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The future of farming in Zimbabwe:

Realising a resilient, inclusive and sustainable agricultural future

by Steven Pocock

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Executive Summary

This report explores how Zimbabwe can build a more prosperous and food-secure future through effective and inclusive agricultural models. The ideas and concepts within are shaped by extensive travel within Zimbabwe, as well as across Brazil, New Zealand, Canada, the United States, Kenya and Australia. By considering how the current state of agriculture in Zimbabwe has been shaped by the country's history, as well as considering lessons, practices and innovations from around the world, the report identifies pathways that are both politically feasible and economically viable. The emphasis is on outlining how Zimbabwe can move from subsistence traps toward a modern, market-linked, and climate-resilient agricultural economy.

During the first half of the 20th century, the colonial state established a highly productive commercial agricultural sector within a relatively short period, marked by significant investment in infrastructure, research, and extension services. This system underpinned strong agricultural output and export performance and was accompanied by improvements in public health and education that serviced the broader population, including African communities. However, these achievements were founded on a range of colonial policies that systematically dispossessed African farmers and created a dual economy in which large, well-capitalised estates occupied the most fertile land while communal areas were overcrowded and under-resourced. This inequality became deeply entrenched and persisted after independence, as market-led land redistribution in the 1980s and 1990s achieved only limited redress. The Fast Track Land Reform Programme (FTLRP) of the early 2000s dramatically accelerated the redistribution of agricultural land. While politically decisive and effective in redistributing land, it did so at the expense of agricultural productivity and led to the total economic collapse of the nation.

Since 2018, the state has re-oriented its agricultural policy away from redistribution alone and towards productivity, resilience, and investment. National programmes such as Pfumvudza, Command Agriculture, and the Presidential Input Scheme seek to stabilise food supply. Joint ventures have proliferated, with more than 2,700 approvals covering approximately 234,000 hectares, and irrigation expansion is a government priority. Agriculture continues to employ around two-thirds of the population, yet most smallholders remain locked into low-yield systems that are highly vulnerable to drought and poorly integrated into value chains.

Several constraints continue to undermine progress. Productivity in communal areas and smallholder plots is persistently low. Tenure remains insecure and non-bankable. Extension and research linkages are weak, leaving farmers without the agronomic and business support needed to raise yields. Policy inconsistency and execution failures further erode confidence.

Climate stress compounds these weaknesses: increasingly frequent droughts and erratic rainfall expose the fragility of rainfed systems and degraded lands. Finally, value chains remain fragmented, with limited aggregation, processing and logistics infrastructure.

Despite these challenges, important opportunities have emerged. Joint ventures and outgrower models have demonstrated that underutilised land can be recapitalised and linked back to markets. The horticulture sector is growing, earning over US$100 million annually. Irrigation development, if managed through professional and sustainable frameworks, has the potential to decouple production from unreliable rainfall. In marginal farming areas, diversification through wildlife economies and carbon markets presents a valuable source of income.

Drawing on my Nuffield experiences and what I learned by engaging with over 100 farmers, agribusinesses, researchers and policymakers from around the world, I recommend seven strategic shifts that will build on progress to date, and further accelerate steps towards a prosperous agricultural future for the country:

- Principle 1: Promote and support established large-scale commercial producers.
- Principle 2: Reduce reliance on subsistence farming through targeted extension services.
- Principle 3: Capitalise on advancements through plant breeding and improved genetics.
- Principle 4. Ensure effective utilisation of strategic infrastructure such as irrigation schemes.
- Principle 5. Address land title and bankability of land.
- Principle 6. Strengthen market access and build a market-linked agricultural economy.
- Principle 7. Tailor land uses to the realities of climate change.

Zimbabwe's agricultural sector stands at a pivotal juncture. The structural legacies of the FTLRP and the productivity collapse of the early 2000s cannot be ignored, but neither should they define the future. The way forward does not lie in identifying entirely new solutions, but in executing well-understood ones with urgency, credibility, and scale. Secure land rights, modern institutions, market-linked value chains, and climate-resilient practices are all within reach. With political commitment and genuine partnerships across scales, Zimbabwe can construct an agricultural architecture that is inclusive, competitive, and sustainable. The task now is to move decisively from rhetoric to delivery.

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Foreword

By Brian Trethowan, citrus farmer in Beitbridge Zimbabwe, neighbour and good friend

September 2025

In 1965 my father-in-law, Chris Cunliffe, and his good friend Ian Ferguson scraped together their meagre savings and their young families and moved to Beitbridge; the hottest, driest, harshest part of Zimbabwe to start farming and make their fortunes. These brave, hard-working farmers suffered through a terrible civil war, the Gukurahundi genocide, droughts, floods, hail, bankruptcy, farm acquisitions, malaria, super hyperinflation and the loss of both of their wives at a young age – and they made and lost their fortunes.

In the 1980's both myself and Steve's dad, Andy, came to work for our fathers-in-law – Mr Cunliffe and Mr Ferguson. Andy came with his great enthusiasm, energy, experience and expertise. I, having been a policeman and auditor, came only with a distrust of everyone. We can both contest that working for family on a farm is NOT at all easy. Andy and Jane later moved back to their family farm in Gweru and produced three hectic boys Dave, Mike and Steve, often referred to as "those Pocock boys".

When the Zimbabwe Fast Track Land Reform started in 2000 (and still lingers to this day), it was a tumultuous time for our country. It was supposedly to rectify the historical inequalities of the colonial era, but in truth was much more sinister. The targeted white commercial farmers dropped in number from over 5,000 to 85. Over 400,000 farm workers lost their jobs. There were massive food shortages, hyperinflation, and 85% unemployment, which resulted in an increase in crime for survival. It is estimated at least a third of the population (three to five million people) left to neighbouring countries doing low skilled and insecure jobs in tenuous circumstances and with a real threat of xenophobic attacks.

Gweru was no exception. The Pocock's neighbour was murdered, and the family was forcefully removed from their farm. Andy made the right decision of moving his young family to Australia in 2002. The move was not easy for the family. Steve suffered serious PTSD from the horrific eviction and the events surrounding it, but they all realised their privilege and the opportunities now available to them, and they all took up the challenge and excelled. As a result of Steve's traumatic experience, he decided to embark on a career seeking to improve the lives of those less fortunate. After five years working in Papua New Guinea, Steve returned to Zimbabwe in 2021 and teamed up with great team of young people to start the Rangelands Regeneration project.

This is when I first really got to know Steve. When I heard Steve was to be CEO of Rangelands and having only heard of his childhood 'challenges', to be honest my expectations were modest and I was personally hoping to have been more involved with my hero, Steve's brother and Australian rugby legend, Dave. Steve and his kind and beautiful fiancé Anna-Clare arrived at the height of one of our hottest summers (44°C+ and humidity at 90%). They moved into a rundown old house with no water or electricity. His job was to persuade a rural community to take a chance on an audacious conservation project. He did not speak the language, he did not know his way around the vast area he was engaging with and had no experience with Zimbabwe's insidious politics and corruption and yet he was dealing with the most difficult problem of all – land. It seemed only a matter of time before he left.

How wrong I was. Steve arrived with a smile on his face, which never left. He was granted an audience with our President, who gave his approval for Rangelands. He quickly earned the respect of the strange and hardened farmers in the area and built up a friendship with the local Chief. He persuaded a community of over 20,000 people to commit to his vision of forming a vast wildlife conservancy. He set up a crack Anti-Poaching Unit and a Herding for Health project. He established a Livestock Business Centre, which became the most successful sales pen in the district. He sourced and distributed 5,000 eco stoves for each of the households in the district, as well as securing 1,000 Buffalo Bikes at a 66% discount, and he attended COP28 in Dubai.

Despite the terrible circumstances in which his family left Zimbabwe, Steve had always maintained a strong connection with the country. Rangelands' mission was to contribute to the development of the country and its people. The journey for Steve was to be one of deep fulfilment and hope yet was immensely challenging. Despite Steve's optimism, boundless energy, enthusiasm and humour, in the end Rangelands and Steve's vision of uplifting a community whilst conserving wildlife fell short of becoming the replicable and scalable model he envisaged.

As Rangelands scaled back, Steve became increasingly interested in agriculture and immediately started to resuscitate his grandfather's farm, which had been devastated by the land reform. Only 120 ha out of the 1,200 ha was left for the family. Steve hired a bulldozer and cleared the bush encroachment. He sunk boreholes and erected a solar array to power them and fenced and planted 7,000 citrus trees under microjet as the first stage.

This coincided with Steve's Nuffield Scholarship and study topic on Future Farming Models for Zimbabwe. Steve believes there are new ways of doing things in Zimbabwe that can transform the lives of the 11 million people who rely on agriculture for their livelihoods. As always, Steve approached the Nuffield experience with enthusiasm and an open mind and

travelled to Brazil, New Zealand, Canada, the United States, Kenya and Australia. He worked hard and played hard – especially, I believe, with the Irish.

Steve writes his report from a position of hope and optimism for the future of Zimbabwe. It is not intended to criticise or dwell on issues from the past, as, to be honest, every single Government since 1923 has done many things wrong. Instead, he would rather acknowledge key historical events and their implications in order to make informed recommendations about what it will take for Zimbabwe to again be the regional leader in agriculture.

I believe the readers will find this publication fascinating. Steve has a unique way of analysing complex and controversial topics, deciphering them and reporting his insights with remarkable clarity. His forthright approach, combined with a refreshing blend of humour, enthusiasm and passion makes his analysis both insightful and accessible. I look forward to seeing where Steve takes his talent and energy next and the greater impact it will surely have.

Acknowledgments

Firstly, I must thank Nuffield Zimbabwe for affording me the privilege of being a Nuffield Scholar. Nuffield Zimbabwe is a small organisation, with a rich history and long legacy, and I admire the efforts of the current leadership and board for resurrecting the scholarship in recent years. I'll be doing all that I can to give back and ensure that Nuffield Zimbabwe continues to build the country's next generation of agricultural leaders.

I must also acknowledge and say a big thank you to the Henson family, through Driptech, for their ongoing sponsorship of Nuffield Zimbabwe, and for funding my scholarship.

To the broader Nuffield community: scholars, alumni, hosts in various countries around the world, the Nuffield Australia secretariat, and my GFP 6 team – I never dreamed of having such rich experiences and making deep and lifelong friendships and look forward to supporting each other in our pursuits into the future.

To Mr Maphala and the Rangelands Regeneration team: I'm incredibly proud of what we've built and achieved together. Thank you for all that you've taught me, as well as for keeping everything running smoothly whilst I was away on my Nuffield travels.

To the Beitbridge farming community: the Trethowans, Cawood, Nottingham, Vanessa Bristow and others – I was the least qualified of the Beitbridge farming community to do a Nuffield scholarship, but thanks for your encouragement, feedback, and support.

To my parents, Jane and Andy, and brothers, Michael and David, who would have thought that I'd be the farmer of the family! I appreciate your ongoing love and support, particularly as I returned and invested my life into a place that still holds some tough memories and pain.

Finally, a huge thanks to Anna-Clare, my fiancé, for moving to rural Beitbridge with me, embracing all the obstacles and challenges thrown our way, and bringing immense joy to my life every day.

Figure 1: In the sandhills of Nebraska, USA, with host Bart Ruth and my Nuffield Global Focus Program team

Abbreviations

- A1 – Smallholder farms created under the Fast Track Land Reform Programme
- A2 – Commercial-oriented farms created under the Fast Track Land Reform Programme
- CA – Command Agriculture
- CSA – Climate Smart Agriculture
- ESG – Environmental, Social and Governance
- FTLRP – Fast Track Land Reform Programme
- GFP – Global Focus Program (Nuffield)
- GMO – Genetically Modified Organism
- JV / JVs – Joint Venture(s)
- PIS – Presidential Input Scheme
- PPP / PPPs – Public–Private Partnership(s)
- USA – United States of America
- US$ – United States Dollar

Objectives

This report explores how Zimbabwe can build a more prosperous and food-secure future through effective and inclusive agricultural models. The objectives of this Nuffield report are to investigate the historical, current, and future dimensions of Zimbabwean agriculture, drawing on both domestic insights and international best practices. Through the report, I specifically seek to:

- Examine the historical context of Zimbabwean agriculture to understand how colonial legacies, land reform, and political dynamics have shaped current production systems.
- Evaluate the present state of agriculture in Zimbabwe, including dominant farming models, government programs, and productivity challenges.
- Analyse the major barriers to agricultural development – such as insecure land tenure, limited access to finance, and declining productivity – and how they impact different farmer categories.
- Investigate key lessons, principles and production models being implemented in Zimbabwe and internationally, with the potential to scale up or adopt in the country.
- Recommend future farming models, policy reforms, and strategic enablers that can drive productivity, equity, and resilience in Zimbabwe's agricultural sector – making Zimbabwe a regional leader in agriculture.

Introduction

When I moved back to Zimbabwe, the country of my birth, in January 2021, I was embarking on an ambitious project that sought to develop a replicable and scalable land-use model for the country – a model that would transform lives of rural communities whilst also addressing severe and long-term land degradation challenges. Four years into the project, when I was commencing my Nuffield scholarship, the context suddenly changed. In a short period of time we made the tough decision to scale back most of our operations, accepting the harsh reality that we had fallen short of what we set out to achieve.

My Nuffield travels, therefore, became a timely opportunity to look back on my time immersed in the rural landscape of south-west Zimbabwe, getting perspective on what we could have done differently, whilst also, more importantly, looking forward and exploring other opportunities and models to secure and accelerate Zimbabwe's agricultural future.

Agriculture has always been central to Zimbabwe's identity – economically, politically, and socially. It has been both a driver of national prosperity and a source of conflict, disempowerment, and inequality. Today, as Zimbabwe continues to navigate its post-land reform era, the question remains: what models of agricultural production can sustainably support food security, drive inclusive economic growth, and restore the country's position as a regional leader in agriculture?

This report begins with an exploration of the historical context of agriculture in Zimbabwe. Understanding this context is essential for any future-facing strategy to be grounded, inclusive, and politically viable. From there, I assess the current state of Zimbabwean agriculture, examining existing farming systems and production models. This includes commercial farms, communal and resettlement areas, joint ventures, and community-led initiatives. I also highlight the key challenges facing the sector today: low productivity, insecure land tenure, barriers to finance, limited access to technology, and the growing threat of climate change.

In the third chapter, I reflect on the lessons and innovations I observed during my Nuffield travels and consider their relevance to Zimbabwe. These include highly intensive and mechanised farming systems that maximise productivity through technology and precision practices; the dilemmas posed by low-cost labour in Africa, where short-term competitiveness may come at the expense of long-term productivity and dignity; and the critical role of plant breeding and genetics in driving sustained yield improvements and resilience to climate change. I also highlight how climate impacts are already reshaping agricultural systems worldwide, reinforcing the urgent need for increased emphasis on strategies to boost climate resilience in Zimbabwe.

In the fourth chapter, I turn from global lessons to the Zimbabwean context, outlining the structural challenges facing the sector and setting out seven principles to unlock its potential. These include actively supporting large-scale commercial producers as engines of jobs, exports, and knowledge transfer; addressing land tenure and bankability to attract investment; and reducing reliance on subsistence farming through differentiated, targeted extension services. I also highlight the importance of advancements in plant breeding and genetics, the need to embed irrigation and other strategic infrastructure within commercially oriented and professionally managed models, and the central role of market access in ensuring farmers capture more value for their products. Finally, I emphasise the necessity of aligning land use with Zimbabwe's diverse agro-ecological regions, encouraging climate resilient and sustainable practices in arid and marginal zones, and embracing opportunities in carbon projects and the wildlife economy.

Throughout the report, a consistent thread is the need to move beyond subsistence and low-intensity farming models that trap people in cycles of poverty. Instead, I argue for a transition towards intensified, market-linked, and professionally managed agricultural systems that are accessible to a broader range of Zimbabweans. This transformation will not be easy, but it is possible and necessary.

Ultimately, this report is not just a reflection of a Nuffield journey or a professional investigation. It is also a deeply personal contribution to a national conversation about how agriculture can once again become a force for prosperity in Zimbabwe. It is my hope that the ideas presented here will serve as a useful resource for policymakers, farmers, investors, and anyone committed to the future of Zimbabwean agriculture.

Chapter 1: Historical context and importance of agriculture in Zimbabwe

This chapter presents a brief history and analysis of agriculture in Zimbabwe; from pre-colonial practices through to colonial land policies, post-independence land reforms (1980–2000) and the Fast Track Land Reform Programme (early 2000's), into the current 'New Republic' era (2017 onwards). It assesses changes in agricultural productivity, the economic contribution of the sector, and dominant farming models in use throughout each period.

Pre-colonial agricultural foundations

Prior to British colonisation in 1890, in the area now known as Zimbabwe, the Shona and Ndebele, and other smaller ethnic groups, practised subsistence farming and pastoralism, relying on diverse crops and livestock under communal land tenure systems (Palmer, 1977). Their agricultural practices were based on indigenous knowledge, having cultivated traditional grain crops such as millet and sorghum for nearly two millennia (Palmer, 1977). Shifting cultivation was common, and fields were rested through rotation, allowing the soil to regenerate (Government of Zimbabwe, 2022). Livestock, and in particular cattle, held great cultural and economic value (Government of Zimbabwe, 2022). Subsistence farming was supplemented by seasonal gold mining and hunting in some areas (Prendergast et al., 2019; Manyanga, Munyaradzi & Mangeti, 2017).

Land in Zimbabwe's pre-colonial societies was characterised by communal ownership, held in trust by traditional chiefs and lineage elders. Land was perceived by these indigenous communities as a sacred trust, rather than a commodity to be bought and sold (Makanyisa, Chemhuru & Masitera, 2012). There was also a deep and spiritual connection to the land that was held by pre-colonial peoples (Ranger, 1999).

Colonial land policies and their impacts

When British colonists arrived in the 1890s, they initially hoped to exploit rich mineral deposits, particularly gold. These hopes largely failed to materialise, with yields far lower than expected and new ventures not covering their costs (Makanyisa, Chemhuru & Masitera, 2012). Consequently, land settlement and agriculture quickly emerged as the new primary source of wealth and profit for the settlers (Nyandoro & Andersson, 2025).

This shift led to the systematic dispossession and displacement of indigenous populations and the entrenchment of racial segregation. While the 1888 Rudd Concession between Cecil Rhodes, the British South Africa Company, and King Lobengula formally granted exclusive

mineral rights, it did not clearly confer ownership of land. It was the subsequent Lippert Concession of 1891 that effectively consolidated colonial claims to the land itself. The Lippert concession granted sweeping powers to lay out, grant, and lease farms and townships for a period of one hundred years. Although the authenticity of the Lippert concession was initially contested, it was ultimately acquired by the BSAC and became a cornerstone of chartered land rights in Southern Rhodesia, providing the legal basis for large-scale settler land allocation (Hubbard 2017). Wars of conquest and resistance were fought in 1893 and 1896–97, and the British South African Company undertook large-scale land seizures upon their victory (Keppel-Jones, 1983).

'Native Reserves' were created as early as 1894, dispossessing indigenous people of their land and moving them into areas with erratic rainfall, hot climates, and infertile soils. The main Matabeleland reserves were completed by 1898 and those for Mashonaland and Manicaland by 1902. They were formalised circa 1908 and reconfirmed in the 1923 constitution. This system was further entrenched by the Land Apportionment Act of 1930, which legally partitioned the colony's land by race (Makanyisa, Chemhuru & Masitera, 2012). The best farming regions with higher rainfall and better soil were reserved for white settlers, while indigenous communities were restricted to the less fertile, lower rainfall areas that were later called 'Tribal Trust Lands'. The severe overcrowding in the reserves also precipitated widespread environmental damage, including deforestation and soil erosion, rendering their traditional farming techniques unviable in these confined spaces (Whitlow, 1998). The Land Apportionment Act also prohibited Africans from purchasing land outside designated Native Purchase Areas (NPAs), which were often of poor quality and geographically isolated from transportation networks and markets (Green & Nyandoro, 2024). While NPAs were intended to allow people in the reserves to move onto their own farms if they had the necessary capital and had completed Master Farming certification, in practice relatively few were able to do so. Instead, many remained constrained within the reserve system or moved to urban areas in search of employment and relief from restrictive rural administration (Shutt, 2002).

Colonial-era policies significantly reshaped agricultural and economic structures in Zimbabwe by privileging settler production while constraining indigenous participation. Legislation such as the Maize Control Act of 1931, which limited how indigenous farmers could market their produce (Ncube, 1987), the Native Land Husbandry Act of 1951, which attempted to regulate land use and livestock ownership but ultimately met strong resistance (Kunicki, 2017), and the Hut Tax Ordinance of 1894, which pushed many Africans into wage labour (Moyana, 1976), all contributed to shifting labour patterns and agricultural roles. Once in wage employment, measures like the Industrial Conciliation Act of 1934 restricted skilled positions to white workers (Barber, 1959).

At the same time, settler farmers developed a well-supported commercial agriculture sector that expanded key cash crops including tobacco, cotton, sugar and coffee, and achieved exportable maize surpluses as early as 1909 (Kwashirai, 2006). Backed by research institutions established from 1909, irrigation investments, and sustained government support in areas such as credit, inputs, marketing systems and infrastructure, white commercial farmers consolidated productive capacity (Tawonezvi & Hikwa, 2006; Nyandoro & Andersson, 2025). By the 1960s and 70s, this system had resulted in a white settler farming community of around 6,000 producers controlling the most fertile land and contributing most of the marketed output, while most indigenous farmers remained in less-resourced areas and engaged largely in subsistence production (Government of Zimbabwe, 2022).

Post-independence land reforms: The first two decades (1980–2000)

Upon achieving independence in 1980, Zimbabwe's economic and agricultural system was unequal and racially segregated. Approximately 6,000 white commercial farmers (less than one percent of the population) controlled a disproportionate 40% of the country's farmland, which produced 40% of GDP and 60% of the country's export earnings (International Monetary Fund, 2020). The Lancaster House Agreement of 1979, which facilitated the transition to independence, provided the initial legal framework for land redistribution. It included sunset clauses that protected white farmers from compulsory land acquisition for the first ten years, stipulating a 'willing buyer, willing seller' principle and requiring 'prompt adequate compensation' for any acquired property (International Monetary Fund, 2020).

This market-based approach proved largely ineffective in addressing the land imbalances. A large driver being that the financial support from international donors for compensation was often insufficient or conditional, and the Zimbabwean government was not able to commit the full quantum of funds required. Consequently, progress in land transfer was significantly slower than anticipated (Thomas, 2003). By 1997 only an estimated 71,000 families (against a target of 162,000) had been resettled on approximately 3.5 million hectares of land (Government of Zimbabwe, 1998). By the 1990's it became clear that the 'willing buyer, willing seller' model was proving inadequate – the status quo was being maintained and unfulfilled expectations of indigenous people was leading to growing discontentment.

After the Lancaster House provisions expired in 1990, the government amended the constitution to allow compulsory land acquisition. The 1992 Land Acquisition Act further strengthened these powers, enabling the government to acquire land without the owner's consent, with 'fair' compensation determined by a committee rather than market rates. Despite

this, the pace of land reform declined in the 1990s, with less than one million hectares acquired and fewer than 20,000 families resettled (Human Rights Watch, 2002).

The slow pace of land reform, coupled with a deepening economic crisis, intensified political and social pressures. Many indigenous Zimbabweans continued to experience poverty, and liberation war veterans formed the War Veterans' Association in 1989 to advocate for increased government assistance and compensation for their liberation efforts. At this time, the Government of Zimbabwe started to face challenges on several fronts. An economic crisis started to develop as the country had to direct export earnings to service its debt to the World Bank. Devastating droughts in 1992 and 1995 worsened agricultural output and overall economic conditions. In late 1997, President Mugabe's unanticipated announcement of large unbudgeted payouts to war veterans triggered a 72% devaluation of the Zimbabwean dollar and 46% plunge in the stock market (Kariza, 2007). This economic pressure, combined with the slow pace of land reform, intensified the demand for land and contributed to the political instability that ultimately culminated in the Fast Track Land Reform Programme (Human Rights Watch, 2002).

Meanwhile, politically, the emergence of a strong opposition party, the Movement for Democratic Change (MDC), in 1999, which garnered support from white Zimbabweans, posed a substantial threat to the ruling ZANU-PF party (Human Rights Watch, 2002). A critical turning point occurred in February 2000 when the government was defeated in a national constitutional referendum, which included a clause on land redistribution (United Nations, 2000). This defeat, coupled with the escalating political and economic pressures, served as a catalyst for the radicalisation of land reform. Land reform therefore became a tool for political survival and power consolidation, rather than solely a planned developmental strategy.

The Fast Track Land Reform Programme (2000-2017)

The Fast Track Land Reform Programme (FTLRP), initiated in 2000 and formally underpinned by the Land Acquisition Act of 2002, represented a significant and often violent departure from previous land reform efforts (Mkodzongi & Lawrence, 2019). FTLRP abandoned the 'willing buyer, willing seller' principle, enabling compulsory land acquisition without compensation for the land itself. This policy shift was accompanied by a shifting political environment, leading to land allocations driven more by political considerations than technical or agricultural viability, which in turn caused donor support for land reform to dissipate (International Monetary Fund, 2020). Land was often distributed preferentially to those aligned with ZANU-PF, while opposition supporters or independents were systematically excluded from allocations (Scoones et al., 2010). Concurrently, political elites and their families often amassed multiple

farms, contradicting equity rhetoric and exacerbating elite capture of prime agricultural assets (Matondi, 2012).

Under the FTLRP, land was redistributed from predominantly white-owned commercial farms and state lands to more than 150,000 households, primarily through two distinct models: A1 and A2 (Mkodzongi & Lawrence, 2019). The A1 Model involved the allocation of small plots (typically less than 10 hectares) for crop cultivation and grazing land. Most A1 beneficiaries were former communal area farmers. In contrast, the A2 Model aimed to establish larger, commercially oriented farms, allocating land to new indigenous commercial farmers who were expected to possess the necessary skills, resources, and a viable business plan to farm profitably (Mkodzongi & Lawrence, 2019).

The immediate impacts of the FTLRP on agricultural productivity, food security, and the broader economy were severe and overwhelmingly negative. The program led to a significant decline in aggregate national agricultural production (International Monetary Fund, 2020). The FTLRP triggered a broader economic collapse, characterised by hyperinflation and a significant contraction of the economy. Unemployment rates soared, and economic turmoil led to widespread food shortages and a humanitarian crisis marked by extreme poverty and hunger across the country (Bushu & Kufakurinani, 2024).

The FTLRP achieved a massive redistribution of land, however it came at a severe cost to national agricultural production and the broader economy. While some beneficiaries experienced improved livelihoods, commercial agriculture largely collapsed (International Monetary Fund, 2020; Mkodzongi & Lawrence, 2019). The FTLRP also exposed the critical dependence of agricultural productivity on a robust ecosystem of financial services, input supply, and secure land tenure. The previous commercial agriculture sector had thrived on consistent government credit and subsidies. Simply redistributing land without addressing these foundational elements meant that new farmers, despite having physical access to land, could not achieve the same levels of productivity as the former commercial farmers. Land is therefore a necessary, but insufficient condition for agricultural success.

The FTLRP spurred the emergence of new farming models that responded to the land ownership changes. One example is contract farming, which quickly gained prominence, particularly in the tobacco sector. Smallholder farmers (including those in A1 and communal areas) have become the largest suppliers of tobacco, a notable shift from the pre-reform dominance of large-scale white farmers (Sithole, 2019).

Fundamentally, the FTLRP was a political act aimed at consolidating power and addressing deeply rooted historical grievances, rather than a purely technocratic agricultural reform. The program was driven by political imperatives and politically driven land allocations often co-opting spontaneous invasions and leading to violence and vandalism.

Agriculture in the New Republic (2018 onwards)

The period following President Mugabe's removal from power in late 2017, referred to as the 'New Republic' era, has witnessed a renewed and explicit focus on revitalising and modernising Zimbabwe's agricultural sector. The negative impacts of the FTLRP have been acknowledged, with President Mnangagwa in an interview in 2018 stating:

> *The critical thing is that during land reform, productivity collapsed totally, we moved from self-sufficiency to an insecure nation. We began importing – we became a beggar (Nehanda Radio, 2018).*

Under the New Republic, Zimbabwean agriculture has moved forward through the advent of joint venture partnerships, mainstreaming of conservation agriculture techniques and other innovations. The shift from a redistribution focus to productivity-oriented reforms is evident. Post-2018 policies explicitly emphasise modernisation, investment, sustainable production, and food security (Government of Zimbabwe, 2019). This contrasts with the FTLRP's primary objective of redressing historical land imbalances, even at the expense of immediate production.

Chapter 2. Current state of Zimbabwean agriculture

Agriculture is a fundamental sector for Zimbabwe's economy, employing approximately two-thirds of the working population (International Monetary Fund, 2020). Agricultural exports continue to be a significant source of foreign exchange for the country, representing about 30% of total exports (International Monetary Fund, 2020). Smallholder farmers, including those in communal areas and A1 resettlement schemes continue to dominate Zimbabwe's agricultural landscape in terms of numbers. Most of the country's 1.3 million smallholder farmers engage in subsistence farming, the majority being heavily reliant on rain-fed agriculture (Government of Zimbabwe, 2018). This sector produces about 70% of the nation's staple foods (Setoboli, Tshuma & Sibanda, 2024). Despite their large number, approximately 70% of communal farmers live in poverty, struggling to meet basic needs. They face pervasive challenges such as poor soil fertility, inadequate infrastructure, low investment, and limited access to irrigation, finance, knowledge, and markets (Setoboli et al., 2024). The enduring dominance and vulnerability of smallholder farmers underscore that Zimbabwe's agricultural future is inextricably linked to the success of this sector.

While significantly reduced following the FTLRP, the commercial farming sector has continued, and presents immense opportunity. Key commercial crops include tobacco, sugarcane, cotton, soybeans, maize, wheat, and a growing horticulture sector producing citrus, avocados, berries, and cut flowers, among many other crops. Sugarcane estates in the Lowveld sustain both domestic supply and regional exports (U.S. Department of Commerce, 2023).

Under the New Republic, the Zimbabwean Government has implemented an array of initiatives intended to support the development of the agricultural sector. These include:

- The **Command Agriculture (CA) Program**. The CA program was introduced in 2016 as a state-driven production model designed to bolster agricultural output and reduce reliance on food imports. Under the program, the government provides inputs such as seeds, fertiliser, and chemicals to participating farmers, with the government then serving as the exclusive buyer of the produce (Mazwi & Yeros, 2023). The success of CA is mixed. Under CA, and with the introduction of conservation agriculture techniques (discussed later in the chapter), maize production reached its highest levels since 1982 in the 2020/2021 season (2.7 million tons) (Esterhuizen, 2021). Critics of CA, however, point to high implementation costs and the burden it places on the national budget, poor implementation with inputs often delivered late in the season

and resulting in reduced productivity, late payment to farmers for their produce, as well as political influence regarding the selection of beneficiaries (Mazwi & Yeros, 2023).

- **The Presidential Input Scheme (PIS).** The PIS provides agricultural inputs to farmers, predominantly smallholder communal and A1 farmers. It is different to CA in that farmers do not enter into a production contract with the government, and produce is typically used for subsistence needs, with surpluses generally sold on the informal market. The program helps to increase rural resilience but faces persistent challenges, including late delivery of inputs, incomplete packages, reports of political favouritism, and a lack of a viable exit strategy that can foster farmer dependency (Tagara, 2017).
- **Conservation Agriculture.** A strong emphasis is placed on conservation agriculture (CA) practices, including the promotion of drought-tolerant crops, expansion of small-scale irrigation, and agroforestry, particularly in the country's vulnerable semi-arid regions (Nyandoro & Andersson, 2024). The introduction of 'conservation agriculture' through the *Pfumvudza/Intwasa* program has demonstrated immense potential in terms of increasing yields and ensuring food security for smallholder communal and A1 farmers (Mujere, 2021).
- **Joint Ventures (JVs).** The government actively encourages JVs between landowners who lack sufficient resources and investors possessing capital, with the aim of optimising land use and enhancing productivity (Matondi, 2019). As a result of the JV model, many previously dormant farms have become productive, with over 2,700 JVs, covering 234,432 hectares approved, signalling a significant shift in land utilisation strategies (Manomano, 2025).
- **Land tenure reforms.** Under the New Republic, significant land tenure reforms are underway. A major policy shift is in process to allow beneficiaries of land acquired under the FTLRP to formally acquire and dispose of their land. The currently proposed issuance of title deeds to A1 and A2 permit holders aims to 'unlock the value' of land by making it 'bankable and transferable' and thereby increasing access to credit facilities for farmers. Ownership transfer under this proposed regulation is restricted to 'indigenous Zimbabweans' and requires government approval (Mutsa, 2024).
- **Focus on agricultural extension services.** There is a recognised need for agricultural extension systems, particularly through AGRITEX, to support farmers and facilitate the adoption of emerging agricultural technologies (Government of Zimbabwe, 2018). However, AGRITEX continues to face systemic challenges, including poor funding, inadequate remuneration for staff, a lack of in-service training, and the dissemination of outdated technologies (Masere & Worth, 2021).

- **Irrigation development.** Investment in irrigation infrastructure is a critical priority to reduce the agricultural sector's reliance on erratic rainfall patterns. The Government of Zimbabwe under the New Republic has taken significant strides forward in developing critical large-scale irrigation infrastructure. The opportunities emanating from this are outlined in the next chapter.

Challenges facing Zimbabwe's agricultural sector

Zimbabwe's agricultural sector stands at a critical juncture, presenting a complex interplay of persistent challenges and emerging opportunities. While progress has been made and the sector remains a cornerstone of the economy, providing livelihoods for most of the population, its full potential is hampered by systemic issues. Key challenges facing Zimbabwe's agricultural future include:

- **Low productivity and subsistence agriculture.** Agriculture is the primary livelihood for nearly 70% of Zimbabwe's population, but it is dominated by low-yield, subsistence-oriented systems (Setoboli et al., 2024). Subsistence farmers are also highly vulnerable to adverse climatic events. The 2024 agricultural season, severely impacted by El Niño, saw over 80% of Zimbabwe receive below-normal rainfall, leading to a national disaster declaration (Chingono, 2024). In this year, maize production plummeted by over 60%, with many crops written off (GIEWS, 2024). Smallholder farmers also face challenges in accessing improved seed varieties, fertilisers, and other crucial inputs due to inadequate availability, unstable prices, and financial constraints. Mechanisation uptake is also low among smallholders, hindered primarily by financial barriers and skill deficiencies (Simutowe et al., 2023). Subsistence and small-scale farmers find themselves trapped in a cycle where insufficient productivity prevents the accumulation of capital necessary for investments in technology or inputs, which in turn perpetuates low yields and low income. This makes them vulnerable to external shocks and severely limits their capacity to escape poverty.
- **Insecurity of land tenure.** The Fast Track Land Reform Programme (FTLRP) created widespread uncertainty in land ownership, undermining investment. Farmers and investors hesitate to commit capital due to the lack of clear, transferable property rights (Chavunduka, 2020). Long-term crops such as citrus and macadamia have been overlooked in favour of short-term annual cash crops, while 99-year leaseholds remain unsuitable as collateral, limiting access to credit (The Herald, 2021). This

tenure insecurity curtails productivity and reduces the appeal of Zimbabwe as an agricultural investment destination.

- **Access to finance.** Limited access to finance is a critical constraint for Zimbabwean agriculture. Farmland, particularly under the 99-year leasehold system introduced post-land reform, cannot be used as collateral. This inability to secure loans against land assets severely restricts farmers' capacity to access credit from formal financial institutions, hindering investment in inputs, technology, and necessary farm improvements (U.S. Department of State, 2021).
- **Knowledge gaps and unsustainable practices**. Technical know-how and poor land management hinder productivity, with many farmers lacking knowledge and proficiency in modern techniques, irrigation management, and soil conservation. Unsustainable practices, including overgrazing, deforestation, and mono-cropping, have led to widespread land degradation (Parwada et al., 2025). Irrigation schemes also frequently collapse due to mismanagement, poor maintenance, and governance disputes (Stirzaker & Pittock, 2014). Unsustainable land management practices are not merely a result of insufficient knowledge but are deeply intertwined with the socio-economic realities faced by communal and resettlement farmers. These include pervasive poverty, insecure land tenure, and historical land allocation patterns that relegated indigenous populations to marginal lands. Farmers operating under insecure tenure are less inclined to invest in long-term soil conservation measures, as they may not be assured of reaping the future benefits. Poverty compels them to prioritise immediate survival over sustainable practices, leading to practices such as over-cultivation, deforestation, and overgrazing. This creates a self-reinforcing cycle where land degradation diminishes productivity, exacerbates poverty, and further intensifies environmental decline.
- **Policy and regulatory uncertainty.** Zimbabwe's business environment is characterised by overarching regulatory challenges and policy uncertainty, which negatively impact all sectors, including agriculture. Issues such as complex tax compliance, stringent labour laws, cumbersome import and export regulations, and generally high costs of doing business create significant hurdles for enterprises in Zimbabwe (U.S. Department of State, 2025). Policy inconsistency, coupled with inflationary pressures and currency volatility, erodes business confidence and discourages long-term investment (World Bank, 2022). Informal markets, operating outside of tax and labour compliance, create unfair competition for formal agricultural enterprises. By evading taxes, licences, and labour obligations, informal actors can offer lower prices, making it difficult for formal producers to compete. This erodes profit

margins for compliant businesses, discourages investment, and threatens the sustainability of formal agricultural enterprises (IFC & World Bank, 2024).

- **Climate impacts.** The United Nations' Intergovernmental Panel on Climate Change estimates that human-caused global warming could reduce crop yields in southern Africa by as much as 60 percent in the coming decades. Erratic rainfall, increased frequency and intensity of droughts, and extreme weather events directly translate into crop failures and food insecurity for those reliant on rainfed subsistence farming (IPCC, 2023). The long-term effects of climate change include altered growing seasons, increased water scarcity, and heightened vulnerability to pests and diseases (Mugambiwa & Rapholo, 2024). Communal farmers, often residing in marginal lands with limited adaptive capacity, bear the brunt of these impacts.
- **Competing land uses and resource allocation.** Competing land uses and resource allocations pose a significant challenge to the sustainability of agriculture in Zimbabwe. The expansion of mining activities often occurs on land previously designated for farming, displacing communities and reducing arable land availability (Chari, Novukela & Ngcamu, 2021). Beyond land, competition for water resources often arises. Without integrated land and resource governance frameworks, agriculture risks being marginalised in favour of extractive industries and urban demands, eroding the sector's potential to ensure food security and rural livelihoods.
- **Market access and infrastructure constraints.** While export opportunities are significant, domestic market access and the efficiency of internal supply chains present their own set of challenges and opportunities. Poor road and transport networks make it difficult and costly to move agricultural produce from farms to markets or processing centres. Inadequate storage and processing facilities contribute to alarmingly high post-harvest losses, estimated to be between 20 – 30% in storage alone, and potentially up to 40% when factoring in field, transportation, handling, and processing losses. These losses translate into wasted food and reduced farmer revenues (FAO, n.d.).

Opportunities for agriculture in Zimbabwe

Despite the challenges, Zimbabwe's agricultural sector has significant opportunities that, if leveraged effectively, could drive substantial growth and ensure food security.

- **Abundant land and diversified agro zones.** Zimbabwe possesses approximately 33 million hectares of agricultural land, including fertile soils in high-potential regions (FAO, n.d.). The country's agro-ecological diversity allows for both food security crops and high-value export commodities. With improved investment and operating conditions, idle land could be brought back into productive use.
- **Infrastructure and irrigation developments.** Ongoing government-led investments in dams, irrigation, and rural infrastructure, if effectively utilised, hold immense potential for Zimbabwe's farming landscape. Projects such as Gwayi-Shangani and Tugwi-Mukosi dams aim to expand irrigated land to nearly 500,000 hectares, reducing reliance on erratic rainfall (Dube, 2024).
- **Expanding export potential.** Zimbabwe has significant potential to grow its agricultural exports. The country already has several established export crops such as raw tobacco ($1.17 billion), processed and rolled tobacco ($165 million), raw sugar ($89 million), citrus ($47 million), raw cotton ($28.8 million), cut flowers ($7 million) and more (OEC, 2023). However, there is room to diversify and expand into other high-value export crops. Horticulture holds promise, with potential to grow the production of fruits, vegetables, and floriculture. Zimbabwe's horticultural sector was thriving in the late 1990s, with exports peaking at about US$140 million in 1999, before disruptions from FTLRP caused a collapse. In recent years, this sector has been rebounding. Exports of citrus, avocados, blueberries, peas, and cut flowers are on the rise, with the sector earning over $100 million annually from horticulture exports in recent years (Chingono, 2024).
- **Carbon credits and nature-based solutions.** The emergence of carbon credits and nature-based solutions offers a compelling pathway for Zimbabwe to harness climate finance while reinforcing ecological resilience, especially in regions where conventional agriculture is marginal or unsustainable. By restoring degraded landscapes, conserving woodlands, or adopting agroforestry systems, landholders and communities can generate carbon offset credits that are sold on international carbon markets, turning ecosystem improvements into income. Zimbabwe has already taken steps to institutionalise this opportunity: in 2024 it established the Zimbabwe Carbon Markets Authority and introduced a blockchain-based carbon

registry to enhance transparency and align with international standards (NDC Partnership, 2025).

- **Wildlife economy.** Zimbabwe's wildlife economy presents a strategic opportunity to repurpose degraded and marginal agricultural lands into productive landscapes that support both biodiversity and livelihoods. In semi-arid regions such as Matabeleland South and Chiredzi, land degradation and increasingly erratic rainfall have made traditional crop farming increasingly unviable. Transitioning such areas toward wildlife-based land uses, including community conservancies, game ranching, and habitat restoration, could enhance ecosystem services, generate carbon and tourism revenues, and improve climate resilience. Likewise, the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) model demonstrates how devolving wildlife rights to communities can incentivise stewardship and generate tangible local benefits. If aligned with transparent benefit-sharing, ecological safeguards, and restoration incentives, the reintegration of degraded lands into the wildlife economy could become a key component of Zimbabwe's agricultural future.

Chapter 3: Innovative agricultural production models and lessons from around the world

The core premise behind Nuffield is to enable scholars to travel the world, learn about new or different ways of doing things, and then to take back lessons and innovations that could be applied in their home country. Travelling across Brazil, New Zealand, Canada, the United States, Kenya, and Tasmania, I was exposed to an immense breadth and depth of global agriculture.

From smallholder farmers in Kenya manually working their lands, to corporate farms in Brazil cropping over 700,000 hectares per year. I observed agriculture that was 'hyper local', with farmers in Nebraska and Nova Scotia developing farm-to-plate businesses. At the same time, I witnessed agri-businesses deeply entrenched and heavily reliant on a globalised agricultural system – a system in which 100% of a farmers' produce is sold internationally, and shifting trade terms or international agreements can have potentially catastrophic consequences.

As I was exposed to new models and approaches on my travels, I was constantly thinking about how it could be translated back to the Zimbabwean context. Embarking on my Nuffield travels, I felt I had a reasonable understanding of the Zimbabwean agricultural context. From 2021 to 2024, I'd invested heavily in building relationships and learning what was and was not working, having travelled over 140,000 kilometres exploring the far-flung corners of the country and seeing the breadth of Zimbabwean agriculture.

This section moves on from the history of Zimbabwe and what we already know. It highlights key agricultural production models, trends and lessons that I discovered on my Nuffield travels, providing analysis as to their applicability to Zimbabwe.

Highly intensive and mechanised agricultural production systems

I saw a range of highly intensive and mechanised agricultural systems. By intensive, I mean that farmers are trying to maximise the productivity and profitability that can be achieved on a given piece of land. This means using optimal inputs (seeds, fertilisers, chemicals, water) whilst managing costs, typically reducing labour through mechanisation. In Brazil, visiting SLC Agricola, one of the country's largest agribusinesses, I was blown away by their scale and sophistication. They annually crop over 700,000 hectares of soybeans, corn and cotton. They have a strong focus on technology, using a broad range of in-field soil monitoring and testing devices as well as remote sensing to drive management decisions. They embrace precision agriculture, using drones for spraying, self-driving tractors, and piloting spray rigs that use cameras and artificial intelligence to individually identify weeds, and then spray chemical onto

the individual weed. They also integrate sustainability, practising no-till, promoting the use of biological controls instead of chemicals, and setting 20% of their landholdings aside for conservation purposes.

SLC Agricola demonstrated two things for me; firstly, that when operating at scale, investing in technology pays dividends by reducing input costs and maximising productivity and profitability. The things that they were learning and developing as an industry leader would then proliferate out to other smaller producers. Secondly, what resonated with me was that environmental sustainability was not an externally imposed condition, but rather was integrated into their business model, and was driven by productivity. By maintaining soil health year-on-year through sustainable practices, they could do and produce more over the long-term with the finite land area that they had available to them.

In the sandhills of Nebraska in the United States, I saw intensive cattle farming at a feedlot that held up to 33,000 cattle at any given time. I must confess that when entering the facility, I felt a bit uneasy. I knew that such facilities are a reality of the global agricultural system but had questions about their environmental and ethical implications. When setting my preconceptions aside, what I soon saw was a keen focus on animal welfare and conditions and then learned there could be some strong environmental arguments for feedlotting instead of free ranging livestock. Some studies suggest that feedlotting requires less land, less water, and has lower fossil fuel inputs compared to grassfed systems (Capper, 2012). When agricultural land is coming under increasing pressure from alternative land uses such as urban expansion, industry, mining and other uses, the principle of achieving maximal output on a given piece of land has merit.

For Zimbabwe, I think there are some key lessons to consider. The first is that to drive innovation, Zimbabwe needs a core of large, commercial, and profitable agricultural producers. It is only when operating at a certain scale, and with a level of certainty regarding future economic conditions that large agricultural producers will be able to invest in and actively drive future innovations. Innovations and lessons from these large-scale producers will subsequently cascade down the value chain and transfer to smaller-scale producers, influencing the broader agricultural sector. Zimbabwe also needs to look at ways in which unproductive and inefficient agricultural production models can be improved and intensified. In the case of many smallholder farmers in drought prone areas that year-on-year grow rain-fed maize that inevitably fails or has marginal yields, what needs to happen for these practices to change and for maize in such areas only to be grown on irrigation schemes, and the remaining land to be utilised for its most productive land use? These lessons and recommendations are expanded in Chapter 4: Shifts to unlock the potential of agriculture in Zimbabwe.

The Implications of low-cost labour in Africa

I was challenged by my Nuffield colleagues on the issue of farm wages in Africa, and whether the low cost of labour is a competitive advantage, or a strategic risk for the continent. I think I have come to realise that it is probably both.

In Zimbabwe, the minimum monthly wage for a farm labourer in the horticulture sector as set by the National Employment Council is $99 (NEC, 2025). In Australia, a casual farm labourer however earns approximately $23 per hour, or $3,500 per month (Wiese, 2025). Labour costs are therefore one of the key drivers of increased mechanisation in Australian agriculture, and one of the reasons for lower uptake of mechanisation in Zimbabwe.

Some interesting labour trends are however taking place in Africa. Rural youth see farming as a ‘last resort’ option that is low-status and low-return. They rather aspire towards waged non-farm jobs (White, 2019). Just before I travelled to Kenya in 2024, nationwide youth-led protests took place with demands for increased economic opportunities and an easing of cost-of-living pressures, amongst other things. It is then these same youth, making demands for better wages and working conditions that are expected to assume low-paid agricultural jobs so that the agricultural sector can maintain a competitive advantage in Kenya.

I saw this dichotomy of labour costs play out in two very different ways in Kenya. I visited Stu Barden, an Australian farmer who moved to Kenya in 2009 and established a broadacre farm just outside of Nairobi. Stu took his Australian farming approach with him to Kenya; he bought a large array of farming machinery and annually crops 1,100 hectares with a total staffing outfit of seven people. His staff are all managers, and he invests heavily in their training and education; in some cases offering equity in the company. They are paid professional salaries, and all are role models in their communities – investing in machinery and adopting intensive farming practices on their own farms.

In contrast, I visited a large, publicly listed diversified farming operation that employs over 3,500 people. Chatting with their Managing Director, he spoke about a cautious approach towards mechanisation and automation. He outlined a range of potential efficiencies that could be found, but that he had actively resisted many of them because they would come at the expense of jobs, and he wanted to avoid laying off his long-term and highly loyal workforce.

These examples present a dilemma when it comes to labour and competitiveness in Africa. On the one hand, there still exists low-cost and willing labour to carry out menial tasks and, in many cases, it is currently the most economical option. What happens, however, when the competitive advantage of cheap labour is no longer a competitive advantage, when the labour is no longer so cheap, or they demand higher standards and conditions? Similarly, what happens when technology becomes so effective and so affordable in developed countries that

it is more efficient than cheap labour, and African companies are locked into the old way of doing things and cannot invest to catch up? Not adopting technology and automation in such cases will lead to longer-term vulnerability.

On the other hand, adopting a 'lean' workforce model driven by high technology adoption and automation could breed resentment in the context of increasing levels of unemployment. Given the relative costs of new technologies and machinery, and level of uncertainty in the operating context of many African nations such as Zimbabwe, there are also over-capitalisation risks if farms were to adopt such an approach.

I believe a balanced approach to managing labour versus automation in Zimbabwe will be required. Ongoing innovation and investment in technology will be needed to grow productivity and global competitiveness, however automation and efficiency should not be prioritised at all costs, and there is a social trade-off to consider. It should also be recognised that that promoting low-productivity and labour-intensive models may inadvertently entrench poverty for a large proportion of the population.

The critical role of plant breeding and genetics

Before Nuffield, I had paid little attention to the breakthroughs made and importance of plant breeding and improved genetics. What I witnessed, however, were entire companies, industries or regions that owed much of their success to genetic improvements. In New Zealand I visited and learned about Zespri, the world's largest kiwifruit marketing company. Zespri invests heavily in plant breeding programs, and it has paid dividends, with new kiwifruit varieties developed that have driven demand, with some selling for over 2.5 times the price of the traditional 'green' kiwifruit variety. Kiwifruit farmers pay significant licence fees to be able to grow improved kiwifruit varieties, and this in turn funds the investment in ongoing breeding programs.

I also spoke with Australian broadacre farmers who told me that plant breeding and improved genetics were responsible for increased yield of .5% per year, for the past 30 years. This means that grains such as wheat and oats have seen an increase in production of up to 15% since 1995, and these gains have been achieved despite changing climatic conditions and increasing unreliable rainfall patterns (GRDC, 2020).

When considering what this means for Zimbabwe, two key questions emerged. The first was regarding the country's long-standing stance on the use of genetically modified seed in the country – a stance, which, if reconsidered would lead to an immediate bolstering of national agricultural output. It also made me question what could be done to drive better connections between Zimbabwe's leading agricultural producers, and research institutes. These

considerations are further outlined in Chapter 4: Shifts to unlock the potential of agriculture in Zimbabwe.

Climate impacts on agriculture

The impacts of climate change on agriculture were evident in every country that I visited. In conversations with a broad range of people of all levels of education and across the political spectrum, climate change was never characterised as a potential future concern, but as a real issue having impacts here and now. In Brazil, I visited a range of horticultural producers in Rio Grande do Sul. One company had invested in netting (at great economic cost) to cover 60% of their 1,100 hectares of apple orchards to protect them from hail – an occurrence that was largely unheard of in the past. They also spoke about yields being reduced by over 55% in 2023 because of excessive rainfall. Two months after my visit in March 2024, I watched with concern the news headlines that the same area had just experienced its worst flooding in 80 years, with 39 people dead (Sa Pessoa, 2024). I can only assume that yields were significantly impacted by heavy rains for their second consecutive year.

In New Zealand, I drove through the Eden Valley looking at field after field of previous vineyards and apple orchards that were now entirely covered in deep silt. It was the result of a cyclone almost 18 months earlier, as well as poor catchment management (Hawke's Bay Regional Council, 2024). In Nova Scotia, Canada, vineyards and apple orchards were still recovering from a polar vortex in 2023 that had wiped out their crops.

Climate change had several industries on the brink. Chris Hutchinson, a 60+ year old maple farmer in Nova Scotia conceded that the industry in the state would become non-viable in his lifetime, whilst Fred Huntley, a Nova Scotian lobster fisherman spoke about warmer waters already making fishery areas non-viable and driving the local industry to the brink of collapse. Later that year I had my own experience with extreme weather events when an isolated hailstorm on my family farm in Beitbridge destroyed our entire citrus crop.

Climate change in many areas is driving a shift in growing regions for various agricultural products. In New Zealand, kiwifruit has typically been grown on the North Island in the Bay of Plenty, but this is shifting as temperatures rise, and kiwifruit production becomes viable further south. Similarly in Nova Scotia, a strong wine industry is emerging as warming temperatures combine with the development of hybrid cold-tolerant grape varieties.

A key climate theme that I picked up was the need to embed resilience into your system. I saw resilience in many forms. For some, it is an understanding that when times are good, they need to be very good, and you need to build a sufficient financial buffer to get you through the tough times. In other cases, it is about reducing risks by spreading exposure; for example, by

growing more than one crop or variety, staggering maturities, and selling to multiple markets. In other cases, it was about adaptive management and having climate triggers to guide key farming decisions.

ESG and sustainability in agriculture

The term ESG stands for Environmental, Social and Governance – it was coined in 2004, started to gain recognition in the 2010s, and was then mainstreamed in the 2020s. International reporting rules for multinationals (the buyers and various others along the supply chain) require them to report ESG performance across their supply chains, and those requirements are cascading to farm level.

In many cases, I saw that improving ESG is better for a company's bottom-line. It means paying more attention to growing practices (optimal nutrition, cover crops, water efficiency etc.), having safer workplaces and taking better care of employees, and establishing transparent systems, policies and procedures between the farm, employees, suppliers and customers.

The key ESG conundrum and challenge that I witnessed was related to decarbonisation of farming practices, as retailers are being pushed to reduce the emissions of products that they sell. Roughly three-quarters of food-system emissions occur on farm, yet farmers typically capture a small share of the retail dollar. Many are already squeezed by higher input costs and thinner margins, and now they're being asked to invest in improved measurement, new inputs and practices, as well as new technologies to decarbonise their farming practices. This dilemma is already pronounced for farmers in developed markets, and it is only a matter of time until this requirement cascades to Zimbabwean agricultural exporters.

In Africa, there are already a host of certifications and requirements to export agricultural products to international markets. Zimbabwean fruit and vegetable exporters must fulfil the requirements of Global GAP (food safety, environment, health and safety, and animal welfare) as well as SMETA, which is a social and labour welfare accreditation. I believe that there will soon be another certification or requirement for emissions standards and reporting.

Also, of relevance to Zimbabwean agriculture, one of the key and concerning observations I made when visiting an array of large agribusinesses in Kenya was related to their 'social licence to operate'. What emerged repeatedly was that when there was a large and successful (predominantly white-owned) agricultural enterprise, it was not sufficient for these companies to contribute to the economy, pay their taxes, create employment and pay above market wages for their staff. These companies were under a seemingly constant barrage of allegations and claims related to land disputes, human rights violations, competition over water

resources, tax avoidance and other such issues. I have no insight into the validity of any such claims, but what became clear to me was that 62 years post-independence in Kenya, the country had still not moved beyond its colonial past, and the ongoing issues continue to jeopardise the future of the country's agricultural sector.

For these Kenyan companies to continue to operate and mitigate the claims and allegations against them, they have invested heavily in activities that maintain their social licence to operate. Many had established not-for-profit social arms whose sole purpose was to invest in social and economic infrastructure for surrounding communities. Full-time staff were employed, and extensive funds were going into building schools, hospitals, roads, dams and other things. This poses an interesting conundrum. On the one hand, it is positive to see a company driving social and economic improvements in their surrounding communities. On the other, the sustainability must be questioned. What happens if the economics of labour changes in the future and profits dry up? What happens when climate change starts to eat into the bottom line, and these companies can no longer afford the investment in their social licence to operate?

Chapter 4: Shifts to unlock the potential of agriculture in Zimbabwe

This report has so far outlined the history of agriculture in Zimbabwe. It has given an overview of the sector's current state of play, provided an overview of some key lessons that I've learned about the latest global developments in agriculture, and how they may translate to Zimbabwe. In this chapter I draw from what I have learned and provide frank opinions, observations, and recommendations about what can be done to further enhance Zimbabwe's agricultural future. To provide a rapid summary of the state of agriculture in Zimbabwe:

- A large proportion of Zimbabwe's population (70%) rely on subsistence agriculture for their livelihoods. These people are trapped below the poverty line and are highly vulnerable to economic and climate shocks. When droughts lead to crop failures or livestock deaths, they depend on the government for food aid and other emergency relief, as well as ongoing remittances from family members living and working abroad.
- Zimbabwe has a large informal sector comprising small-scale producers that supply produce into domestic markets. These farmers are typically on A1 or A2 plots, have challenges accessing finance, and in some cases lack necessary inputs or expertise. They typically engage labour on an informal basis, meaning there are opportunities for exploitation, and critically, sell on a predominantly cash basis with no revenue accruing to the government through taxes.
- Joint ventures have emerged as a model of unlocking investment and increasing productivity on predominantly A2 farms. The JV model in most cases favours shorter-term cash crops such as potatoes and maize, but in other cases is driving other longer-term investments with crops such as pecans, avocadoes and macadamias being grown through public-private partnerships on ARDA estates.
- Large-scale commercial farming for export markets still takes place, albeit at a reduced level compared to pre-FTLRP. These operations face challenges in terms of a complex and onerous regulatory environment, uncertainty of land tenure, and challenges in accessing finance.

I believe the following key principles will guide the unlocking an equitable and sustainable agricultural future for Zimbabwe:

Principle 1: Promote and support established large-scale commercial producers

Zimbabwe's agricultural future depends not only on achieving national food security but also on scaling up exports to regional and global markets. To achieve this, the country must actively promote, and support established large-scale commercial producers, irrespective of their background. These producers are essential drivers of employment, export earnings, technological innovation, and knowledge transfer. They also help build value chains that enable smaller-scale farmers and agribusinesses to participate in more competitive markets.

The success and expansion of export-oriented commercial agriculture can stimulate broad-based rural development. Growth in this sector generates upstream and downstream economic opportunities, supporting input suppliers, processors, logistics firms, and service providers, while creating off-farm jobs, particularly in remote areas. Large-scale farmers can also facilitate market access and skills transfer for smaller producers. For example, Nottingham Estate in Beitbridge District has supported the Shashe Irrigation Scheme (a communal farming cooperative) by improving citrus quality and providing access to its packing and export facilities. Likewise, the Balu Pecan and Livestock Company in Matabeleland North has implemented an outgrower scheme, supporting smallholders to establish their own plantations, which will then be processed and exported through Balu's facility to international markets.

Supporting large-scale commercial agriculture requires a coherent and enabling policy framework. This could include:

- Reforming the current foreign exchange regulations that penalise exporters by converting part of their foreign currency earnings into local currency.
- Strengthening tenure security for commercial producers to encourage long-term investment.
- Providing incentives for innovation, such as reducing tariffs and duties on the import of agricultural machinery and processing equipment.
- Maintaining stable macroeconomic and fiscal conditions across the entire economy. This is an obvious, but important point, as the major policy changes, currency fluctuations and general economic conditions impact all of Zimbabwe's economy, including large scale commercial agriculture producers.

This is not an argument for a return to a dualistic or exclusionary agricultural system, but for a modernised, inclusive approach that recognises the mutual benefits of a strong commercial

farming base. A strong commercial sector can lift productivity and standards across the value chain, driving improvements in labour conditions, wages, and mobility, while creating opportunities for A2 and smallholder farmers.

Principle 2: Reduce reliance on subsistence farming through targeted extension services

Zimbabwe's agricultural extension system should adopt a differentiated approach that reduces dependence on subsistence farming while promoting pathways to more commercialised and resilient agriculture. For subsistence farmers, extension support must emphasise climate-smart conservation practices such as *Pfumvudza* that improve household food security and reduce vulnerability to drought. For small-scale commercial producers, extension services should focus on upskilling in modern agronomic methods, soil health, low-cost technologies, and business management, enabling their graduation to medium-scale, formal farming. Larger commercial operators should not be a focus of direct government support but should instead be incentivised to share expertise and innovations with extension officers and small-scale farmers, and also to develop outgrower schemes that enable smaller-scale producers to tap into their value chains, creating knowledge spillovers and market linkages that strengthen the system.

Principle 3: Advancements through plant breeding and improved genetics

Zimbabwe has made progress in improving the genetics of key crops through conventional breeding. Public research agencies, seed companies, and international partners have released drought-tolerant maize hybrids, biofortified orange maize, and disease-resistant varieties. Community seed banks and participatory breeding have also helped conserve genetic diversity and provide farmers with seed better adapted to local conditions.

To build on this progress, greater investment in modern plant breeding technologies could accelerate the development of improved crop varieties suited to Zimbabwe's varied growing regions. Strengthening collaboration between public research institutions, universities, and private seed companies would ensure that breeding programs are aligned with farmer needs and are responsive to emerging threats such as new pest and disease strains or changing rainfall patterns.

Zimbabwe's refusal to adopt genetically modified crops means the country is missing out on further potential gains. A careful re-evaluation of the GMO policy is warranted to strike a balance between biosafety concerns and the potential for increased agricultural productivity

and enhanced food security. This should involve considering the experiences and scientific evidence from other African countries that have adopted or are exploring GMO technologies. Genetically modified cotton could help revive Zimbabwe's struggling cotton sector, and drought-tolerant genetically modified maize could stabilise harvests in low-rainfall regions. At the same time, GMO adoption carries risks such as higher seed costs, dependence on multinational companies, ecological concerns, and possible market barriers in GMO-averse regions. The challenge for Zimbabwe is therefore to weigh up the potential productivity and food security gains against the potential sovereign and ecological risks of GMO adoption.

Principle 4. Ensure effective utilisation of strategic infrastructure such as irrigation schemes

Zimbabwe is making significant progress in expanding its water and irrigation infrastructure, with over US$1.5 billion committed for new dams and pipelines and plans to nearly double irrigated land to 496,000 ha under the Accelerated Irrigation Rehabilitation and Development Plan. In a drought-prone country, these investments are vital to achieving food security and climate resilience. However, experience shows that irrigation infrastructure alone does not guarantee success. Many smallholder schemes across Zimbabwe have failed or become under-utilised due to frequent pump breakdowns, poorly designed canals, siltation, weak farmer organisation and governance, and the unsustainable 'handover' model, where assets are simply transferred to communities without adequate technical or financial support.

To avoid repeating these mistakes, irrigation schemes must be embedded in commercially oriented and professionally managed structures. Public-private and private-community partnerships offer promising models, ensuring reliable maintenance, market access, and technical standards, while also allowing smallholders to benefit as participants and shareholders. In addition, capacity building, ongoing institutional support, and incentivising spillovers from larger commercial operators are critical to strengthen governance and embed resilience. The investment in the development of such models will be critical for Zimbabwe's substantial investments in dams and irrigation infrastructure to be fully capitalised on, driving higher productivity, market integration, and long-term growth in the agricultural sector.

Principle 5. Address land title and bankability of land

While the Zimbabwean Government under the 'New Republic' era has actively promoted an 'open for business' narrative and is encouraging joint ventures to attract agricultural investment, the persistent issues of policy inconsistency and inadequate protection of property

rights undermine these efforts. Investors, particularly international investors, demand a predictable and secure legal and policy environment before committing substantial capital. When property rights concerning agricultural land are not fully guaranteed, it generates a high degree of uncertainty. This deters the investment needed to develop the agricultural sector.

Insecure land titling and the inability to use agricultural land as collateral is a well-established challenge following the FTLRP. It is an issue that I will not attempt to comprehensively weigh into here, except to acknowledge that it is an evolving and immensely complex challenge to address, particularly given the assertion that compensation to previous landholders evicted under the FTLRP is a prerequisite to ensure bankability of land, and there are question marks as to a) how a consensus will ever be reached on a fair compensation value for such land, and b) how it will ever be possible to pay this without once again crippling the Zimbabwean economy.

What is clear, however, is that Zimbabwe needs to establish a transparent and credible framework for land ownership and use rights, backed by consistent policy and legal enforcement. Such a framework should ensure tenure security, enable access to finance, and encourage investment in land improvement. Moving toward a market-based system for land transactions, where ownership or long-term leases can be transferred, traded, or used as collateral would help unlock investment and sustainable growth of the sector.

Principle 6. Strengthen market access and build a market-linked agricultural economy

For Zimbabwe's agricultural sector to grow sustainably, farmers must be better integrated into markets that reward quality, resilience, and productivity. Too often, producers remain trapped in low-value subsistence cycles or are exploited by middlemen who capture disproportionate value, particularly in livestock markets where pastoralists face limited access to formal trading systems. Creating more direct and transparent market linkages is essential.

Successful examples already exist, such as in Zimbabwe's south-east Lowveld, where communal farmers are contracted by a supplier to an international restaurant franchise, to grow chillies. Under the agreement, farmers are supported to produce the climate-resilient cash crop for a guaranteed buyer, ensuring both household income and market stability (Machamire, 2022). There is also potential for scaling up of outgrower schemes and contract farming arrangements built around larger commercial farms or agribusinesses, where smallholders receive inputs, training, and assured offtake at premium prices. Expanding such approaches to other value chains including horticulture, livestock, and niche exports can allow farmers to capture more value from their products.

Achieving this shift requires deliberate efforts to link producers with markets: investing in aggregation and processing facilities, supporting farmer cooperatives, and establishing platforms that connect farmers directly with buyers. By fostering transparent, competitive supply chains and reducing reliance on informal intermediaries, Zimbabwe can build a more market-driven agricultural economy that provides farmers with higher returns and integrates them into broader national, regional and global value chains.

Principle 7. Tailor land uses to the realities of climate change

Zimbabwe's agricultural and natural resource policies must evolve to reflect the realities of a changing climate and the diversity of its agro-ecological zones. As temperature and rainfall patterns shift, some regions will become increasingly unsuited to traditional crops or livestock densities but may present new opportunities for alternative land uses. Like farmers elsewhere in the world who are adapting production systems to climate realities, Zimbabwe must pursue a deliberate strategy of aligning land use with ecological potential**.**

In the country's arid and semi-arid zones, extensive dryland cropping is unsustainable. Policy should therefore promote climate-smart irrigation where feasible, encourage transitions away from marginal cropping, and support improved livestock systems that balance herd size with available forage. In more degraded rangelands, particularly in communal areas, policies should incentivise rangeland restoration, rotational grazing, and alternative wealth storage mechanisms to reduce pressure on fragile ecosystems.

Nature-based solutions offer potential for driving climate resilience and rural prosperity. Carbon credit projects such as reforestation, avoided deforestation, and soil carbon initiatives can generate both income and ecological restoration if developed transparently and with strong community participation. Similarly, Zimbabwe's wildlife economy holds potential to transform marginal lands into productive conservation landscapes, supporting tourism, game ranching, and community conservancies. In many dry regions, wildlife-based land use represents a more sustainable and profitable option than low-yield cropping or overstocked livestock systems.

Realising this vision will require a concerted national effort that seeks to align vision that matches agro-ecological zoning with agricultural investment priorities, guiding where cropping, grazing, forestry, wildlife, and carbon projects are best suited. In parallel, environmental safeguards must be strengthened to prevent land degradation from unregulated mining, water abstraction, or poor land management.

Ultimately, Zimbabwe's prosperity depends on using its land for what it is best suited for, whether that means producing food, storing carbon, supporting wildlife, or providing ecosystem services. A climate-resilient and regionally tailored approach to land use will not only safeguard the country's natural capital but also unlock new economic pathways for rural communities.

Conclusions

Agriculture has always been central to Zimbabwe's economic, social, and political identity. Historically, it has been a driver of prosperity, employment, and export earnings, but also a source of conflict, inequality, and contested ownership. The legacy of the FTLRP remains deeply embedded in today's agricultural landscape, reshaping land ownership but leaving unresolved challenges around compensation, tenure security, and professionalisation. These historical dynamics are an essential foundation for understanding the current state of Zimbabwe's agriculture and the choices that now lie ahead.

Today, the sector faces significant structural challenges. A large proportion of Zimbabweans remain reliant on subsistence farming, often in drought-prone areas where dryland cereal production cannot meet household needs. This perpetuates cycles of vulnerability and dependence on food aid. Small-scale commercial farmers, while more productive, face barriers to finance, markets, and technology. Large-scale commercial operators, though reduced in number, continue to play a vital role but operate under conditions of regulatory uncertainty and constrained access to investment capital. Across all scales, productivity remains far below potential, undermined by insecure land rights, fragmented value chains, poor infrastructure, and limited extension support.

The role of large-scale commercial farms is especially critical. These farms act as engines of knowledge transfer, technology adoption, and market access. Their success has multiplier effects for employment, value chain development, and smallholder integration. Ensuring their viability is therefore essential for sector-wide progress. Zimbabwe must also avoid the trap of maintaining large numbers of farmers in low-wage, low-productivity systems. Instead, the country must pursue intensification, supported by mechanisation, improved inputs, and technology, while ensuring that these gains translate into higher incomes, decent working conditions, and a more professional agricultural workforce.

Zimbabwe is making significant progress in water storage and irrigation investments, which could transform resilience if schemes are professionally managed and embedded in commercially viable models. Extension services, if restructured and differentiated, could help subsistence farmers adopt climate-smart methods such as *Pfumvudza* while enabling small-scale producers to graduate into more formal, market-oriented production. The wildlife economy, carbon projects, and alternative stores of wealth also present innovative pathways for land use in fragile agro-ecological regions, reducing unsustainable reliance on crops or livestock alone. Joint ventures which are already visible in Zimbabwe through partnerships on

A2 plots and ARDA estates highlight how capital and expertise can be mobilised while sharing benefits with landholders.

Zimbabwe's five natural regions vary widely in rainfall, soils, and production potential, yet policy and government support programs have often applied a one-size-fits-all approach. In marginal areas such as Beitbridge District, dryland cropping is unsustainable and should give way to irrigated plots, improved rangeland management, and revenue through nature-based solutions. In higher-potential regions, more intensive commercial farming can thrive, but only if underpinned by secure land tenure, investment in irrigation, and access to premium markets. At the same time, mining and other competing land uses require closer regulation to ensure that agricultural productivity and water systems are not undermined.

Finally, climate change is an existential challenge to Zimbabwe's agricultural future. Increasing droughts, erratic rainfall, and rising temperatures threaten productivity and household food security. Building resilience means embedding climate-smart agriculture across all scales, ensuring efficient water use, and supporting diversified and region-appropriate land uses that reduce vulnerability.

Ultimately, Zimbabwe's agricultural sector cannot remain in its current equilibrium of fragmented, subsistence-oriented production. The country must move towards a modern, market-linked, technology-driven, and climate-resilient agricultural economy. This means embracing differentiated farming models, embedding new infrastructure in commercial frameworks, linking producers more directly to markets, and promoting land uses suited to specific agro-ecological zones.

Such a transformation will require political commitment, policy consistency, economic stability, and significant investment from both the public and private sectors. The result will be an agricultural sector that secures livelihoods, attracts capital, sustains ecosystems, and once again positions Zimbabwe as a regional leader in agriculture.

Recommendations

1. **Reinforce the role of large-scale commercial producers and joint-venture farming**

   Large commercial operators and the advent of joint ventures have shown that productivity, investment, and employment growth can return when capital and management capability align with land access. Policy should look to scale up and replicate what is working, and actively support large commercial operators, recognising their role in driving agricultural growth and knowledge transfer.

2. **Rebuild confidence through secure and bankable tenure systems**

   Without clear, transferable tenure, investment will remain limited. Tenure security is the starting point for agricultural investment and sustainable production.

3. **More clear targeting of smallholder support programs**

   Smallholder programmes must be more clearly targeted. Support to subsistence farmers should focus on food security through conservation farming techniques. Support to smallholder commercial farmers on the other hand should focus on aggregation around viable markets, and commercial cropping systems suited to each region.

4. **Invest in genetics, breeding, and technology transfer**

   Long-term competitiveness depends on continuous genetic improvement. Zimbabwe should strengthen its own research and breeding institutions, invest in seed and livestock development, and enable partnerships with regional research systems. The potential role of GMOs as part of Zimbabwe's agricultural production system should also be re-evaluated.

5. **Treat irrigation as a commercial and managed asset**

   Irrigation is fundamental to resilience but requires capable management and cost recovery. The priority should be to ensure irrigation development is transferred to professional or commercial models. Every new investment must be tied to viable crop systems, proper governance, and maintenance accountability.

6. **Improve market access and value-chain participation**

   Market structures remain fragmented. Expanding horticulture exports, strengthening cold-chain and processing capacity, and improving transport logistics will allow farmers to capture more value. Outgrower schemes and market-based contract farming models should be promoted to bring smallholder farmers into formal market systems and value chains.

7. Mitigate climate impacts by aligning land use with agro-ecological potential

Land allocation and production should match ecological reality. In higher rainfall zones, intensification and value addition make sense; in drier regions, wildlife-based economies, carbon projects, and tourism enterprises are more viable. Recognising this diversity will ensure resources are used productively and sustainably. This is essential to mitigate climate impacts on Zimbabwe's agricultural production.

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