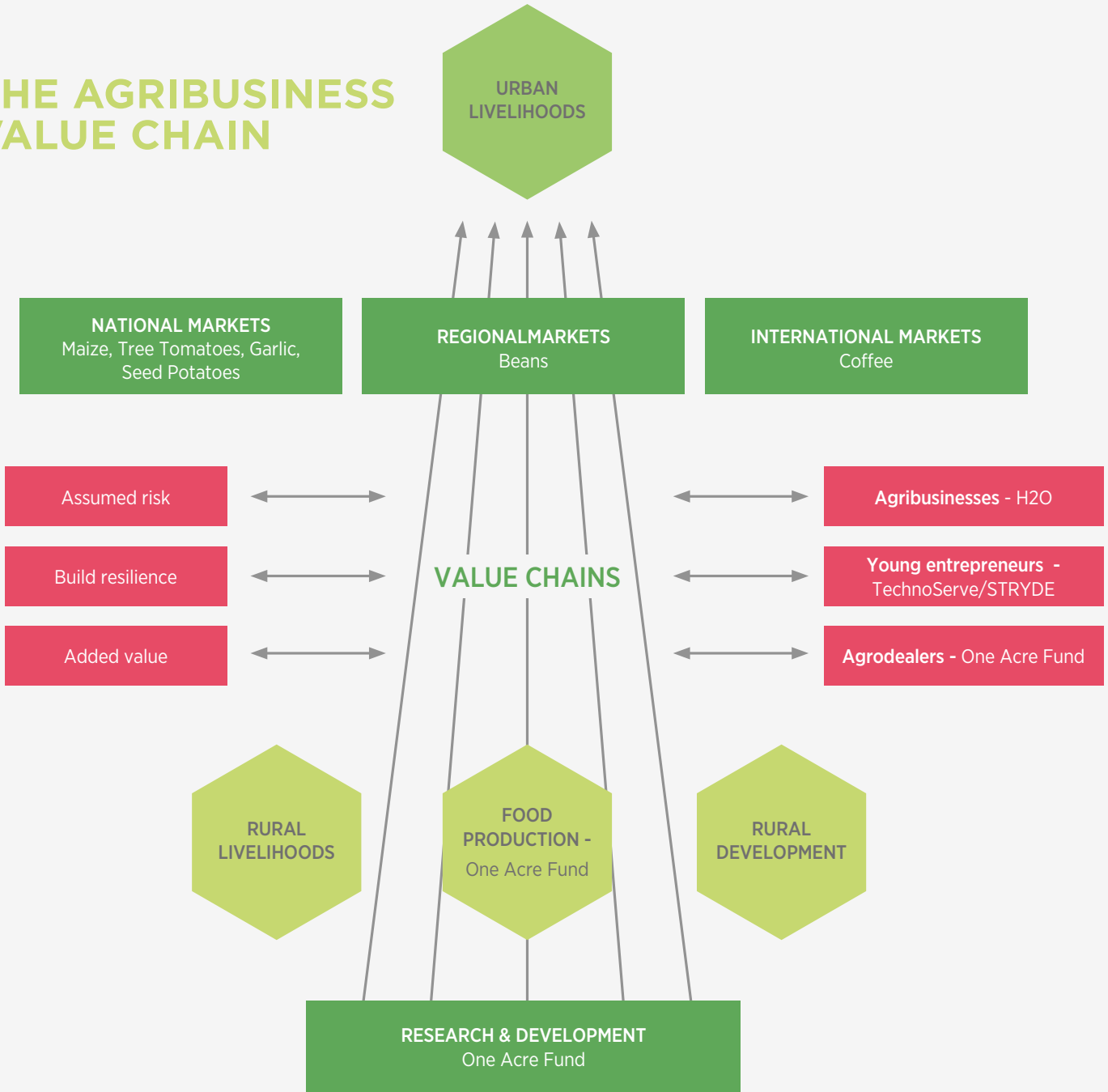
In Rwanda, OAF works with over 125,000 smallholder farmers with average farm sizes of less than one hectare of land. Through facilitated access to much-needed inputs and technical training, farmers are able to increase their productivity and incomes. OAF also conducts its own trials of different improved seeds, including long-term trials with key crops such as beans. As a result, farmers are supplied with the best possible seeds that allow them to boost their productivity.

OAF provides farmers with a package of goods and services on credit, including financing for farm inputs, distribution of seed and fertiliser, training on agricultural techniques, market facilitation to maximise profits from harvest sales, and crop insurance. The bundle costs about US\$80 per farmer and farmers are responsible for paying it back during the course of the agricultural season. In 2015, Rwandan farmers who benefitted from OAF's model saw an average gain of 53% of their total income.¹² Access to modern maize hybrids and fertilisers, appropriate for local soil needs, increases yields to an average of 3 tonnes per hectare and up to 4-6 tonnes per hectare for some farmers during season A. This allows farmers to increase productivity beyond the subsistence level, using other land to cultivate crops such as cassava and bananas for sale at the local market. From these sales, farmers can pay back their loans - OAF financing has a repayment rate of 98% - and cover other costs such as education and healthcare.¹³ By creating access to credit, quality farms inputs, markets and information on effective and sustainable farming techniques, OAF has removed some of the major barriers to well-functioning value chains for smallholders.

Such inclusive market development in agriculture will contribute to poverty reduction, improved livelihoods, and economic growth when it facilitates the integration of large numbers of smallholder farmers and rural and food sector enterprises into agribusiness value chains. While urban and industrial enterprises are crucial to African growth, governments, donor agencies and the private sector need to work together to develop stronger agriculture value chains allowing young people and smallholder farmers to harness new opportunities.



THE AGRIBUSINESS VALUE CHAIN



Lucien is an OAF customer. He joined an OAF-supported cooperative in 2009 after he learned from his neighbours that their yields had improved significantly following the training and support they received from OAF. This year Lucien planted Pan4M21, the OAF-approved maize hybrid for the second year in a row, and used compost and urea for important nutrients, provided by OAF. His yields have improved significantly compared to previous seasons. As Lucien bought these inputs from OAF on credit, he is automatically enrolled in OAF's crop insurance programme that entitles him to have a part, or all, of his loan forgiven if he experiences a major loss due to extreme weather events. He also purchased a solar lamp for his home that allows him to charge his mobile phone, which he uses to participate in an OAF mobile banking trial, and bought storage bags from OAF to store his produce after harvest. This puts him in a better position to negotiate the best possible price instead of having to sell at considerably lower prices at harvest time.



FOSTERING YOUNG ENTREPRENEURS

Rwanda, in line with trends for the entire continent, has a rapidly growing young population, with a current average age of just 18 years.¹⁴ Many of those young people live on US\$2 or less a day, and youth unemployment figures remain high, putting pressure on the government to find suitable employment for young people in both urban and in rural areas.

However, Rwanda's growing urban middle class is demanding more nutritious, varied and processed food creating new entrepreneurial opportunities for both farm households and young people through the expansion of the agribusiness value chain. Young people often see agriculture as an outdated, unprofitable, and labour intensive sector, but this is not always the case. It can be a dynamic sector with a myriad of opportunities for entrepreneurship.¹⁵

In the 2014 report, *Small and Growing: Entrepreneurship in African Agriculture*, the Montpellier Panel called for investment in agriculture value chains through strong vocational and business management training for young people and women, with affordable financing for starting and growing enterprises. TechnoServe's STRYDE programme is a good example of this approach. Between 2011 and 2014 the programme helped over 3,500 young people in rural areas in Rwanda get their business ideas off the ground and become successful entrepreneurs.¹⁶ It provides a 3-month intensive training

programme covering business management skills, financial literacy, personal development and confidence building exercises. Upon completion of the training, TechnoServe supports the STRYDE graduates to develop sound business plans and facilitates access to loans. This method is successful in empowering young people to make their businesses work and achieve their ambitions.

However, it is not just loans that are needed to catalyse entrepreneurs, but also appropriate training and aftercare. The 'Association pour la vision des Élèves de Nyonirima' (AVEN), is a group of twelve young people who decided to form a cooperative following their STRYDE training. AVEN's main business is in producing improved seed potatoes in partnership with Musanze Catholic University, which provides them with quality seeds and access to their greenhouses. AVEN received an initial loan of US\$2000 to start their potato business. With their profits, the group now aims to acquire more land, increase their harvest to up 45 tonnes per season and build a warehouse in order to store their crops before they sell them at local markets. Each member also runs a small business on the side, ranging from growing and selling garlic and tree tomatoes, owning a bar, providing mobile banking services, running a rabbit-rearing business to selling the services of their bull for cattle insemination.

Jackson is a 27-year-old STRYDE graduate from Musanze District, Northern Rwanda. After the initial three-month training, he received a US\$770 loan to start his business, growing Irish potatoes. When his business proved successful, he received a second loan of US\$900 and started growing garlic, which he now sells for US\$7 per kilogramme to brokers at the farmgate who then sell it on to buyers in Kigali. Jackson owns one hectare of land and was able to use part of his loan to rent a second hectare for US\$300 per year, allowing him to expand his business. During harvest time, he employs 10 people to help him on the farm.



Schadrack, a 25-year-old smallholder farmer from Musanze District, secured a loan of US\$1147 upon completion of the STRYDE training. The loan paid for seeds, pesticides, and the rent of 0.5 hectares of land, which he used in addition to one hectare of family-owned land to grow tree tomatoes. Tree tomatoes sell for US\$1 per kg to local brokers for sale in Kigali, and he produces 100kg every two weeks. With the additional income, Schadrack opened a bar where he employs one member of staff. In the future, he would like to expand his farming business to include growing pumpkins and garlic.

SUPPORTING AGRIBUSINESSES

Value chains containing agribusinesses offer many opportunities to break down barriers to development and create new opportunities for entrepreneurship and employment in both rural and urban areas, as well as on- and off-farm. This ranges from agricultural research and development, the distribution of inputs and warehousing to transportation, processing, marketing and trading the produce at markets.

OAF has a network of eight input warehouses in Rwanda, with the main distribution centre in Kigali. The stock in the warehouses includes fertilisers, improved or hybrid seeds for maize and beans, live plants such as seed potatoes and young banana trees, and other OAF products such as solar lights, cooking stoves and seed storage bags. The warehouses not only provide employment for local people, but they also ensure that farmers participating in OAF programmes receive their supplies and that agrodealers are stocked with quality inputs for farmers to buy.

Agrodealerships present another stage of the agribusiness value chain where opportunities for employment and entrepreneurship can be generated. For example, OAF provides agrodealers with credit to purchase OAF seed and other inputs, such as much-needed fertiliser, to stock their shops with good quality products. Agrodealers can buy OAF-approved and distributed inputs on 60% credit, such that they pay only 40% upfront and repay the outstanding amount at the end of the season. Agrodealers supported and trained by OAF can expect to make US\$2000-3000 per year in profit. This additional income enables agrodealers and their families to open another agrodealer shop, rent additional land for farming, invest in education and healthcare or use the money to start another small business.



Odette, an agrodealer from Rubengera, Western Rwanda, sells OAF-supplied seed and fertiliser that she buys on credit alongside other inputs such as seeds for vegetables, her own bean varieties, inputs for livestock, and basic farm tools. Odette also owns a small plot of land where she grows beans for consumption and sale. She also uses the land for a maize demonstration plot to highlight the benefits of applying fertiliser to her local clients. The additional income that Odette has made since she started working with OAF three years ago, allows her to send her younger children to secondary school. However, she has greater ambitions and aims to expand the business, to stock a greater variety of products and to increase her customer base. Eventually, she would like her shop to operate as a local distribution centre, selling to middlemen who can then sell on her products to more remote areas. She also has ambitions to open a second shop, staffed by her adult children.



Finally, to add value to crops, through for example the processing of a crop by husking or milling grain, or by washing and depulping coffee, new employment opportunities also become available in food processing and manufacturing, as well as in marketing and retailing the products to consumers. Thereby, locally grown crops are used to produce high-quality products, creating much-needed jobs and increased incomes for people in rural areas.

There are, however, many barriers to realise the opportunities along the agribusiness value chain. Young people and women, in particular, are often stifled by limited access to finance, low levels of skills and education, few market opportunities and lack of a broader institutional support.¹⁷ Substantial investment and support are therefore needed to equip young rural people with the necessary skills, technologies and access to finance to harness the opportunities the agribusiness value chain can offer.



Muhondo Coffee Company Ltd is a private business that has operated as a coffee washing station in Northern Rwanda since 2006. The company is able to access a working capital loan from a bank thanks to a web-based tool developed by TechnoServe. The tool allows the company's accountant to input financial information on a daily basis by sending an SMS to the web-based system, which the bank also has access to. The bank can monitor how the loans are being used, and how much money is coming back into the business. Like this more working capital can be lent to Muhondo, which means the business can run at a greater scale and grow in capacity. Muhondo now works with over 1,800 small farmers, 40% of whom are women. A government-regulated price is paid to farmers when the cherries are bought, and if a profit is made on the sale of the washed and dried beans, this is distributed back to the farmers, ensuring that they get a good price for their produce.



FILLING THE INVESTMENT GAP

Although agribusiness value chains are starting to emerge, there are still many visible barriers to well-functioning, inclusive value chains. Smallholder farmers in rural areas lack access to good quality inputs and training, to good warehousing to store their crops post-harvest, to finance to rent additional land to grow more produce and increase their income and to opportunities to add value to their produce. It is important that these gaps are filled in order for value chains to offer smallholders the appropriate services that they need to grow their businesses. As such, these gaps present opportunities where public and private investment can have a substantial impact on smallholders and their livelihoods.

H2O, a Kigali-based venture partnering organisation, has been working with public sector organisations, donors and smallholder households to identify such value chain gaps. H2O develops business plans that provide appropriate, scalable services to smallholders and recruits a business manager to help get the business off the ground. The manager receives mentoring alongside a small fund of US\$100,000-150,000 to run a one-year pilot phase. After a successful pilot phase, businesses receive additional investment to grow and scale-up.

In 2015 H2O helped to start five businesses that provide diverse services such as warrantage, bean processing, plant health expertise and appropriate inputs, access to tools and machinery, and hybrid maize. By 2020, H2O aims to reach 500,000 farming families, with a net return of US\$375 million.¹⁹ This plan is ambitious but demonstrates that by identifying existing gaps in the value chain, investments can have a considerable impact on rural farming households while generating a profit for the investor.

The Government of Rwanda has also made significant efforts to implement an extension programme to equip smallholder farmers with the necessary skills to apply more sustainable farming techniques or use the right inputs for their soils and crops. The Rwandan Agricultural Board (RAB) uses the well-established local government structure, whereby the country is divided into districts, sectors, cells and villages. Each level down to cells has

an office, where an agronomist oversees agricultural productivity in a particular area. Through a formal relationship, OAF staff is embedded at RAB head offices, to develop an efficient extension system that uses about 13,000 specially trained farmers, known as Farmer Promoters (FPs), who volunteer to work in their own village in return for receiving training at the start of each season. Farmers trained by FPs can expect to generate US\$26 per year of additional income. While this is a modest rise in income compared to OAF's core programme, where participating farmers can expect an income boost of about US\$100 per year, the scale and reach are far greater as the FP programme is designed to reach every village in Rwanda.

Sarura Commodities Ltd Founded in 2012, Sarura is a private warehousing company that receives support from H2O. Sarura provides commercial inventory-credit financing, crop storage and trading services, known as "warrantage", to smallholder farmers. Under the warrantage model, farmers receive an initial payment when crops are deposited in the Sarura warehouse, equivalent to 60% of the harvest value, and the second payment of 40% of the post-harvest sale when the crops are sold at a higher price. For example, if a farmer has a harvest of 0.15 tonnes of beans and 0.35 tonnes of maize, she can expect to make an additional US\$24 by using the Sarura warrantage system, representing a 51% increase in profit compared to selling at harvest time. In the pilot year, Sarura served 231 farmers, storing 145 tonnes of beans and 158 tonnes of maize. It proved a successful enterprise, and in 2013 received further funding to expand to serve almost 3,500 farmers. While still in need of further investment in order to become fully self-sustaining, by the end of 2016 Sarura expects to have constructed 30,000 tonnes worth of storage in order to serve 300,000 farmers, unlocking US\$7.5 million in additional household income.¹⁸



CONCLUSION

There are grounds for optimism for Rwanda's food sector value chains. Strong and well-functioning agribusiness value chains are providing opportunities for entrepreneurship and employment particularly for smallholder farmers and young people in rural areas. The agriculture sector is ripe with opportunities that need to be harnessed to improve livelihoods, strengthen rural economies and to allow smallholder farmers to diversify to other crops or livestock and to off-farm activities to improve their incomes and increase their resilience to socio-economic shocks and climatic stresses.

To strengthen these value chains, more and better-targeted public and private support and investment are needed at each stage of the value chain, including the training and education of a new generation of young people. Governments, donors and the private sector can make valuable contributions, often in partnership, that allow the rising number of young people to get their ideas and dreams off the ground. The work by One Acre Fund and TechnoServe highlights interventions at different stages of the agricultural value chain that are impactful, scalable and can offer lessons for other countries.



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