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## Foreign Investment in Agricultural Development

### The Past of the Present in Zambia

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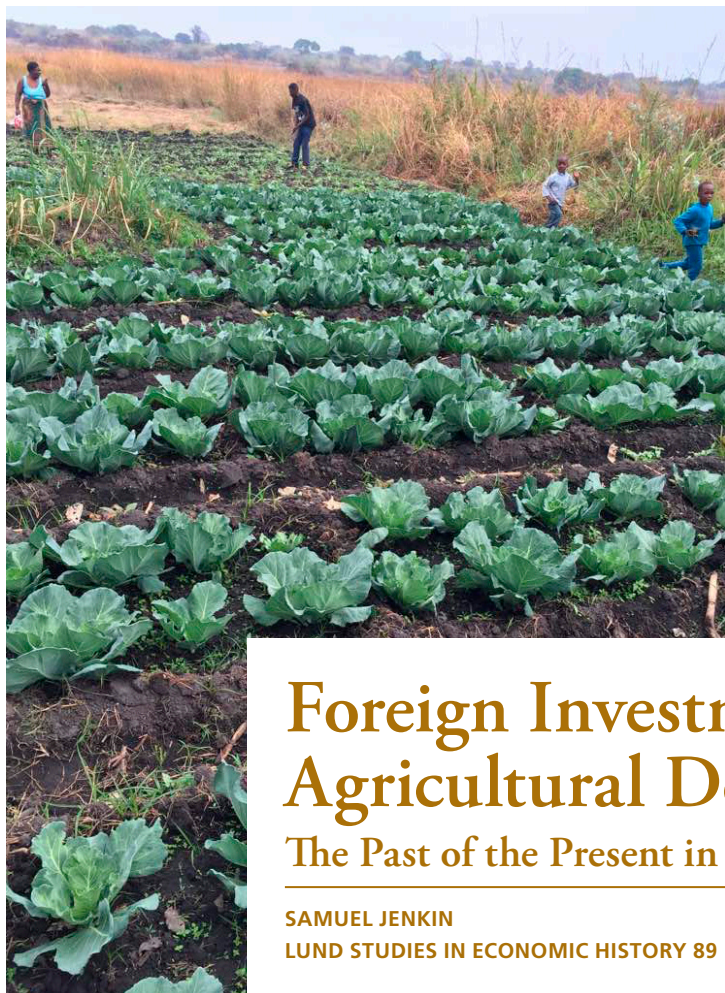
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PO Box 117  
221 00 Lund  
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# Foreign Investment in Agricultural Development

The Past of the Present in Zambia

SAMUEL JENKIN

LUND STUDIES IN ECONOMIC HISTORY 89 | LUND UNIVERSITY



# Foreign Investment in Agricultural Development

The Past of the Present in Zambia

Samuel Jenkin



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DOCTORAL DISSERTATION

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The Past of the Present in Zambia

Samuel Jenkin



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# 1. Introduction

## The Motivation for the Study

Over the past decade, the role of foreign investment in agriculture, particularly in land, has received significant media attention. We have seen hundreds of reports of large scale land acquisitions throughout the developing world, as food-importing countries across the globe grapple with food security issues and the developed world increased, perhaps fleetingly, its interest in the production of biofuels.

When the World Bank returned after 25 years to the critical theme of *Agriculture for Development* in its World Development Report 2008, it gave little attention to the role of foreign investment in the sector. Rather, the focus was on smallholders, the role of whom the Bank sees as critical to successful poverty reduction and development – principally through the connection of smallholders with incentives and markets (World Bank 2007). Where international factors were addressed, these tended to focus on how to incorporate smallholders in agriculture-based countries into the broader agribusiness value chain. In the period since the Report's publication, the role of foreign investment in agriculture, and in particular investment in land, has received significant media attention. Much of this media attention, first arising following significant food price rises in 2008, has focused on this process of so-called 'land-grabbing', despite the fact that many of the identified acquisitions fail to materialize, either in the scope first reported or indeed at all.

The increased attention led the Bank to consider its own study of the issue, building on the existing media reporting through a combination of country case studies, yield gap analyses and resource inventories to present its *Rising Interest in Global Farmland: Can it Yield Sustainable and Equitable Benefits?* (World Bank 2011). The study is essentially a policy document and guide for governments and landowners in considering how to undertake socially acceptable land transfer to foreign owners. It touches only briefly on the role that foreign investment can play in stimulating and supporting improved productivity in smallholder agriculture and through this, rural development more generally.

Where this does occur, the study suggests that local communities can benefit from foreign investment in agricultural land through four main channels: provision of public goods and services associated with land compensation; employment generation; access to technology and markets for smallholders; and payment of

taxes to local and central governments (World Bank 2011). An earlier policy paper from the International Food Policy Research Institute, paints a similar picture, with the benefits of large-scale land acquisition centered primarily on possible contract farming and out-cropping arrangements involving local smallholders (Von Braun and Meinzen-Dick 2009). The potential impacts listed are not extensive and are presented at the abstract level. Neither of these publications adequately incorporates existing development theories to support its policy positions. While a close reading can detect implicit support for specific economic approaches, rarely, if ever, are these referenced, making it difficult for readers to link potential policy prescriptions to the broad body of economic theory.

The aim of our present study therefore is to ground its analysis firmly within the bounds of economic and agricultural development theory, by establishing a structured analytical framework for considering the potential role of foreign investment in supporting agricultural development. The framework is developed to be time and space neutral, such that it can be utilized in various geographic settings and across different time periods, enabling the assessment of continuity and change over time. The general analytical framework developed will then be applied to assess the impact of foreign investment in agriculture in the case of Zambia. According to the independent land monitoring initiative, Land Matrix (2018), approximately 36 percent of large scale acquisitions ('land-grabbing') has taken place in Sub-Saharan Africa<sup>1</sup>, including Zambia, making this region and Zambia in particular an interesting choice to focus our study. One of the principal sources of data for our study as it assesses the modern experience of foreign investment in Zambia comes from the Zambia Development Agency. The nature of this data will be discussed at length in Chapter 3, but it is pertinent at this stage when considering the timing of the initial 'land-grabbing' debate and the motivation for focusing this study in the Zambian context, to acknowledge the sharp increase in foreign interest in Zambian agriculture since late last decade (see Figure 1.1).

Our study will look to consider the long term impacts of foreign investment in agriculture, at all times seeking to balance the need for historical context with the theoretical underpinnings of the analytical framework. To do this, we will compare the colonial administration of Northern Rhodesia (1924-1964) and the modern multi-party democracy era (1992-2016), two periods of broad openness to foreign investment, while also assessing the post-independence era of the first and second republics (1965-1991). The remainder of this chapter will present an elaboration upon the motivation for the study, the choice of Zambia as the central case study and an outline of the general objectives, contribution and research questions.

---

<sup>1</sup> As of January 2018, Land Matrix had identified 1,476 land deals meeting its inclusion criteria. Of this number, 534 were recorded in the regional breakdown adopted by the organization: Central Africa (72), Eastern Africa Including Zambia (290), Southern Africa (16), Western Africa (156).





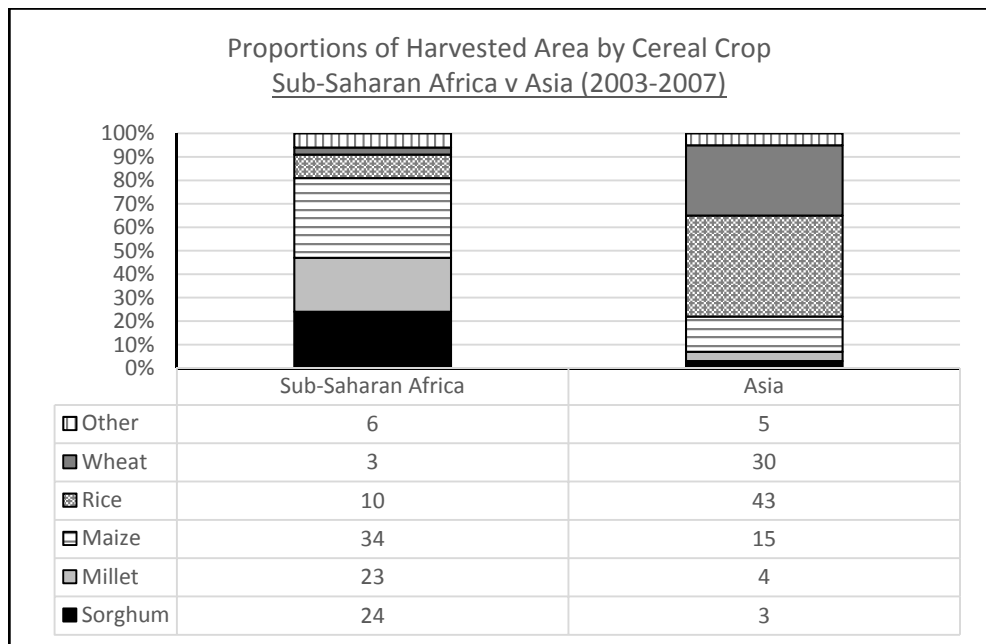
Figure 1.1: Pledged Investments in Zambian Agriculture, 2010 US Dollars. Author's calculations based on ZDA data

## African Agriculture – A Green Revolution?

In July 2004, then Secretary-General of the United Nations, Kofi Annan, called for a “uniquely African green revolution” to support the fulfillment of the Millennium Development Goals (Annan 2004). The call was a recognition that the fundamental advances in agricultural technology that had occurred in Latin America, the Middle East and Asia since the mid-20th century, which had seen significant increases in crop yields and concomitant improvements in food production and economic development, had bypassed Africa. In particular, the lack of broad agricultural advancement in Africa was mirrored in the fundamental success witnessed in Asia, where a prominent role of government in supporting positive intervention in the agriculture sector lay the foundations for the successful ‘East Asian Miracle’ development experience (Timmer 1992). Here, the important role of technological change in agriculture is stressed, which in the form of high yielding and pest resistant crop varieties and improved artificial fertilizers presented the potential for rapid productivity increases in much of the developing world’s agriculture.

Why, given the successful green revolution in Asia and its important role in supporting an agricultural transformation, have we failed to see similar widespread results in Africa? This very question formed the basis of a World Bank research

project between 2007 and 2010. A variety of reasons for the failure of a widespread African green revolution have been identified, again often mirrored in the Asian experience. The perceived success of Asian agriculture has been linked not only to newly developed crop varieties and artificial fertilizers, but to the capacity to best take advantage of these (Johnson et al 2003). Here, Asian economies had a principal focus on rice and wheat cultivation under irrigation, for both internal and export markets. High population densities and conducive agro-climatic conditions, with high levels of seasonally-appropriate rainfall, increased returns on investment in infrastructure development, while access to fertilizer and credit was supported at the time by developmentally-oriented governments. This experience contrasts markedly with the experience of Sub-Saharan Africa, which has agro-climatic conditions supporting a diversity of land types and crop varieties, widespread soil fragility and limited irrigation potential, as well as low (on average) population densities that limited the perceived returns on infrastructure investment (Eicher 1995, Eicher and Kupfuma 1998). Figure 1.2 displays the vastly different cropping patterns between Asia and Sub-Saharan Africa. Where in Asia technological advances in the production of rice and wheat stimulated agricultural transformation, these crops make up less than 15 percent of harvest area in Sub-Saharan Africa, highlighting the challenge posed by simply seeking to transfer Asian green revolution technologies to the Africa context.



**Figure 1.2: Differential Crop Mix, Sub-Saharan Africa and Asia. Adapted from Tsusaka and Otsuka (2013)**

In addition, Johnson et al (2003) argue that the type of important government intervention required to support increased fertilizer use at appropriate times (subsidies and credit mechanisms), was particularly out of vogue in the 1980s and 1990s, during which time a number of African governments were undergoing structural adjustment programs. Earlier surveys of green revolution technologies in Africa also identified several constraints to success. In a meta-review of the introduction of high-yielding crop varieties, Lawrence (1988) identified labor constraints as a common barrier to success, both with respect to labor availability at times required by various tasks such as fertilizing, as well as the capacity of farmers to meet the costs of additional labor needs required by specified weeding and spraying programs. Of note was an acknowledgement that significant success had been found in those countries with previous settler farmer communities, where governments were able to leverage existing, well-established extension networks (Lawrence 1988). This was particularly the case in Southern Rhodesia (modern Zimbabwe), where hybrid maize varieties were being implemented in the 1950s, the success of which pre-dated the early Asian success in India (Eicher 1995, Eicher and Kupfuma 1998).

So, despite a number of limited successes in introducing new high-yielding crop varieties in Africa, ecological fragility, limits on existing and potential infrastructure, and agro-climatic variation appear to have restricted the potential for widely applicable solutions. At the same time, arguments against the very concept of a green revolution have focused on the ecological risks of mono-cropping and the perceived food security risks of African populations beholden to multinational corporations being raised (Lawrence 1988, Thornton 2007). This heterogeneity, combined with the structural change that has occurred in global markets since the Asian success, creates a very different set of circumstances for Africa today in its pursuit of a green revolution (Otsuka and Larson 2013). None of these issues militate against the importance of the agricultural development for sustained economic transformation in Africa, but rather suggest that a greater emphasis on regional and local solutions based on variable geographical conditions will be required than may perhaps have been the case in Asia.

## The Importance of History

History matters, and just as it is important to understand the geographical conditions for assessing agricultural development, it is the role of the economic historian to ensure that sufficient context and understanding of the past is brought to bear on the issues and concerns of today. At the same time as the World Bank was looking to the future of agriculture in the developing world, and Africa in particular, a growing economic history literature quantifying the impacts of colonial policies on long-term

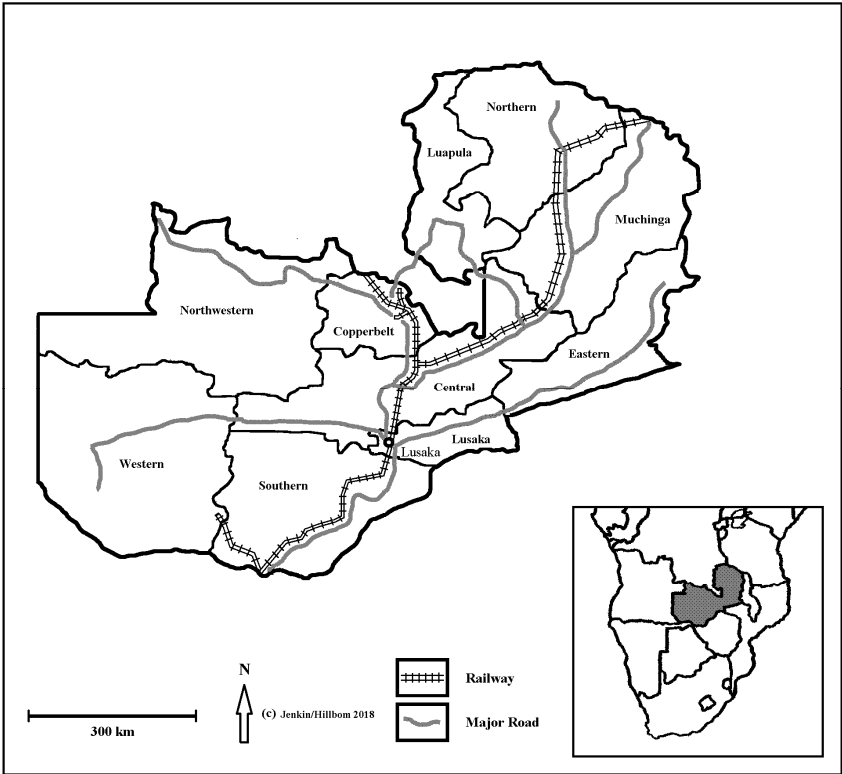
economic performance was reassessing the legacy of colonialism, including agricultural growth and sectorial change (Engerman and Sokoloff 2002, Acemoglu et al. 2001, Easterly & Levine 2012, Putterman & Weil 2010).

While the literature is extensive and varied, at the global level three separate yet interrelated channels of transmission for the features of economic success are most evident in these works. Firstly, the diffusion and access to European agricultural technology is argued to have enhanced productivity and facilitated commercial exploitation of natural resource abundance (Easterly and Levine 2012). Secondly, the accumulation of human capital through the education, skills and knowledge of European migrants improved agricultural production and productivity (Woodberry 2008). Thirdly, the institutional response to the factor endowments (land and labor) that faced colonizers upon arrival impacted development pathways. Acemoglu et al. (2001, 2002) argue that the implementation of ‘developmental’ or ‘inclusive’ institutions adopted from the mother country in settler colonies where there were limited indigenous populations, positively impacted long-term economic development. In these settings, broad access to economic and political markets, secure property rights and use of tax revenues for provision of development enhancing public goods was guaranteed. This was in contrast to the ‘extractive policies’ adopted in non-settler colonies. In a similar vein, Engerman and Sokoloff (2002) argue that land/labor ratios and climatic conditions for the choice of agriculture conditioned colonizers’ choice of institutional arrangements, and therefore the levels of (in)equality and long-term growth prospects in the colonies.

There is a risk with such formulations to consider colonialism as a purely exogenous phenomenon, dismissing indigenous actors as passive recipients of colonial submission. To do so risks undermining local agency in responding to the new economies in which they found themselves actors and neglecting the (often violent) political response to the erosion of traditional structures. Seeking to return local agency into the analysis of the implementation and development of colonial institutions (through an endogenous processes) has been the focus of a number of studies, particularly in the African context (Austin 2008, Bayly 2008, Frankema et al. 2016). Underlying such analyses is an understanding that colonial settlement is a *process*, not an *event*, and the nuances of how that process takes place over time is critical for assessing its long-term outcomes. In a similar way, foreign investment is not a single, exogenous event, but rather a series of flows which in both isolation and combination have the potential to impact the recipient country and local actors within it. In this context, the present study will seek to consider the dynamic impact of the colonial experience on agricultural development in Zambia, and determine whether, and to what extent (if any), this experience continues to be felt within the Zambian agriculture sector today.

# The Case of Zambia

Zambia is a landlocked country (see inset on Map 1.1) exhibiting relative land abundance and low population density. It contains significant peripheral areas remote from national and international markets, presenting difficulties in including the entire population in a coherent development strategy. In a modern democratic setting, how to rationally focus investment where it will result in the greatest aggregate benefit to the population, without marginalizing peripheral regions and their voting base, is common concern in the developing world. In this context, an assessment of the Zambian experience is expected to present lessons for developing countries more broadly, particularly those in Sub-Saharan Africa.



Map 1.1: Zambia – Provinces and Principal Transport Infrastructure.

In addressing the colonial history of Africa, Austin (2010) noted that many African colonies were short of both mineral deposits and land suitable for profitable agriculture. Zambia is an exception to this observation in having had an abundance of both. In the early twentieth century, copper mining became the leading earner of

export revenues as well as the biggest source of wage employment. Meanwhile, there was an excess of good farmland and the development of the mining sector resulted in, at least in an African context, an early and exceptional urbanization providing a consistent internal market for agricultural products.

In early development economics, natural resource abundance was generally understood to be favourable, providing pre-conditions for economic progress including sectorial change (Nurkse 1953). Since this time however, the economic performance of natural resource rich countries has been repeatedly investigated and debated (Sachs and Warner 1995, Gylafson et al. 1999, van der Ploeg 2011, Willebald et al. 2015). Zambia provides a good case for where generous initial conditions appeared to offer opportunities for economic growth and agricultural development. Furthermore, foreign investment has played a long-standing role in the Zambian economy, in both the colonial and post-independence periods, making it a suitable candidate for a comparative historical assessment focused on this phenomenon.

There has been general optimism regarding the development prospects of the country, and it is an example of a strongly performing African economy with rising GDP per capita levels since the turn of the millennium, reflecting a trend seen across much of Sub-Saharan Africa (Thorbecke and Ouyang 2016).

Yet this rapid recent growth in Zambia masks a more complex development story. With an economic historian's preference for longer-term dynamics, it is tempting to conclude that the recent growth performance is merely returning GDP per capita back to pre-and early independence levels and that much of the recent growth in average income levels is a result of a Chinese-inspired copper boom. Conscious that the post-independence period has also witnessed significant population growth, it is interesting to graph the rise in Gross Domestic Product with concurrent GDP per capita levels across the length of the World Bank's data series. Figure 1.3, in depicting a trumpeting elephant, demonstrates that for the majority of the independence period, the relative prosperity of the Zambian population was in decline.

Zambia attained independence from the United Kingdom in October 1964. Up to this point, as Northern Rhodesia, it had been closely connected economically with Southern Rhodesia (modern Zimbabwe) and South Africa, and had for a period been in a formal political federation with Southern Rhodesia and Nyasaland (modern Malawi), this union dissolving in 1963. Unlike Southern Rhodesia, which experienced a high degree of white settlement, Northern Rhodesia was relatively sparsely populated by settlers, though the number of commercial farmers that settled and which played a prominent role in the country's economic and political development was sufficient for Mosley (1983: 5) to classify it as a settler colony. For Mosley (1983: Chapter 1), a settler colony is one that saw settlement by European landowner-producers, who have a share in government but whom nonetheless remain a minority of the population and whom remain dependent, at



least in terms of labor, upon the indigenous population. He identifies three physical preconditions for this to occur, all of which are correlated:

- a large part of the country is above 1,000 meters from sea level
- much of the country enjoys annual rainfall of greater than 500mm
- significant freedom from tsetse fly infestation (Mosley 1983: 5ff).

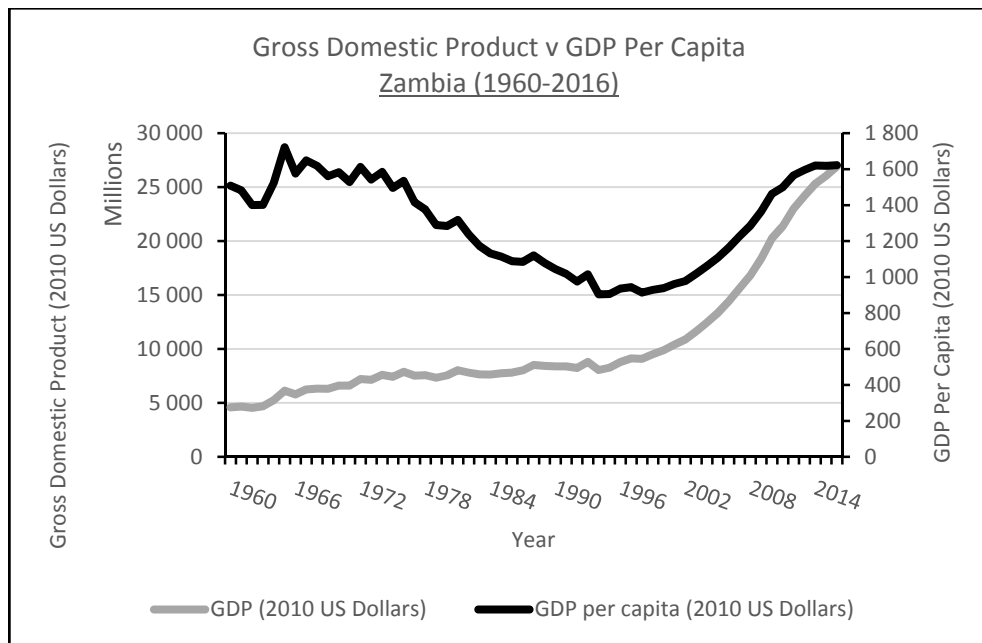


Figure 1.3: GDP and GDP Per Capita in Zambia. Data from World Bank

In this way, eight of twelve settler societies he identifies across the breadth of Asia and Africa fall within the vicinity of Zambia, five of which share a land border (Angola, Dem. Rep. Congo/Belgian Congo, Mozambique, Zimbabwe/Southern Rhodesia, Botswana/Bechuanaland). The others are Kenya, South Africa and Swaziland.

In 1965, Zambia had a population of 3.56 million (WDI 2011). Today, the population is estimated at over 16.5 million, a similar size to neighboring Malawi and Zimbabwe, though with a much lower population density (see Table 1.1). In a regional context, between 1965 and 2016, Zambia experienced the second largest population growth rate of the 15 current members of the Southern African Development Community, behind only Tanzania (see Table 1.1). With respect to population density, Zambia remains one of the least dense countries in the region, with a population density of 22 people per square kilometer. Such low density becomes more significant when one considers that Zambia also possesses a highly urbanized population, with over 40 percent of Zambians living residing in urban

areas. This urbanization is not a new phenomenon and even in the years before independence, many left rural villages with a view to seeking employment in urban centers, particularly those connected to the mining sector.

Southern African Development Community	Population (2016 est.)	Population Density (2016 est.)	Population (1965 est.)	Population Density (1965 est.)
Seychelles	94,677	205.82	47,500	103.26
Mauritius	1,263,473	622.40	753,000	370.94
Swaziland	1,343,098	78.09	391,546	22.76
Lesotho	2,203,821	72.59	933,655	30.75
Botswana	2,250,260	3.97	597,190	1.05
Namibia	2,479,713	3.01	682,551	0.83
Zimbabwe	16,150,362	41.75	4,410,212	11.40
<b>Zambia</b>	<b>16,591,390</b>	<b>22.32</b>	<b>3,563,407</b>	<b>4.79</b>
Malawi	18,091,575	191.89	4,058,673	43.05
Madagascar	24,894,551	42.79	5,769,218	9.92
Angola	28,813,463	23.11	6,203,299	4.98
Mozambique	28,829,476	36.66	8,203,076	10.43
Tanzania	55,572,201	62.74	11,683,528	13.19
South Africa	55,908,865	46.09	19,813,947	16.33
Dem. Rep. Congo	78,736,153	34.73	17,369,883	7.66
		<i>Growth (1965-2016)</i>		
<i>SADC Total</i>	<i>333,223,078</i>	<i>3.94</i>	<i>84,480,685</i>	
<i>Sub-Saharan Africa</i>	<i>1,033,106,135</i>	<i>4.01</i>	<i>257,740,253</i>	

**Table 1.1: Population and Density in the Southern African Development Community, 1965 and 2016. Sorted by 2016 Population. Data from the World Bank (2018).**

Both before and since independence, Zambia has relied heavily on the mining sector, and in particular copper mining, for economic growth and export earnings. At the time of independence in late 1964, the mining sector alone accounted for 49.6 percent of Zambia’s GDP. By contrast, agriculture accounted for 11.5 percent and manufacturing and construction a combined 10.4 percent (Saasa 1987). At the same time, mining accounted for a significant proportion of government revenue; copper alone accounting for in excess of 50 percent of tax income in the years before 1970 (Saasa 1987). Because of the enclave nature of the mining sector, the role of foreign economic players and the long-term decline in copper prices from the 1970s onwards, Zambia is often seen as an example of the resource curse<sup>2</sup>. The decreasing trend in the overall contribution of the mining sector for much of the post-independence period up until the turn of the century, followed by a Chinese-inspired

<sup>2</sup> See Du Plessis and Du Plessis (2006) for a review of the literature on the resource curse in the Zambian context.

copper price increase, is evident in Figure 1.4, where mining is captured within the Industry sector.

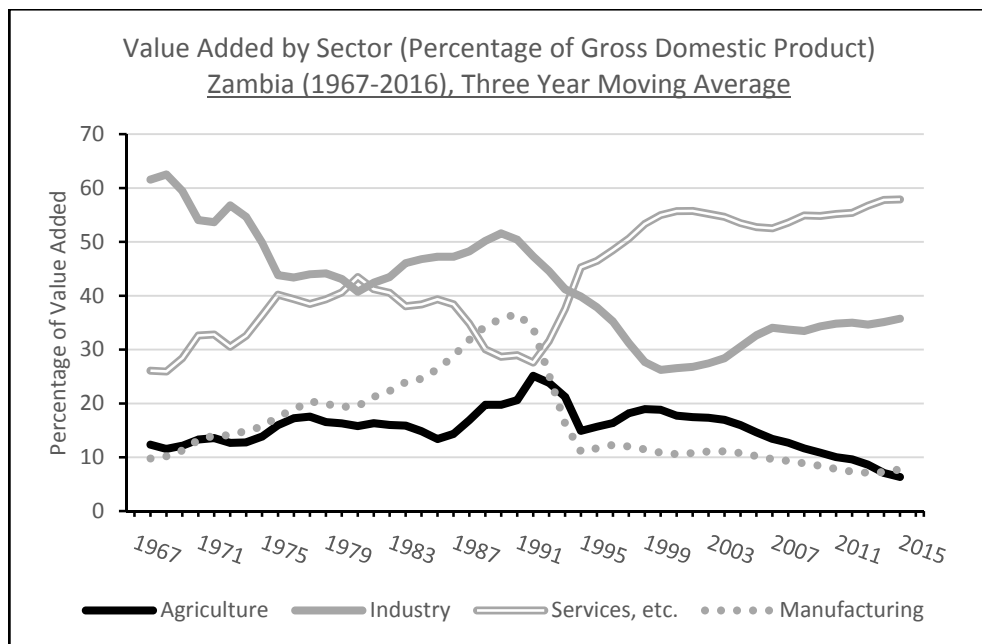


Figure 1.4: Zambia Value Added by Sector, 1967-2016. Data from World Bank.

Figure 1.4 indicates three other important points about Zambian economic growth which are of relevance to the current study. Firstly, during the 1970s and 1980s, a government controlled Manufacturing sector (a subset of the Industry sector) played an increasing role in supporting the economy, as the contribution of mining continued to fall. Secondly, the period following the return to multi-party democracy in late 1991 saw a rapid decline in the contribution of Manufacturing, as government support was withdrawn, and a concomitant increase in the contribution of the Services sector. Thirdly, the period since 2000 has seen a sustained decline in the contribution of Agriculture to GDP.

Combined, these points raise concerns that Zambia runs the risk of a “premature deindustrialization” along the lines suggested by Rodrik (2018). In this context, and given the current structure of global markets, sustained economic growth may be required to come via the more difficult agriculture-led path (where labor productivity is lower than in Industry) or services-led (requiring high investment in human capital), both divergent from the growth paths of successful industrializers of the last century. Austin (2016) is less pessimistic regarding the potential for an industrial-led structural transformation. Despite the declining trend in manufacturing in Sub-Saharan Africa, he suggests that changes in factor

endowments, with increasing population and higher education levels following broad-based post-independence investment, make Africa better placed than at any point previously. Meanwhile, Thorbecke and Ouyang (2016) stress the necessity for such an industrial take-off to absorb the population leaving agriculture in more productive employment, thereby seeking to avoid what Lipton (2004) describes as the migration of despair.

A land-locked country such as Zambia is understood to be at a particular disadvantage as transport costs for international trade are high (Gallup et al 1999), a condition that puts pressure on the development of key infrastructure. A similar argument about the disadvantage of remoteness goes for agricultural producers' opportunities to access domestic markets. That being said, where there is domestic demand for farm products from an urban population, as was the case in Zambia, remoteness and being land locked can also work as an advantage as it provides protection from foreign competition.

Zambia has not experienced a successful agricultural transformation, a concept articulated perhaps most clearly by Timmer (1988). The concept stems from observed historical experience, which dictates that where agriculture exists, no sustainable long-running pattern of economic growth and development has ever been achieved without a fundamental transformation of agriculture. While short periods of growth may occur based on the performance of other sectors despite a backward agricultural sector, such growth is illusory from a development perspective. Timmer draws heavily on the intellectual heritage of Lewis (1954), Kuznets (1955) and Ranis and Fei (1961) in which the process of economic development sees the transfer of resources (labor and capital) from a less productive to a more productive sector in a stylized dual sector economy. The point of departure has as its basis both the historical record of development in today's industrialized countries and the reality of neglect cast by development theorists that built upon Lewis's early work. For this, Timmer (1988) identifies an apparent paradox, which sees firstly a uniform and pervasive decline in the contribution of the agriculture sector to the broader growth process; and secondly, an additional uniform and pervasive pattern of agricultural growth accompanying or preceding the broader growth process.

No such process has occurred in Zambia. Almost 55 percent of the population continue to make a living out of agriculture, while almost 60 percent of the population live in rural areas (WDI 2018). From the point of view of the sectorial location of the labor force, the country's economy is still agricultural based. It is perhaps not surprising therefore that the first of 10 development outcomes within Zambia's Seventh National Development Plan, released in mid-2017, is *A Diversified and Export-Oriented Agriculture Sector*<sup>3</sup>.

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<sup>3</sup> GRZ, National Development Plan 2017-21, 2017, Lusaka, 65ff

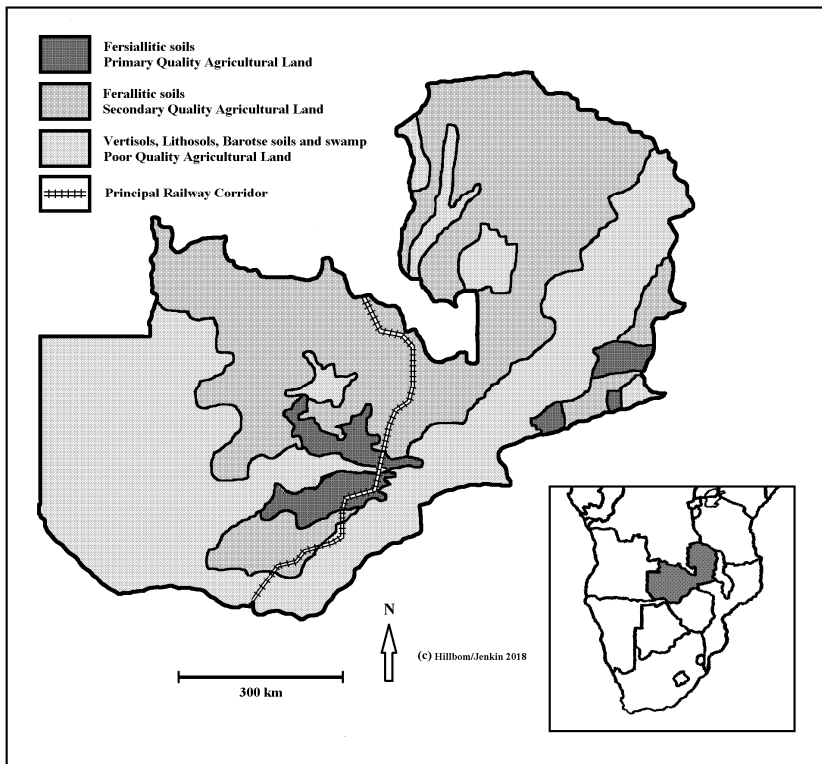
In its *Rising Interest in Global Farmland*, the World Bank (2011) presents a picture of a modern *Zambian* agriculture sector currently producing at well below its potential based on factors endowments – a ratio of cultivated land to total suitable area below 30 percent and a yield gap (potential yield minus actual yield) in excess of 80 percent. These assessments place Zambia in Group 4 of the World Bank farmland typology – those with suitable land available and a high yield gap. In this conceptualization, Zambia has significant scope for improvement in agricultural outcomes and may be considered a good candidate for foreign investment in the sector. Of this group, the Bank writes:

Labor supply often constrains expansion by smallholders, implying that not all potentially suitable land is used for crop production. The prospect of outside investment can help foster local development. If migration from other regions is inelastic in the medium term, as is often the case, intensification will require larger farm sizes, and labor-saving mechanization may be the most attractive short-term option. In some cases, the investment needed for this transition can be generated locally. However, if it requires the introduction of new crops and farming systems, large investments in processing, or links to export markets, the amounts of skill and capital available locally may not be sufficient, and outside investors can have a role. In these cases, bringing institutional arrangements, technology, and infrastructure together could thus provide a basis for mutually beneficial and agreed on land transfers. (World Bank 2011: 90)

Soil types vary across the country, with high-quality *fersiallitic* soils predominant in the Central Province, as well as the Mazabuka and Chipata districts, representing the most fertile cultivation land in Zambia. *Ferrallitic* soils, covering half of the country, are also considered appropriate for crop cultivation under appropriate conditions, and cover much of the northern areas previously utilized for *citemene* slash and burn techniques. Remaining soil types are less suitable for agriculture, with various types of *vertisols* better suited to grazing or timber production (Moyo et al 1993).

The importance of the mining sector to the economy has already been noted. However, it is a by-product of this importance, the coming of the railway, which has perhaps shaped *Zambian* history more than any other. It made farming settlement possible and as a result, plays a significant role in the agricultural history of Zambia. It was however, from the outset a ‘miners’ railway – its primary purpose, configuration and ultimate destination determined almost exclusively by the desire to facilitate the extraction of mineral resources from Northern Rhodesian territory: “...its direction being determined not by agricultural but by engineering needs, the exact course being planned in such a way as to incur the minimum expenditure on bridges, cuttings and viaducts” (Gann 1964: 126). It was built to serve the mines, rather than open the territory to agricultural production (Darby 1931). That the

railway passed through or within close proximity to the majority of the country's best agricultural land, was principally the result of chance (see Map 1.2).



**Map 1.2: Zambia – Agricultural Capacity. Based on Davies (1975: 27)**

The central nature of the route, creating a 815km long spine through the entire territory, made it possible to bring the administration of the formerly separate North-Eastern Rhodesia and North-Western Rhodesia together for the first time. The significance of the railway for communications and the transport of goods and services in the territory is evidenced in the fact that by 1925, there was only 43 miles of all-weather roads and less than 1,900 miles in total of tracks suitable for vehicular traffic<sup>4</sup>. The railway, once in place, provided for an increase in the movement of local labor to the mines, both to the north and south, and with the inevitable arrival of traders adding to the existing body of white railway workers, created a ready population centered on the stations along the line of rail.

All of this makes Zambia an interesting case study for an historical analysis of the role of foreign investment in the agriculture sector. The study is time limited to

<sup>4</sup> *Colonial Reports – Annual No. 1292, Northern Rhodesia Report for 1924/25*



the period from the beginning of British Colonial Office administration in Northern Rhodesia from 1924, prior to which foreign investment in agriculture was limited. Issues of periodization and study limitations are expanded upon when describing the study's methodological approach (Chapter 3) and in the relevant context to the empirical analyses.

## Contribution, General Objective and Research Questions

This study contributes to the wider research on the development of African agriculture by taking a long-term approach to the role of foreign investment in Zambia's agriculture sector. It does this by adopting a broad conceptualization of what constitutes foreign investment in agriculture, one which incorporates both the settler agriculture of the colonial era and the generally understood definition of foreign direct investment (or FDI) in modern times. It is acknowledged that the motivations of many settler agriculturalists, particularly family-based farms, may differ from modern multi-national companies investing in capital-intensive farming or agro-processing. But the focus of this study, as will be articulated through the development of the analytical framework in Chapter 2, is the similarity of assumptions regarding what we expect the impact of such foreign influence to be. It must also be acknowledged that there existed distinctions within the settler agriculturalists as there does within foreign investors in the modern period. In Northern Rhodesia, family-based farmers were joined in the acquiring of land by nobles resident in England as well as large companies which utilized on the ground managers (Gann 1964: 131). Similarly, foreign investments in the modern era contain a spectrum of investment types, from multi-million dollar tea plantations to family-based farming enterprises investing in the tens, not hundreds of thousands<sup>5</sup>.

In utilizing this broad conceptualization, we are afforded the opportunity to consider the impact of foreign investment in agriculture over time, and how this interacts with and responds to the prevailing socio-economic and political institutions. The study also seeks to use available data in ways not previously considered, and thereby look for connections based on how theory interacts with our empirical understanding, rather than utilizing data-driven methods to identify statistically causal relationships. The decision to follow such a course is not taken due to any belief in the adequacy of statistical methods for assessing the impact of foreign investment, but rather that the questions being asked and the data available to address them do not lend themselves to such an approach.

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<sup>5</sup> The principal data set for modern Zambia consists of 832 observations, 129 of which relate to investments of \$200,000 or less (2010 USD) and 58 in excess of \$10,000,000 (2010 USD)

The study seeks to balance the need for specificity which comes with the case study approach, with a level of coverage appropriate to the research questions. In Zambia, where agricultural and investment policy is driven at a national level, the nation state makes the appropriate unit of study. In doing so, the study loses the opportunity to make detailed assessments about the impact of foreign investment at the micro level, in particular districts and particular industries, and also the potential to draw general conclusions across the developing world or even within Sub-Saharan Africa.

In seeking to fulfil its ambitions, the study is guided by the following research questions:

*Research Question 1:*

How has foreign investment in agriculture impacted the development of the Zambian agriculture sector?

*Research Question 2:*

Does the role of foreign investment in Zambian agriculture conform to received theoretical wisdom?

*Research Question 3:*

Are there reoccurring patterns of foreign investment behavior in Zambian agriculture from the colonial era to present day?

In assessing these questions, a fourth more general discussion regarding the implications our findings have on the debate surrounding future agricultural development in Zambia will be considered in our concluding chapter.

This study establishes an analytical framework built upon economic development theories touching on agriculture and foreign investment, both separately and in unison. This analytical framework actively supports our investigation, which takes a case study approach to assessing the foreign factor in the historical development of agriculture in Zambia. Via use of an analytical narrative, we draw out observations about the role that foreign investment in agriculture has played in helping (or hindering) the agricultural development process. It also seeks to assess whether there existed any institutional hindrances to growth, and whether these interfere with the capacity to have the theoretical expectations from the analytical framework play out.

## Structure of the Study

The study is divided into eight chapters.

Chapter 2 develops the analytical framework to guide our empirical analysis. The chapter takes a three-staged approach to constructing the framework from first principles, commencing with agricultural production in an isolated economy. The chapter gradually introduces relevant economic theories applicable to the subject, before completing the framework and detailing the core elements to be referenced in the empirical analysis.

Chapter 3 articulates the methodology adopted for the empirical analysis and details the data sources considered as part of the study. In doing so, it seeks to describe the comparative methods utilized within the relevant social science traditions, and clearly identifies the strengths and weaknesses of the data available.

Chapter 4 presents a brief history of European activity in the region leading up to the study period, with a view to providing context for the reader.

Chapter 5 presents the first of three empirical chapters. Focused on the period of colonial office administration in (then) Northern Rhodesia (1924-1964), the chapter assesses the origin and distribution of settler agriculture and its impact on the agricultural development of the local African population.

Chapter 6 presents the second of three empirical chapters. Focused on the period of the first and second republic in post-independence Zambia (1965-1991), the chapter charts the implications of the suite of 'Zambianisation' policies gradually implemented from the late 1960s, and the impacts these had in conjunction with heavily state-oriented agricultural policy settings.

Chapter 7 represents the final empirical chapter. Focused on the multi-party democracy period in modern Zambia (1992-2016), the chapter assesses the origins and distribution of foreign investment in agriculture, discusses the similarities or otherwise of this investment with foreign investment more broadly, and makes inferences about its impact on local agricultural actors.

Chapter 8 concludes the study by making comparisons between the two historic periods, utilizing the research questions to form some general conclusions about the Zambian case and in doing so, identifying some areas for potential further study.



# 2.The Analytical Framework for the Study

## Introduction

This chapter develops the analytical framework through which the case of agricultural development in Zambia will be examined. The framework is constructed with reference to development theories touching on both agriculture and foreign direct investment. In this way, the framework allows for a political economy approach to be taken in exploring the impact of foreign investment in agriculture over time, including its role in developing or hindering markets and creating or expanding linkages within the existing agricultural economy. In doing so, the framework will enable an exploration of our research questions, and explicitly provide the scope to develop a response to Research Question 2, which focusses on whether Zambian experience conforms to received theoretical wisdom.

The relevance of any analytical framework rests upon its ability to be articulated clearly and be easily understood, to be able to isolate the central phenomena that it seeks to explain, and to have the capacity to be tested in the ‘real world’ through either quantitative or qualitative observation. It cannot, nor should it seek to, describe and encompass all known elements of socio-economic relations. The analytical framework for this study will be articulated in three stages, moving from an initial conceptualization of an isolated agricultural economy through the introduction of a non-agricultural sector and subsequently, the opening of the stylized economy to foreign investment.

## Stage 1: Factor Endowments and Initial Conditions

Factor endowments, and the prevailing ratios that exist between the traditional elements conceived by classical economics (land, labor and capital), form an important aspect of the theoretical framework for this study, specifically in combination with geography as providing the initial conditions for agriculture production and growth. How these elements interact with and influence the wider

economy and its socio-economic institutions is also of relevance, and have been the focus of significant theoretical contributions linking initial conditions to long-run institutional development (Engerman and Sokoloff 2002, Acemoglu et al 2002).

The concept of an isolated agricultural economy is introduced to describe a socio-economic setting with similar elements to the classical economics conceptualization of a closed economy. While it is acknowledged that a closed economy is unrealistic, and that a long history of known trade throughout Africa is extensive (see Hopkins 1973 and Austen 1987 for broad coverage), it is argued that the extent of trade undertaken in many areas, and pre-colonial Zambia in particular, is unlikely to have significantly impacted the balance of the agricultural economy to the extent of generating a significant driving force for African agricultural commercialization. In particular, transport costs associated with trade in agricultural products (for example human portage) are considered significant barriers where communities were not based near internal or coastal waterways. Such transport cost-induced isolation also mitigates against the potential for a Myint (1958) style commercialization within the subsistence sector based on the opportunity of export becoming a vent for surplus.

At this point therefore, trade within the framework is considered limited. This position is taken to enable the isolation of key dynamics to be explored in the study, particularly the introduction and growth of an internal non-agricultural sector, and also because it provided an approximation of the status of the agricultural sector in pre-colonial Zambia. It is not however a fundamental tenet of the framework, and it is assumed that the options for surplus production that trade opportunities present, as well as the potential stimulus and displacement effect from foreign investment in agriculture, can be adequately captured by broadening the concept of the non-agricultural economy (introduced in stage 2) to include external markets for agricultural produce.

The isolated agricultural economy is not envisaged as the type of static traditional agriculture of the rational peasant assumed by Schultz (1964), in which a relatively passive agricultural economy requires the external injection of technology to increase labor productivity. Rather, what is envisaged is a series of equilibria, in which agriculturalists actively respond to changes in factor endowments, with the potential for endogenous technology and productivity improvements. In this regard, the model takes account of the position of Niemeijer (1996), who stressed the highly non-static nature of African agriculture with particular reference to ecological conditions, but does not support Niemeijer's extension from this observation that African agriculture is therefore a non-equilibrium system. Rather, the framework allows equilibrium to be reached, albeit one constantly adjusting in response to changing conditions. That these adjustments may be survival-oriented responses to significant change in conditions or the 'fine-tuning' to establish equilibrium so discounted by Niemeijer (1996), are similarly accounted for in the framework.

Figure 2.1 depicts the concept of the isolated agricultural economy in which African agriculture responds to the initial conditions (factor proportions and physical geography), and that this response adjusts over time in reaction to changes in those conditions. While changes in factor proportions are a well-accepted and critically important element of classical economics, it is important to note that physical geography can also change over time, for example through the depletion of natural resources. In addition, while natural resource endowments are presented in the framework as an exogenous initial condition, it is understood that there is an endogeneity with respect to how these change over time, with this being an area of new consideration in the literature (Willebald et al. 2015). Within this isolated agricultural economy, with limited to no trade, there is an expectation that production would be at, or very close to, the subsistence level.

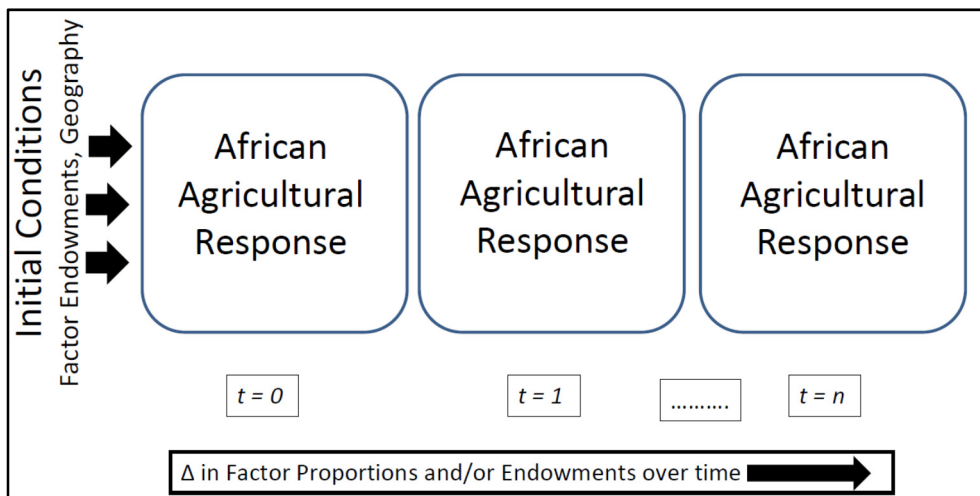


Figure 2.1: Isolated Agricultural Economy, as envisaged by author

It is generally accepted that, with limited isolated exceptions, Africa has been a land abundant continent for the majority of its history, particularly up until and including much of the 20th century. This land abundance led to a prevalence of extensive forms of agriculture, limited by labor scarcity resulting from low population densities.

A leading early proponent of the land abundance theory for Africa was Hopkins (1973). Focusing attention on the economic history and underdevelopment of West Africa, Hopkins highlighted land-labor ratios as critical. Notwithstanding the existence of large-scale towns at various times in history (which were identified with market town or security purposes rather than industrial development), Hopkins highlights the under-population of the West African region as the major constraint

to economic growth. He demonstrates a relatively diverse economy including manufactures and a range of agricultural products, and a general aim of surplus production with the intent to trade, dispelling some earlier myths regarding ‘the lazy African’ in the context of labor productivity. Ultimately however, Hopkins indicates that the tyranny of distance in connecting dispersed populations (given the high costs of human portage) and the limited number of sufficiently affluent consumers, was a constraint on the extension of the market. This latter was not aided by the prevalence of various forms of slavery and bonded labor (well before the trans-Atlantic trade), with its natural limiting effect on the growth of the consumer market. In short:

Underpopulation was critical in preventing market growth because it encouraged extensive cultivation, favoured dispersed settlement and generated strong tendencies towards local self-sufficiency. (Hopkins 1973: 76)

For Hopkins (1973), it was the failure to escape this scenario through either a) a significant population increase leading to an increased intensity in agriculture or b) technical innovation which reduced production costs (itself a result of a lack of demand or supply side pressures from low population and ease of access to slaves), that categorized pre-colonial West African society.

The situation described by Hopkins reflects the absence of the type of dynamic substitution process resulting from trends in relative factor price within the induced innovation theory of Hayami and Ruttan (1970). For Hayami and Ruttan, changes in factor prices, resulting from a relative scarcity in one factor of production, induce the development of innovative ways to substitute for the scarce factor of production. In late 19<sup>th</sup> century United States, the relative cost of labor compared to ample available land led to innovations in mechanical power to substitute human power. During the same period in Japan, the high relative cost of finite land resources induced biological innovations in land management and cropping techniques to increase land productivity. In Hopkins’ West Africa, the availability of abundant land, coupled with low (slave supported) labor costs resulted in the continued elastic supply of both production factors, and therefore insufficient differentials in relative factor prices to drive innovation.

In a much later work assessing the state of African economic history, Austin (2008) essentially confirmed Hopkins’ view on West Africa, suggesting that with minor revisions, the long-standing view regarding factor endowments in Africa holds for the majority of African history south of the Sahara. Of the important revisions, Austin (2008) makes the following points. Firstly, that while labor scarcity can be assumed at the general level, there were significant seasonal fluctuations with respect to labor availability. Outside of the agricultural year, there were significant opportunities to engage in non-cultivation-oriented activities, for example handicraft manufacturing or even capital works for future agricultural



needs (for example land preparation and irrigation works). It is in relation to this latter that Austin (2008) articulates a second revision, where he seeks to have the concept of capital reintroduced to discussions of pre-colonial African economic history. While noting capital is often lost in African factor endowment discussions because capital in this context was in effect the direct result of labor inputs, fixed capital formation which improved labor productivity was integral to African economies. Thirdly, Austin qualifies the concept of land abundance by rightly identifying the ecological fragility of much of Africa's arable regions, placing natural limits on the capacity to move from an extensive to intensive mode of agricultural production. In the historical context, Austin adopts the 'forest rent' concept of Ruf (1995) to capture a one off fertility bounty to be garnered through extensification (for example via the carving out of new cocoa plantations), with subsequent diminishing returns to land as a result of soil instability. Thus, while land abundant for large periods of history, not all areas were capable of supporting intensive agriculture.

This has a mirror in the modern age concerns regarding the ecological capacity of many parts of Africa to sustain the intensity of a green revolution (Thornton 2007). At the same time, rising population growth throughout Africa has shifted land/labor ratios in many parts of the continent, from the traditionally observed land abundance/labor scarcity to land scarcity/labor abundance. Thus, the agricultural growth paths and strategies available in the past are unlikely to be applicable in the present, while opportunities for the type of agricultural intensification seen in the development of Europe, Asia and the Americas may be precarious given the fragility of the soil. The dynamic nature of the framework captures these elements, allowing for changing factor endowments and geographic conditions over time.

## Stage 2: Interaction with the Non-Agricultural Sector

Into this isolated agricultural economy is introduced a non-agricultural sector, which could be (but is not necessarily) associated with the exploitation of natural resources. Importantly, the non-agricultural sector does not produce food products, which necessitates the rise of a nascent commercial agriculture to support workers. This is a rise in demand external to the agricultural economy. Here, it is understood that some existing subsistence farmers will commercialize sufficiently to meet the needs of the non-agriculture sector. These are described in the framework as the 'Commercial Response'. The framework is agnostic with respect to how this nascent commercial class produce its marketable surplus - either through land extensification, increasing labor input (assuming excess or underutilized labor) into existing land holdings, or intensification (increasing productivity or land/labor combination). Those that maintain the previous pattern of production are described

as the ‘Subsistence Response’. The relative size of the Commercial Response becomes a function of the size of the non-agricultural economy, limited by the ability and willingness of subsistence farmers to access the new commercial opportunities<sup>6</sup>. In this, there is an expectation that those located in closest proximity to the non-agricultural production center(s) will be preferenced due to lower transaction costs, specifically transport costs. In the southern African context, Illiffe (1983: 18-19) describes the emergence of not only an African commercial farming class, but an African capitalist class employing wage labor, in response to significant demand from the growing diamond and gold mining sectors of South Africa from the 1870s onwards. This commercial response was subsequently eliminated by government policy in the face of competition with white farmers.

Also introduced at this stage are the socio-political and economic institutions which govern the interaction between the two economies and the various actors within them. The institutions developed can be seen to incorporate the interconnected and multi-directional relationships between the two agricultural sectors and an organizing authority, conceived as the government. These aspects reflect the three-actor analytical framework model presented by Hillbom and Jenkin (2018). In this current framework however, the commercial sector also interacts directly with the non-agricultural sector, which it seeks to serve. No such interaction exists between the subsistence sector and the non-agricultural sector.

There exists a bi-directional relationship of influence between the agricultural economy and socio-economic institutions that guide its operation (and that of the non-agricultural economy). In doing so, it is expected that the agricultural economy is a ‘net’ receiver of such influence – that is, its ability to influence the socio-political and economic institutions that govern its operations is limited. Even in situations where, given the absence of other significant economic sectors, agriculture has a proportionally larger influence on socio-economic institutions, the frameworks to which the agriculture sector is exposed are by definition a function of the totality of all influence. In the stylized model, these include the non-agriculture sector and the government itself, which may have independent interests which compete with those of the two sectors.

The role of factor endowments in influencing the development of socio-economic institutions has been the subject of significant research in recent decades. Geographic initial conditions and factor endowments affect the set-up of economic and political institutions and these institutions in turn feed back into how geography and factor endowments are molded, exploited and managed. In his theory on institutional change, North (1990) lists change in relative prices between factors of production to be a key determinant. The quantity of a resource (abundance or

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<sup>6</sup> The limitations on trade within the model have already been discussed. Likewise, it is assumed that at its earliest stages, the non-agricultural sector is of insufficient size to generate its own trade demand in agricultural products to compete with the agricultural sector.

scarcity), quality (soil fertility and fragility) and the way that extraction and processing is organized affects key institutions governing the resource. Changes in the relative prices of these factor endowments create incentives for adjusting economic and political institutions. Theoretically, a multi-causal relationship is therefore expected with institutions as the rules of the game, and geography (including natural resources) and factor endowments as the initial conditions for playing the game (Austin, 2008).

Across a number of significant works, Engerman and Sokoloff identified the linkage between geography and factor endowments in the long-run economic growth of the Americas (Engerman and Sokoloff 2002 provides an overview of the broad research agenda). Here, those areas which were identified as being geographically endowed to support plantation agriculture (particularly sugar), saw the introduction of significant slave populations or coerced/restricted labor amongst native populations, resulting in the creation of socio-economic institutions which entrenched inequalities. This was the case for plantation agriculture in the southern United States and Caribbean, and the *hacienda* of Latin America. In contrast, the ecology of the northern United States and Canada preferenced a mixed (grain crop and livestock) farming model and, combined with a relatively small First Nations population in comparison to Latin America, resulted in the development of relatively homogenous and equitable societies (Engerman and Sokoloff 2002). These initial inequalities in institutional set up, seen in the main as a response to initial conditions and factor endowments, are seen as the genesis of the relative economic growth performance of the different areas in the intervening period. North (1961) elaborated upon the same dichotomy while focusing on the early development and industrialization of the United States economy, comparing the dual influences of export focus (single commodity versus multiple commodities) and production units (plantation versus homestead) on the industrialization paths of the northern and southern regions of the country (North 1961, Chapters 1, 10 and 11).

A second widely recognized theory linking factor endowments to the long-run development of socio-economic institutions is presented by Acemoglu et al (2002). Importantly, this theory places significant emphasis of population density as a proxy for income per capita, surmising that agglomeration of populations only occurs where economic development is of a sufficient nature. Linking population density in 1500 to modern economic development in 2000, the authors seek to articulate a reversal of fortune through which those areas of the world that were relatively rich in 1500 demonstrate a worse economic performance compared to those that were relatively poor in 1500. The mechanism by which this is purported to have occurred is via the transmission of socio-economic institutions by colonizing powers. Where colonizing powers found high populations, such as Latin America, they introduced extractive institutions, which introduced high degrees of inequality which persist until the present day. In North America, as well as New World offshoots such as

Australia and New Zealand, low population densities allowed for European settlement in large numbers, with the commensurate importation of ‘good’ institutions, including secure private property rights across a wide cross section of the population (Acemoglu et al 2002). The theory is then tested using panel regression techniques across all countries in the world, with principal data being derived from Maddison’s long run economic tables.

While both comprehensive theories, neither are without criticism, with Acemoglu et al (2002) in particular being seen to neglect the diverse periodization in the colonization of different parts of the world, while the binary classification adopted for extractive versus inclusive institutions is seen as overly simplistic. In the context of this study, these difficulties have been specifically outlined with respect to empirical alignment to the African experience (Austin 2008, Hopkins 2009), not least with respect to the taxonomy adopted for classifying colonies, where all African colonies are considered to have been extractive. Hopkins (2009) in particular stresses the importance of a significantly more nuanced typology of colonial regimes, preferring at its narrowest a concept of colonies of settlement, colonies of concessions and colonies of trade. Hopkins’ effort, with its greater geographic flexibility, greatly improved upon the typology presented by Amin (1972) within a dependency context, which saw the western and northern Sub-Saharan countries categorized as Africa of the colonial trade economy, eastern and southern countries as Africa of the labour reserves, and central countries as African of the concession-owning companies.

## **Agriculture and Industry in the Development Context**

Early development theory subordinated the role of agriculture to a primary focus on the industrial elements of the development process. This mainstream, which counted Kuznets (1955), Lewis (1954) and Hirschman (1958) amongst their number, saw the process of economic development as contingent on the transfer of resources (labor and capital) from a less productive to a more productive sector (often interpreted to be the agricultural and industrial sectors, but more appropriately considered, as by Lewis (1954), as the subsistence and capitalist sectors) in a stylized dual sector economy. While it might be argued that many development theorists saw agriculture simply as a source of cheap labor, capital extraction through taxation and (in the very early stages) an earner of foreign reserves to channel into the nascent industrial sector, it may also be the case that this perceived agro-pessimism was exaggerated. Kuznets (1955) for one makes the point about the role of improving agricultural productivity being a vital factor in reducing inequality associated with the initial stages of the industrialization process, while Lewis’ model in no way discounts the potential of capitalist agriculture (Lewis 1954).

The dominant view was challenged by Johnston and Mellor (1961), who identified and articulated five equally important means by which agriculture contributes to the growth process, in doing so calling for a different conceptualization of 'balanced growth' simultaneously promoting agricultural and industrial development. In addition to the 'extractive qualities' identified above, a productive agriculture can also provide a full and cheap source of food and a ready market for the production of the young industrial sector. With this in mind, it becomes vital in the earliest stages of growth to stimulate agricultural productivity improvement, without squeezing the sector into contraction, such that a viable ongoing source of extraction and resource transfer is maintained.

After stressing the inevitable difficulties in balancing the competing demands between sectors in a capital-scarce setting, Johnston and Mellor (1961) sketch out a three phase agricultural development process with conducive policy prescriptions, which essentially describes the overall process of what would come to be known as the agricultural transformation. An initial phase involves establishing the necessary preconditions for agricultural growth, whereby economic incentive systems are put in place to enable personal profit from increased investment and productivity. Such preconditions include relevant land reforms. The subsequent phases mark the transformation from a productive and efficient smallholder agriculture to a capital-intensive, labor-scarce agriculture synonymous with the developed world. Inevitably, the focus of the authors rests on the second of the three phases, and specific areas of policy concern are highlighted to be effective agricultural research, extension programs, strategic input supply (including associated transport facilities), and broad-based education. The important role for government in supporting this developmental approach is clearly evident (Johnston and Mellor 1961).

Ranis and Fei (1961) provided another contemporary counterpoint to the dominant view, presenting a theory of economic development that expressly stressed the importance of agriculture. Taking Lewis' unlimited supply of labor model as its point of departure, Ranis and Fei present a model where agriculture represents a vital and necessary element for early industrial development, providing both the (previously underemployed) labor for the industrial sector and an agricultural surplus to support those transitioned workers.

Important to the dynamic framework being presented, Hirschman's linkage strategy rests on the sequential nature of the phenomenon. Sustainable development must not be attempted all at once, not the least because of the limited resources available to devote to the process. Rather, certain development processes are reliant on the prior undertaking of others, in the absence of which the process in question may stall or collapse entirely. In economic parlance, Hirschman describes this cumulative development process as the creation and attempted rectification by economic forces of a chain of disequilibria (Hirschman 1958: 65ff). It was this belief in sequencing that saw Hirschman criticize the doctrine of balanced growth as

espoused by Rosenstein-Rodan (1943), the concept of a 'big push' associated with the simultaneous investment in complementary, horizontal industries. Effectively, Rosenstein-Rodan (1943) advocates the investment in a region-wide industrial complex in which the workers employed in labor-intensive industries effectively become the markets for each other, thereby ensuring a stability in the development process and limited reliance on, or impact in, world markets.

Thus, taking the concept of balanced growth as a point of departure, Hirschman presents a theory of sequential development, which he entitles unbalanced growth, based on linkages that exist within and between investment opportunities. Fundamentally for the purposes of this study, the unbalanced nature of the growth is both *sectoral* and *spatial*. In articulating the linkage concept, Hirschman has much in common with Fleming (1955), though he expands the nature and specificity of the earlier author's concept of vertical 'connections' by placing them within a well-defined strategic model for the entire development process.

Central to the linkage concept presented is the existence of external economies and nature of investment decisions (the source of such investments is also discussed, but is not relevant to the current discussion). That external economies exist is not contentious, and Hirschman did not develop the notion that the private profitability of investments may fall short of their overall social desirability. It is an important element in his conceptualization of investment types, which he distinguishes between *induced* investments and *autonomous* investments. Indicating that the distinction between the two concepts might be blurred (for what investment decision is not induced in some way by supply and demand mechanisms?), he clarifies *induced* investments to be those that are net beneficiaries of external economies created by previous investments (Hirschman 1958: 70ff).

Hirschman further categorizes investment types by introducing the concepts of social overhead capital and directly productive activities (Hirschman 1958: 83f). This conceptual distinction is not made because of the nature of potential linkage effects. Rather, investment in social overhead capital is advocated not because of its final impact on aggregate output, but because of its role in permitting and inviting directly productive activities. In making this distinction, Hirschman primarily confines the role of government to the provision of social overhead capital, thus distancing himself from any allusions of a central planning approach. For North (1961: 4ff), it was the propensity of the more equitable northern regions of the United States to support investment in social overhead capital that enabled a broadening of the export base and drove the industrialization process, in contrast to the less equitable, narrow export focus of the south, which failed to industrialize in the first half of the 19<sup>th</sup> century.

The process of development thus becomes narrowed down to one of investment choices in the presence of constraints on the capacity of a society to make all necessary investments at one time. Ultimately, rather than a focus on what generates the greatest aggregate output in a static sense, focus in designing investment criteria

should be placed on what investments induce the greatest amount of further investment (Hirschman 1958: 76f). These further become linkages, where forward linkages result in investment in output-using facilities and backward linkages in input-supplying facilities (Hirschman 1981).

What Hirschman conceptualizes is an industrialization process, and the potential role of agriculture in stimulating widespread development is discounted almost entirely because of the “scarcity of linkage effects” in agriculture generally, and subsistence agriculture in particular (Hirschman 1958:109). This position is arguably not particularly remarkable given the formulation of the linkage concept (though in a latter period with a different agricultural setting it would come to be challenged), but the vehemence in which it was expressed has come to represent Hirschman’s view on agriculture:

...agriculture certainly stands convicted on the count of its lack of direct stimulus to the setting up of new activities through linkage effects: the superiority of manufacturing in this respect is crushing. This may yet be the most important reason militating against any complete specialization of underdeveloped countries in primary production. (Hirschman 1958: 109-110)

Apart from the obvious dismissal of agriculture, two points in the above quotation are of interest. Firstly, Hirschman clearly does not support an approach based on pure comparative advantage, whereby developing countries would focus on primary production. Secondly, he sees industrialization as a potential stimulus for agriculture (and not the other way around) whereby the provision of steady markets for agricultural goods through processing industries can stimulate increases in agricultural production and productivity.

Two further issues are important to the discussion of our dynamic framework. Firstly, Hirschman comments on foreign capital in development, indicating a shifting importance in the role played as the development process unfolds (Hirschman 1958: 38f). In the earliest stages of development, where Hirschman perceives capital availability in itself is not a restriction, foreign capital is an important conduit for abilities and skill which are in short supply, including the capitalist ‘growth mentality’ of reinvesting profits. In this regard, Hirschman shows an affinity to the description of the capitalist mentality described by Lewis (1954). In subsequent development phases, the importance of foreign capital shifts predominantly to the injection of capital itself, whereby capitalist entrepreneurship is no longer a constraint, but domestic savings are no longer sufficient to support the developmental needs of the economy. Secondly, as an extension of the theory of unbalanced growth, Hirschman concludes by discussing the inevitability of regional disparities in the growth process (Hirschman 1958: 183ff). Here, the capital constraints of the economy will ensure a natural congregation of investment in one or a small number of ‘growth points’ in the initial stages of development, and that these tendencies will inevitably be addressed either politically, through government

equalization programs, or economically, through the market mechanisms centering on production and transport costs.

Both in response to some of the criticisms of the original conceptualization of linkages, and in light of further research and the changing development landscape, the linkage concept evolved in the latter decades of the 20<sup>th</sup> century. In particular, and of direct importance to the current study, stimulating productivity increase through the use of improved agricultural technology enabled a renewed focus on the impact of increasing rural incomes for domestic industrialization, both in urban and rural non-farm settings. Simultaneously addressing the problems of rural poverty and an increasing urban politico-economic bias (Lipton 1977), where larger farmers categorized as urban because as major sellers of food to the urban populace they benefit from government support to the detriment of smallholders, this approach built on the balanced growth concept as advocated by Johnston and Mellor (1961). Indeed, Mellor himself was an important advocate of this approach, based on his own research of the impact of green revolution technologies on food grain productive capacity in India (Mellor 1976). Central to this approach, and in direct response to Hirschman's earlier critique, was the changing nature of the agricultural sector, which could no longer be assumed to be technologically stagnant whereby improved rural welfare must come at the expense of diverting capital from elsewhere in the economy:

...the increased efficiency of technologically advanced farming allows a large net increase in national income, which provides the dynamics of growth led by the agricultural sector. (Mellor 1976: 161-2)

There are two key aspects of what is essentially a consumption-driven approach. The first is that with an increasingly technologically advanced agriculture, Hirschman's assumption of the absence of backward linkages deriving from agriculture no longer holds, as inputs such as fertilizer and low-level, labor-saving farm machinery can be produced in the domestic economy. The second is that raising the income of rural households, the majority of which has traditionally gone to basic necessities, stimulates the development of domestic consumption-goods industries, both in urban and rural non-farm settings. Mellor (1976) goes on to advocate a series of policy interventions that can make the most of the observed relationships in the areas of distribution, focusing primarily on employment creation.

This concept was taken to its logical conclusion in the advocacy of a development strategy called agricultural demand-led industrialization (ADLI), coined by Adelman (1984) and later adopted by Vogel (1994). Adelman (1984) builds on the consumption linkages associated with improved agricultural efficiency and models and compares a situation in which the resources channeled towards an export-oriented development approach are alternatively channeled towards investing in



improved agricultural production. These open economy models suggest the primacy of an agricultural demand-led growth and development strategy over the medium run. Like all economic modeling, Adelman's results are contingent on the assumptions imposed on the model, which have an impact on the domestic multiplier effects (Mellor 1976) that are observed. A number of key points are worth noting. Firstly, small and medium sized famers are considered to be as productive, if not more productive, than large scale farmers, but produce in a more labor-intensive manner and tend towards the use of domestic, rather than imported, inputs and machinery. Secondly, small and medium sized farmers possess stronger consumption linkages to the domestic economy (rather than luxury imports), while also tending to invest heavily in education with resultant longer-term multiplier effects (Adelman 1984). These points are essentially a restatement of the early preference of Baldwin (1956) for smallholder agriculture over plantation agriculture from a development perspective. The prospects for such agricultural demand-led industrialization in the African context were assessed and believed to be lacking (Adelman and Vogel 1991), given the initial conceptualization's expectation of an existing (if nascent) industrial sector and the ability to instigate technologically advanced agricultural methods without risk to the type of ecologically fragile environments that exist in Sub-Saharan Africa.

The consumption linkage concept was not in fact new, and may be considered to have its intellectual authorship with the staple thesis (Watkins 1963). While the consumption linkage described by Watkins (1963) differs in its specific characteristics from that proposed by Mellor (1976) and adopted by the agricultural demand-led industrialists, it in effect operates on the same principle – by considering more closely the role of the income side of the production process.

### Stage 3: The Impact of Foreign Investment

The final stage of the model is to introduce foreign investment. While conceptualizing foreign investment as an exogenous 'shock' is consistent with classical economic approaches, this is not uncontested. In the context of settler agriculture, which is pertinent to the current study, Frankema et al. (2016) in particular are keen to emphasize the endogenous influences which guided the nature, successes and failures of settler agriculture.

It is acknowledged that in the context described, the introduction of foreign investment has the potential to have a displacing or stimulatory effect. While expectations based on previous theoretical and empirical assessment suggest the likelihood of the latter (see below), the framework itself is agnostic towards this. One such example of a displacement effect could be the initial introduction of settler

farming in Northern Rhodesia, which crowded out some African farmers that had previously supported some of the food requirements of nascent mining operations.

The analytical framework as described above enables the isolation of the interplay between the agricultural economy and the non-agricultural economy with respect to location and access to market opportunities. In this sense, infrastructure and changes in infrastructure endowments overtime can form an integral part of the study.

In the above conceptualization, it is taken as given that foreign investment will impact the operation of the agricultural economy, either positively or negatively. The mechanisms by which this may occur are multiple, and our expectations are drawn from theories of new economic geography and empirical research on the push and pull factors for foreign investments flows.

## **Agglomeration and Spillovers**

The new economic geography as presented from Krugman (1991) onwards has been criticized for the very same reasons that it has become so renowned. The simplicity of the economic modeling techniques adopted to explain certain spatial dynamics of the development process, which had been lost by the economic mainstream over a period of time, was, for some, in essence too simple and unable to adequately reflect the fundamental policy problems of regional development (Isserman 1996). While identifying the lack of economic modeling by Hirschman (and others) leading their followers outside the economic mainstream (Krugman 1994), Krugman explicitly calls on the linkages concept to informally justify the basis of his cumulative forces of manufacturing agglomeration (Krugman 1991).

With its focus on the endogenous agglomeration of manufacturing industries exhibiting increasing returns to scale, in specific contrast to an agriculture sector exhibiting constant returns to scale, the new economic geography might seem to offer little to the current discussion of foreign investment in agriculture. However, the underlying essence of the model, the reduction of transport costs and the mobility of factors of production, are important. The model seeks to determine where in a simplified dual sector economy as outlined above manufacturing will take place. For Krugman (1991), manufacturers will seek to locate close to main markets, where transport costs are reduced. At the same time, an additional force will lead manufacturers to locate near sources of input supply. Reminiscent of the linkages argument, Krugman suggests that it will be desirable to live and produce near a concentration of manufacturing because it is less expensive to buy and sell goods (Krugman 1991). There is a factor mobility argument at play in this model. Notwithstanding the assumption of constant returns in agriculture, that sector also possesses the significant need to utilize immobile land. While manufacturing is free to move, agriculture by definition is not. Krugman then concludes that the potential agglomeration forces will depend on the characteristics of the population itself –

where a significant proportion of the population continues to work in agriculture and transport costs are high, manufacturing will be dispersed. Where the counter situation exists, agglomeration forces will drive an urban consolidation. Krugman illustrates these forces with brief historical examples of the United States before concluding:

...when some index that takes into account transportation costs, economies of scale, and the share of nonagricultural goods in expenditure crosses a critical threshold, population will start to concentrate and regions to diverge; once started, this process will feed on itself. (Krugman 1991: 487)

In an attempt to reconcile almost two decades of work in the new economic geography field with consideration of the agricultural periphery, Grüber and Soci (2010) summarize the key literature as essentially describing a range of trade-offs that occur in the economic space, whereby:

- firms cluster in metropolitan areas where transport costs are low and markets for differentiated products are large;
- the broad product market and subsequent opportunities for specialized labor skills encourage migration by workers (who are also consumers);
- high transport and/or commuting costs and land use (factor immobility) foster the dispersion of economic activity; and
- the agglomerations which do occur result from cumulative process with impetus from both the demand and supply side.

Going further to develop the absence of agricultural focus in the broader new economic geography literature, Grüber and Soci (2010) touch on an increasing discussion on rural-urban interdependencies and the positive and negative affects these can have on the rural development problem. While not particularly relevant to the current discussion, a key additional point arising from this literature is the distinction made between unskilled and skilled labor with respect to factor mobility. While unskilled labor is considered generally immobile, skilled labor is not, exacerbating the potential agglomeration forces towards the growing center and potentially deepening the division between the immobile unskilled labor and land of the periphery and the mobile core.

Where does this leave the analysis of foreign investment in agriculture? As a result of mobility constraints and a focus on the spatial agglomeration of industry, agriculture is given little consideration in the new economic geography models except in the form of the 'other'. What must however be considered implicit in the structure of the model is that wherever able, agricultural producers are likely to locate as close as possible to population clusters, with a view to lowering the costs of transport for inputs and market goods, all other things being equal.

In the earliest formulations of the new economic geography, Krugman (1991) notes the body of literature that exists on knowledge spillovers, but given the

emphasis on transport costs, does not focus on it. The concept of knowledge spillovers certainly predates the new economic geography, and indeed the regional science which may be considered to have preceded it. First suggested by Marshall in the 1890s, it has been developed in competing directions in the century since. While it is not particularly important for the current discussion to describe in detail the function of various models of knowledge spillover, particularly since the majority of work in this area focuses on the development and growth of urban (city) centers, it is appropriate to acknowledge that they exist and what they suggest about the spillover process. The following summary of competing theories is taken primarily from Glaeser et al (1992), in which the authors discuss the theories with respect to whether dynamic externalities in the form of knowledge spillovers arise from within or across industries, and whether they result from local competition or despite a lack of it. These factors ultimately determine the dynamics of firms' attempts to internalize these spillovers.

Glaeser et al (1992) categorize three major theorists in the same mould. The Marshall-Arrow-Romer externality concerns spillovers between firms in the same industry, but see the benefits of which lessened by less than optimal investment by innovators because of the risk of imitation. Glaeser et al (1992) liken this intra-industry spillover to the theories of Porter (1990), except rather than local competition lessening potential investment, Porter sees the acceleration of imitation and improvement of the original concept as an important aspect of the dynamic growth process. Thus, while individual profits are lessened, these are countered and outweighed by a concurrent pressure to innovate. Finally, these two theories are contrasted with the model of Jacobs (1969), in which again local competition spurs innovation, but where the spillovers occur primarily between and because of the presence of diversified, though potentially complementary, industries. The differing approaches by these three competing theories lead to differing conclusions with regard to the benefits or otherwise of specialization or diversification in a given setting (Glaeser et al 1992). For the current discussion, that knowledge spillovers exist and can be enhanced by proximity is, in effect, sufficient.

Before leaving this field of proximity studies, it is relevant to consider the approach of Crafts and Venables (2001) in applying the above concepts – linkages, skilled labor clustering and technological externalities - to demonstrate that geography also matters at the more aggregate level. Here, the authors consider the importance of international trade costs as an extension of Krugman's earlier idea of interregional transport costs to consider the history of globalization. At what are described as intermediate levels of trade costs, the forces of agglomeration are high, attracting manufacturing and its associated backwards and forwards linkages to create a center of economic enterprise. The subsequent concentration of productive factors will in turn lead to changes in cost structures until a 'spillover' point, at which production at a location outside the center becomes economically viable. The agglomeration forces and subsequent spillover will, according to the theory, play

themselves out again in the new center. It should be noted that such economic development does not give rise to the steady convergence of economies as proposed by neoclassical theory, nor does it reflect the economic divergence theories of endogenous growth theory. Rather, the agglomeration forces provide scope for the relatively rapid advance of a select few to join the 'center' of rich economies (Crafts and Venables 2001). The authors illustrate their theory using historic examples of United States' catch up to Britain and the East Asian Miracle of the late 20<sup>th</sup> century. Importantly, Crafts and Venables do not suggest that spatial relations can describe the entire story of economic development – institutional arrangements remain central – but nor can it be ignored, even in a modern world of advanced information technology. It might be anticipated that in a world of increasingly mobile capital, this idea will have increasing relevance.

## **Foreign Direct Investment: Empirics and Industry**

Following the rise of the new economic geography and an increase in the absolute and relative value of foreign direct investment from the beginning of international financial deregulation in the 1970s onwards, a large body of literature has focused on investigating the impacts of such investment on host country economies. Primarily empirical in nature, at both the macro and microeconomic level, these studies focus almost exclusively on the industrial (manufacturing) sector, where the majority of such investment has historically been targeted. With a small number of exceptions, there is a consensus that theory is principally lacking in this field and that the differing methodologies and data types adopted in empirical studies result in an inability to draw general conclusions. Moran, Graham and Blomström (2005) suggest there are three main schools of thought with respect to foreign direct investment which are embodied in the literature:

- *A mainstream approach* – where more is by definition better and linked to the 'Washington Consensus' view of world trade;
- *A skeptical approach* – where the benefits of FDI are questioned and its differences to other investment debated; and
- *A dirigist approach* – where the importance of Government in directing FDI is upheld.

Given the wide empirical literature, with its concomitant narrow foci and different methodologies, heavy reliance will be placed on two recent comparative and categorical works that have sought to draw together the differing strands of foreign direct investment literature. Despite different approaches, the works of Crespo and Fontoura (2007) and Smeets (2008) together highlight the most important themes in the literature and form a strong basis for drawing out those aspects relevant to the current discussion.

Grounded in the concepts discussed in the section above, the most dominant feature of the literature on foreign direct investment is the identification and analysis of knowledge spillovers, which take practical shape in the form of technological diffusion. Two critical definitional issues thus arise; what is a knowledge spillover and what form does the relevant technology take. In responding to the first issue, Smeets (2008) is careful to distinguish between knowledge spillovers and knowledge diffusion, the first of which relates to an uncompensated externality while the second is an intended or purposeful diffusion of knowledge from one firm to another. In making this distinction, Smeets (2008) suggests that much of the empirical work in this area fails to appropriately distinguish between these two different phenomena, potentially skewing the existing knowledge base around knowledge spillovers. As to the implications of such confusion, he concludes that “[m]istakenly assigning the beneficial productivity effects of FDI to knowledge spillovers may convince government of many developing countries to undertake costly and wasteful FDI policies” (Smeets 2008: 131).

Smeets (2008) looks to focus his review on knowledge spillovers, intentionally distinguishing these from pecuniary spillovers (resulting from quality gains not reflected in prices) and competition effects (resulting from the market entry of a foreign firm). Crespo and Fontoura (2007), meanwhile, adopt a broader channels and determinants approach to their analysis. In covering much of the same territory as Smeets (2008), but extending it by not restricting discussion to knowledge spillovers, the authors identifying five separate channels through which foreign direct investment can enable technological diffusion and five determinant factors which can influence the likelihood or otherwise of such diffusion. Many of these channels and determinants can logically have detrimental as well as positive impacts upon host country economies – a fact borne out in empirical evidence the authors identify. The five channels of diffusion described by Crespo and Fontoura (2007), the first three of which are also highlighted by Smeets (2008), are:

- *demonstration effects* – the introduction of a technology that may have otherwise been too expensive or risky for local producers;
- *labor mobility* – the potential for local workers with experience with, or training from, foreign companies to take improved productivity to local producers;
- *supply linkages* – the backward and forward relationships created by foreign companies with local input suppliers or customers of intermediate inputs produced;
- *export capacity* – similar to a demonstration effect, local producers may follow export-oriented foreign companies by imitating or collaborating on export processes (often too costly for local producers to establish);

- *competition effect* – while restricting the market power of local producers, entry by foreign companies may stimulate increased efficiency in existing resources use or alternatively stimulate adoption of new technologies.

It is clear that a number of these elements are overlapping, while at the same time building upon earlier theoretical work described in the sections above. In this field of study, the supply linkages concept draws heavily upon the theoretical modeling work of Rodríguez-Clare (1996), itself taking Hirschman's linkages approach as a point of departure. This notion also links to the debate as to whether knowledge spillovers are more likely to occur within or between industries (see Görg and Greenaway 2004 and Kugler 2006). Here the empirical evidence is inconclusive, with little support for horizontal (intra-industry) productivity spillovers and stronger support for vertical (inter-industry) productivity spillovers, which Kneller and Pisu (2007) suggests is likely to result from foreign firms being more cautious to avoid leakage to local competitors. Similarly, the demonstration, competition and labor mobility effects align closely with those aspects arising from the new economic geography. The export capacity channel is not prioritized by Crespo and Fontoura (2007), but has potentially important implications for the current discussion and will be dealt with further below.

The potential for each of these five channels to result in foreign direct investment spillovers are contingent upon a range of context specific issues. These 'determinant factors' for Crespo and Fontoura (2007) or 'mediating factors' for Smeets (2008), affect the potential strength or weakness of the channels' operation. Clearly the most important factor and that most widely discussed in the literature is the concept of *absorptive capacity* – the ability for local producers to actually internalize the potential benefits arising from proximity to foreign producers (which by definition are assumed to display greater productivity). Inherent in this concept is the degree of backwardness or the technological gap between the foreign and local producers. The relation between this gap and the potential for spillovers is not perceived to be linear, as might be conceived by traditional backwardness and convergence theses. Rather, empirical evidence has suggested that too wide a gap restricts the ability of local firms to absorb the new technology, while too small a gap will mean foreign companies will transmit few benefits to local producers. The most commonly adopted measure of technological gap is inter-firm productivity comparisons.

Smeets (2008) highlights absorptive capacity and spatial proximity as the two key mediating factors for the operation of foreign direct investment channels with respect to knowledge spillovers. For Crespo and Fontoura (2007), spatial proximity plays a lesser role, and comes under the concept of *regional effects*. Again building heavily on the new economic geography, it is noted that labor movement and demonstration effects are likely to have geographic limitations. The empirical evidence to this end presents no clear general finding, but it is interesting to note the suggestion that regional agglomeration effects are impacted by the likely self-

selection of foreign investors into regions displaying already high levels of productivity (Monastiriotis and Jordaan 2010). The final three determinant factors outlined by Crespo and Fontoura (2007) are:

- *domestic firm characteristics* – here the size and market-orientation of firms is considered to be integral to potential spillovers. Whether the local producer is already exposed to foreign technologies through the export market and whether the local producer is of a sufficient scale to benefit from introduced technologies is important;
- *FDI characteristics* – distance from home country (as a proxy for transport costs), cultural and linguistic dimensions, the degree of foreign ownership in a venture, and the mode of entry into the market (for example through greenfield investment or mergers and acquisition) are considered to be relevant, and have each been considered empirically with differing results;
- *other factors* – the authors list here a variety of lesser studied areas including the trade policy environment faced by foreign companies and their aim in production, the intellectual property rights regime in place (also covered by Smeets (2008)), the motivation for the foreign investment (whether it is technology-exploiting or technology-sourcing) and how long the foreign company has been operating in the local environment.

For the current discussion, the characteristics of the foreign direct investment itself are of particular note, including the degree of foreign ownership and the mode of entry into the market. Cultural and linguistic dimensions may also be relevant to consider in developing countries with previous colonial ties, particularly those which have previously experienced a high degree of colonial agricultural production. Linguistic relations have been previously investigated at length to positive effect within the Chinese-speaking communities of South-East Asia and Spanish investment in Latin America, while colonial-hegemonic relations have been less thoroughly explored. One study of foreign investment in Vietnam in the years following its opening up suggested a significant French influence despite the numerous decades since French colonial administration (Makino and Tsang 2011).

Also of particular relevance to the current discussion is the export capacity channel, listed but not elaborated upon by Crespo and Fontoura (2007). Kneller and Pisu (2007) suggest a reason for this lack of elaboration – the fact that this channel has been significantly neglected relative to easier to measure productivity impacts. Adopting a productivity-export dichotomy which differs from the conceptualization of Crespo and Fontoura (2007), the latter authors consider export spillovers broadly, indicating a matrix of potential means (the type of ‘determinant factors’ addressed above) by which foreign firms can impact the export decisions of local firms. The idea of a spillover in this context comes primarily from the flow of information



(information externalities) which can lower the sunk costs of exporting for local firms. As indicated above, the concept overlaps with other previously mentioned:

Export spillovers may take place if there is a transfer of knowledge about foreign markets to domestic firms. From the supply side this may lower sunk costs so that the marginal firm finds it profitable to start exporting to increase their share of production sold overseas by existing exporters. Or from the demand side it may increase awareness and demand for... goods in overseas markets pulling firms into exporting. Like productivity spillovers, these competition and information export spillovers may be intra-industry or inter-industry in nature and may depend on the geographic proximity between domestic firms and foreign affiliates. (Kneller and Pisu 2007: 110)

Logically, and again overlapping with the *FDI characteristics* determinant above, the nature and extent of potential export spillovers will depend significantly on the nature of the foreign firm – export spillovers are likely to be greater from (but not necessarily restricted to) those foreign firms which export rather than have a host-market orientation (Kneller and Pisu 2007).

This brief consideration of the extant literature on foreign direct investment demonstrates the vast array of differing channels and factors which mediate the benefits or otherwise of foreign direct investment in host country economies. Despite the lack of generalized empirical conclusions and its overwhelming focus on manufacturing sectors, often in the developed world, a number of aspects seem pertinent in considering a conceptual framework for foreign investment in agriculture, the focus of the current study, which will be elaborated on below.

## The Impact of Foreign Investment in Agriculture

Based on the consideration of the various schools of thought on development outlined above, a preliminary attempt will be made to conceptualize the role of foreign investment in agriculture within a broader development process. In doing so, it will be the aim to elaborate upon the potential micro- and macro-level benefits for such investment in a theoretical manner.

Much of the leading debate within the development profession about the potential benefits from foreign investment rests on an expectation of improving agricultural yields (reducing the yield gap) consistent with tapping into a perceived vast untapped proportion of arable land in developing countries (World Bank 2011). The logic is sound: financially-sound investors able and willing to introduce technology and farming methods to underutilized agricultural land can only aid the overall contribution of agriculture to domestic value-added. But is this a valid expectation? The conclusion from considering the theories above would suggest not. In general,

foreigner investors have the financial capacity to invest in prime agricultural areas. Over and above a likely capital advantage in land markets, particularly when compared to agricultural smallholders in developing countries, foreign investors also lack the traditional links to specific areas and crop varieties possessed by domestic agents. Consistent with the approach of the new economic geography, yet in a situation where the capital held by the (foreign) agricultural agent is mobile, one would expect that foreign investors in agriculture would seek to invest as close as possible to markets and input suppliers (be they international or domestic). This would seem to favor a location in the vicinity of major urban centers, simultaneously tending to be those that possess the largest investment in domestic and international transport infrastructure.

Crafts and Venables (2001) argue that the international transmission of productive capacity is based on lower trade (including transport) costs. This view matches with the suggested preferences of foreign agricultural investors outlined directly above. Of particular interest here is a host country government's ability to extract fiscal linkages via direct taxation. As noted by Hirschman, such fiscal linkages create the least distortion in situations where the taxed production is of the enclave variety – primary production such as mining and plantation agriculture with little impact on the broader society. However, the expected motivations of potential foreign investors regarding low production costs acts against fiscal linkage opportunities. In today's developing environment, host country governments are often focused in the opposite direction, providing low taxation rates or extended tax holidays in order to attract initial investments. In addition to such 'reverse' fiscal linkages, host country governments are also obliged to provide appropriate social overhead capital – the competition between Hirschman's different 'candidate' areas above. It is noted that such investment benefits both domestic and foreign investors, and is likely to be undertaken wherever possible and efficient, even in the absence of foreign investment. However, in situations in which foreign investors do not contribute to fiscal resources (or contribute at a below optimal rate), they will essentially be in a position to internalize the benefits of social overhead capital provision by host country governments.

With the fiscal linkage possibilities arguably limited, it is appropriate to consider the consumption linkage benefits of foreign investment. *Direct* consumption linkage benefits from such investment will inevitably depend on the employment creation associated with the investment; the capital intensity of the production and the proportion of local to 'imported' labor adopted (where it is assumed that at least a proportion of imported labor costs will be exported from the country). The more difficult to assess *indirect* consumption benefits can be considered to be of two forms: consumption from incomes generated via employment in backward and forward linkage production; and the income generated from productivity gains associated with the various spillovers into local production resulting from the foreign investment (more on the latter below).

With a modern agriculture involving increasingly technical inputs such as fertilizers, farm machinery and modified seed varieties, the potential for backward linkages is broader than what might have traditionally been expected, especially in more traditional cultivation areas of the developing world. Forward linkage possibilities will be dependent on the nature of the crops under production, and those crops' needs and ability to be processed near the source. Additional forward linkages associated with the side-products or processes of any agro-progressing may also be relevant to such a consideration.

More generally, foreign investment is by definition an outside linkage in the Hirschman sense, as it comes from without the existing economic structure. This has the inevitable and immediate benefit of injecting additional capital and productive capacity into the economy, Hirschman's new economic agents (Hirschman 1981). The overall and long-running impact of the investment will of course be dependent on complementarities with the existing economy – where the investment generates substitute production without competitive productivity benefits, or displaces previous production and employment without compensatory effects, the longer term impact is likely to be negative.

The concept and theory of spillovers has been discussed. In considering what spillovers might result from foreign investment in agriculture, it is reasonable to categorize these in two forms: *knowledge spillovers*, which may result from exposure to new management techniques, work process and input potentialities (via demonstration effects, labor mobility or competition effects); and *access spillovers*, which may result from improved local infrastructure, proximity to improved input suppliers, and better market through possible contracting arrangements. This latter has the further ability to result in direct benefits to smallholders introduced to contract farming opportunities, which have the potential to see external supervision of quality improvement and credit and supply access, particularly with respect to the increasing quality controls required by the 'supermarket-ization' of much food production in developing countries (World Bank 2007).

Of the separate elements of the knowledge spillover concept, the demonstration effect may be of particular relevance in the developing world context, specifically with respect to the introduction of new agricultural techniques. Hirschman (1958) clearly posits the lack of entrepreneurship as a key to the development problem, citing among others problems the lack of acquired entrepreneurial ability and lack of capital on which to act on entrepreneurial opportunities. Hausmann and Rodrik (2003) address part of this concern in the concept of economic cost self-discovery. Here the authors identify a seemingly perpetual problem in the developing world of under-investment in new activities. Such under-investment results, according to Hausmann and Rodrik (2003), from the fact that the costs of operating in the new activity are unknown and that the first mover bears a disproportionate risk in establishing a new enterprise. Where the investment is successful, the first mover will be imitated very quickly, and the benefits of the investment will be spread

throughout the economy. Where the investment is unsuccessful, the first mover pays the full cost of failure. In both circumstances, the first mover provides a valuable externality in the form of informational spillover to the rest of the economy. What this suggests is that developing countries will often generate too little investment in new activities, because of the potential costs involved (Hausmann and Rodrik 2003). In this circumstance, foreign investment can play an important role in overcoming this ‘entrepreneurial trap’.

In summarizing the key aspects of the above theoretical and empirical works, one expects a situation in which foreign investors in agriculture will:

- seek to locate as close as possible to markets (both domestic and foreign);
- seek locations with the best social overhead capital to facilitate this;
- as a corollary, will locate where transport and production costs (including taxation costs) are low; and
- self-select into regions of higher productivity, in the case of agriculture this being closely linked to land quality.

It is therefore reasonable to assume that foreign investment in agriculture is unlikely to be in unutilized or remote land far from population centers, unless that foreign investment brings with it some form of technology that overcomes low land productivity or transport costs respectively. Concurrently, and depending on the nature of the foreign investment itself, local agricultural and/or rural communities may expect to gain through:

- *knowledge spillovers* (demonstration effects, labor mobility, competition effects)
- *access spillovers* (export capacity, supply opportunities, improved infrastructure, production-chain possibilities)
- *employment opportunities* (directly or via associated production and consumption linkages).

Figure 2.2 displays these impact channels for local agriculture, and the key factors through which such impacts are mediated. These mediating factors are considered in more detail below.

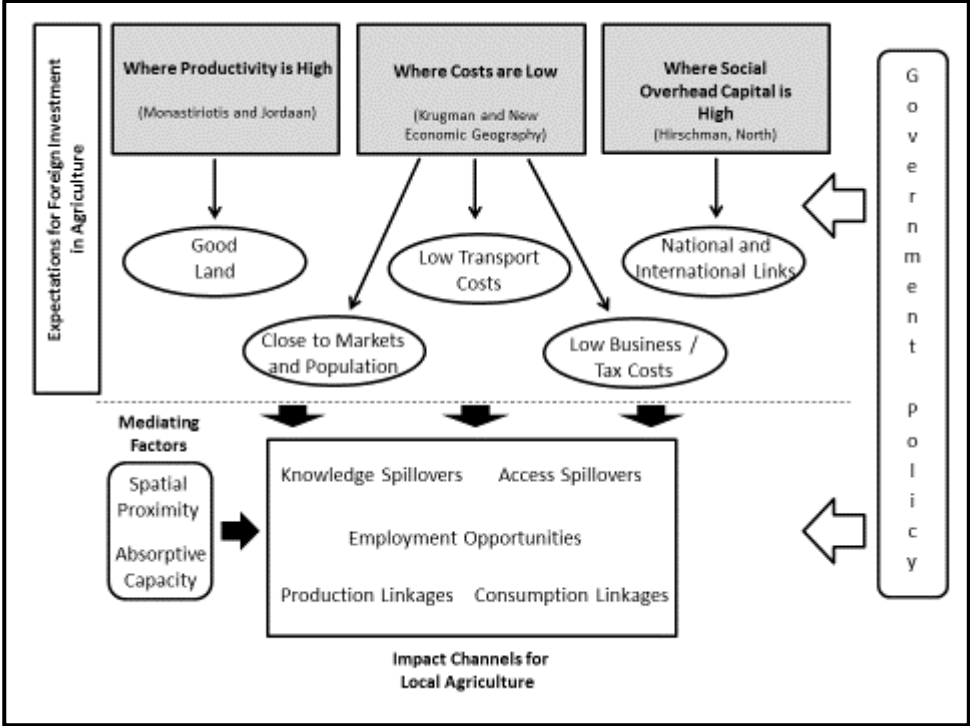


Figure 2.2: Factors in Spillover and Linkage Creation, as envisaged by author

**Mediating Factors: Absorptive Capacity - Does Farm Size Matter?**

With respect to the current study, it is important to be conscious of the ability of farming enterprises to benefit through the type of channels identified in Figure 2.2. This mirrors the concept of *absorptive capacity*, and in particular whether a degree of scale is required to benefit from the spillover effects of foreign investment.

Already noted in the earlier discussion is the traditionally accepted development paradigm that in terms of land productivity, smaller farms are more efficient than larger farms (Baldwin 1956, Mellor 1976, Adelman 1984). This efficiency was acknowledged by the rational peasant motif of Schultz (1964), while Hazell (2005) lists the additional benefits of the creation of productive employment (often family based), the reduction in rural poverty and food insecurity, the better linkages to non-farm rural economies and the potential to contain rural-urban migration as other key developmental benefits. The drive towards supporting smallholder agriculture on the basis of this inverse productivity relationship has been evident for a number of decades in mainstream development thinking, but has more recently been called into question.

Collier and Dercon (2009) query the methodology used to derive the original proposition, suggesting that the concepts of small, medium and large farms adopted do not reflect the modern reality, and that assumptions regarding the inefficiencies of large scale farming operations have been extrapolated from results relating to relatively small farms (for example, five hectares would be considered large in many studies). To this end, it is of note that farms considered small in the context of the Asian green revolution, are what would today be considered medium sized farms in many developing countries (Otsuka et al 2013).

There are also concerns regarding the emphasis previously placed on labor management/control costs for non-family labor in larger enterprises, which while seen to hold in the historic setting (see Deininger and Binswanger (1995) in the eastern and southern African context), may not hold in a modern context of significantly increased mechanization potential (Collier and Dercon 2009). Further elements identified as benefiting from increased scale include access to credit, and the ability to internalize costs relating to knowledge transfer and adoption risks of new technology (for example new seed varieties).

Meanwhile, changes in the underlying development context, particularly the rise of supermarkets demanding standardization in product quality and increasingly integrated logistics chains for storage, marketing and transport, arguably favor those enterprises of larger scale (Collier and Dercon 2009). In this context, the future success of smallholders is likely to require ongoing government support efforts (similar to those of the past), including credit facilities, risk management aids, centralized marketing efforts and ongoing research and extension services (Hazell 2005). In such a context, the potential benefits of foreign investment seem likely to fall first and foremost to those farming enterprises already of larger scale and degree of commercialization, something which will be explored further throughout the course of this study.

Finally, context is also an important influence on how society best structures its agricultural sector. In densely populated countries, subsistence needs of the population may drive towards a smaller average productive unit, compared to land surplus countries, such as Zambia, where pressure on disaggregation may be lesser (Otsuka et al 2013).

## **Mediating Factors: Spatial Proximity - Infrastructure and Location**

Any discussion of foreign investment in agriculture presupposes a consideration of the necessary infrastructure, be that transport services to enable the extension of productive land and access to markets, irrigation services for the intensification of production, and more socio-economic issues relating to water, energy and communications utilities. We have already discussed the concept of social overhead capital as a stimulus for private investments. From 1994 onwards, when the World

Bank titled its World Development Report *Infrastructure for Development* (World Bank 1994), a primarily policy-oriented literature has centered on the role of public and private infrastructure provision in filling the gaps necessary for economic development to succeed in developing countries. More recently, the African ‘infrastructure gap’ has been considered at some length as an ongoing hindrance to a successful and sustainable development process (see African Development Bank 2010 among others).

Infrastructure has until recent decades played a less significant role in the history of economic theory (Prud’Homme 2005), despite the fact that roads, railways and utilities continued to be built by governments worldwide. Rather, the focus was usually on the factors of production – labor and an ‘indivisible’ capital – or on the provision of public goods, again incorporating infrastructure, but only that provided by government. In the context of the current study, infrastructure as social overhead capital is one of the key cross-overs between the linkage theories of Hirschman and the transaction costs approach of the new economic geography, and remains a central factor in determining the likelihood, success and positive integration of foreign investment in agriculture into local economies. To this end, Antle (1983) demonstrated that infrastructure provision formed an important constraint on agricultural productivity in a cross country regression involving 66 countries, 47 of which were less developed countries at the time of publication.

More recently, Gollin and Rogerson (2014) utilized computable general equilibrium models to assess (within a closed economy) the interaction of a central manufacturing (urban) sector with two regional sectors – a near agriculture sector and a far agriculture sector. The authors find that at low levels of development, it is improvement in agricultural productivity and transport productivity that largely drive structural transformation. This finding has important implications for the current study, supporting both the adoption of the agricultural transformation as the basis for sustained, long-run economic development and the decision to focus on the role of transport infrastructure and spatial proximity to agricultural development.

The modelling had a number of other important results relevant to policy makers and the current study. Importantly, improvements in infrastructure (that is, the reduction of transport costs) had significant effects on the proportion of people living in agriculture areas compared to the urban setting. Of significance in these findings was that the majority of population shift comes from migration from far agriculture to urban sector (that is, the more productive and better connected near agriculture remains relatively stable). This supports our a priori expectation that agriculture based in close proximity to industrial structures and urban centers has greater potential for commercialization and access to markets. Another important outcome of this modelling is that changes in transport costs are likely to have a greater impact on labor allocation in agriculture (that is shifts from agriculture to the more productive manufacturing sector) than changes in total factor productivity within the manufacturing sector itself.

Finally, the Gollin and Rogerson (2014) results suggest that the returns on investment are greater when these are focussed on improving/enlarging the near agriculture area, rather than investing in even, across the board changes. These findings have echoes in the channeling of limited government resources into development corridors (from which the benefits of economic growth are expected to trickle down), the approach of ‘picking winners’ where resources are invested in those businesses or industries which have already demonstrated economic growth potential, and even in the anticipated regional disparities expected within the doctrine of unbalanced growth. This concept will be explored further throughout the course of this study.

In the context of railways, which have already been identified as a key element of Zambia’s economic history, their importance to economic development has been a point of empirical study since the seminal work of Fogel (1964) in assessing their role in reducing transportation costs in the rapidly industrializing United States in the 19<sup>th</sup> century. More recent work has sought to untangle the causal element of railway construction for economic growth, considering whether railway construction stimulated development or was a response to it by connecting already thriving centers, often integrating the use of spatial data available within geographic information systems that has enabled a deeper analysis of the impacts of such infrastructure investment.

Berger and Enflo (2015) demonstrate a positive effect from the development of railways on economic development in industrializing Sweden, but also indicate that the patterns that emerged from initial investments persisted in relative terms through subsequent waves of railway investment, creating a note of caution for those who believe new railways investment is a panacea for developing countries. Importantly in the context of the current study, Atack and Margo (2011) provide evidence that railway growth in the United States stimulated agricultural improvements, while Donaldson (2018) demonstrates the positive impacts in the colonial context, where railways were responsible for the reduction of transaction costs in India. In Africa, evidence suggests that it was the route of the railways that precipitated the growth of economic centers, which persist today (Jedwab and Moradi 2016, Jedwab et al. 2015).

The empirical studies identified, while demonstrating the positive economic benefits that railways can provide in supporting the agglomeration effects of the new economic geography, also confirm the corollary of this process, which is of a deindustrialization of the peripheral areas that miss out on the transportation revolution (Berger and Enflo 2015, Donaldson 2018).



## Conclusion – Operationalizing the Framework

Above, we have developed an analytical framework bridging a number of streams of economics and development studies literature, with particular reference to the African context in which this study takes place, in order to support an assessment of the role of foreign investment in the development of Zambia agriculture, which is the central focus of Research Question 1. Using hypotheses based on the framework, and specifically the channels identified in Figure 2.2, we will assess the actions of key actors and their responses to changes in policy and economic settings across the period from 1924 to 2016. In doing so, we will consider the extent to which foreign investments provided opportunities for local actors to increase agricultural commercialization and the extent to which these opportunities have been impacted by Mediating Factors, and thereby seek to address Research Question 2 by assessing whether *Zambian* experience accords with theoretical orthodoxy.

Taking from the analytical framework, our theoretical expectations with respect to foreign investment in agriculture are as follows:

- wherever possible, agricultural investors of all types will seek to locate as close as possible to major markets and/or infrastructure that enables ready access to those markets
- the introduction of foreign investment in agriculture from more technically advanced countries presents opportunities for *knowledge spillovers* to occur
- foreign investment in agriculture can create *access spillovers* for local actors, through access to improved market and physical infrastructure, as well as supply and contracting opportunities
- foreign investment in agriculture, depending on its form, creates *employment opportunities* for local actors
- that the prevailing *Government policy* environment in force has an impact on the extent to which to the above channels operate and the benefits that can be derived by local agricultural actors.

In the 20<sup>th</sup> century colonial setting of Northern Rhodesia, we can hypothesize that settler agriculture will concentrate around critical infrastructure (principally rail and road) to reduce transport costs and in the vicinity of population centers, which would form major internal markets. Where export agriculture is an option, locating near major infrastructure is essential for the transport of commodities, all the more so in a landlocked territory such as Northern Rhodesia. Given an anticipated technological differential between settlers and local farmers (notwithstanding an initial agro-climatic advantage for indigenous producers), we expect to see opportunities for local actors to learn from the technology and methods adopted by foreign investors, and to benefit from any new markets for agricultural produce that the foreign investors generate. We also anticipate, particularly in a colonial context,

that settler agriculture is likely to be labor intensive, creating employment opportunities for local actors. Chapter 5 will assess the available evidence to test these hypotheses and draw conclusions about the role of foreign investment in agricultural development in the colonial era.

In the post-independence era of the First and Second Republics (from 1965 to 1991), where Zambia followed a similar path to many African governments in supporting a high degree of state intervention in the economy, we can hypothesize that the opportunities for foreign investment to impact the agricultural sector would be limited and heavily influenced by prevailing policy settings. Chapter 6 will assess the available evidence to test this hypothesis and draw conclusions about agricultural development in the early post-independence era.

In the late 20th and early 21<sup>st</sup> centuries, we can hypothesize that while displaying a continued concentration around critical infrastructure and major markets, foreign investment in Zambian agriculture should be more widely distributed than in previous eras. Improvements in road transport (both in terms of all-weather roads and vehicular quality) should result in both increased opportunities for the regional marketing of agricultural produce and greater accessibility of markets for more dispersed areas. In addition, we expect that the financial capacity of foreign investors has the potential, either through direct investment or in partnership with government, to overcome existing infrastructure barriers, bringing previously isolated areas into the market. This said, those investors focussing on export production are likely, in the modern age, to favour locations close to international air transport facilities. We can also hypothesize that foreign capital has the potential to aid new forms of export production in Zambian agriculture, aided by international air freight that opens overseas markets to Zambian horticultural products that would otherwise be restricted to regional and local markets. It would also be expected that foreign investors would seek to focus on capital-intensive production processes, either in high input, high value crops or agro-processing. These production decisions will ultimately determine the nature and extent of spillover and employment opportunities. Chapter 7 will assess the available evidence to test these hypotheses and draw conclusions about the modern impact of foreign investment in Zambian agriculture.

Further, Chapter 7 will see the origin of modern foreign investment in the agriculture sector analysed with a view to determining whether patterns of investment are consistent across the Zambian economy more generally, or whether these diverge. Specifically, this analysis will enable us to determine whether there exists a colonial heritage to the patterns of current foreign investment in Zambian agriculture, and in doing so respond directly to Research Question 3. As part of this analysis, the recent foreign investment experiences of Uganda and Mozambique will be considered by way of comparison, with a view to assessing whether the Zambian findings are unique or if the patterns that are identified may have a broader application in developing Africa.

In the next chapter (Chapter 3), the data used for the study and how this will be assessed in connection to the framework will be articulated. Following a brief historical introduction in Chapter 4, the framework will be operationalized for the colonial (1924-64, Chapter 5) and modern democracy periods (1992-2016, Chapter 7) in Zambia, and its elements assessed in reflection for the post-independence (1965-1991, Chapter 6) during which time foreign investment was limited. In concluding, Chapter 8 will draw the outcomes of the empirical studies together and identify the implications of these for future agricultural development in Zambia and potential lessons for developing countries more broadly.



# 3. Methodology and Data

## Introduction

A wide variety of material is utilized as we seek to consider the role of foreign investment in agriculture throughout Zambian history with reference to the analytical framework outlined in Chapter 2. As appropriate, the questions posed by the study have driven the sources used and the methodology deployed, rather than the availability of data defining what questions may be considered. We ground our analysis of available material in economic theory and general hypotheses, and do not aim for statistical significance or strict tests of causality, as the information available does not lend itself to such treatments. The absence of econometric analysis is not an ideological decision, but rather a practical one.

While the study does not present new and unique data generated by the author, it does use data in ways not previously explored. All information considered and later manipulated is available to any member of the public, though the complexities of accessing it and the intricacies of compilation across multiple sources provide a degree of succor when assessing the research against the high standards expected by the discipline of economic history. To this end, in the *capta/data* dichotomy promoted by McCloskey (2014), there is comfort that the sources utilized and the ways in which this occurs makes the data analysis in the study unique; that the information has been seized, and not freely given.

This chapter outlines the methodology adopted for the study and describes in some detail the sources and nature of the data to be analyzed. In this respect, the data sources for the colonial period are likely to be commonly understood, and their nature and the potential pitfalls in their use known to scholars of the colonial era, and those of British Africa in particular. The data which forms the basis of our study of the modern period is less widely known and for this reason more time is spent on describing it and providing the necessary caveats that come with its use in the ways adopted by the study. The chapter continues with a brief note on measurement scales and how these are utilized in the study, before concluding with an outline of how the analytical framework detailed in Chapter 2 will be operationalized in the context of the data sources described.

# Methodology

The study employs an *analytical narrative*, calling on both quantitative and qualitative sources. We deploy a narrative approach to detail events and infer those relations that can be garnered from available sources, doing so within the context of a theory-derived analytical framework (Chapter 2). Thus, the narrative content chosen is not a description of all that is known about the development of Zambian agriculture, but rather that driven by the requirements of the analytical framework and our research questions. In this way, though with more modest ambitions, the study shares the aim of Bates et al. (1998, 10) to use the analytical narrative form to elicit “explicit and formal lines of reasoning” which structure the descriptive method and provide explanatory support to the conclusions.

There are two key elements to the analytical approach adopted. The first seeks to take account of long-term processes by comparing two historical time periods; the second seeks to provide depth to the analysis of modern investment patterns in Zambia by drawing on similar experiences in two other Sub-Saharan African countries. With similar motivations, the study resembles an example of *comparative historical analysis* in the manner articulated by Mahoney and Rueschemeyer (2003). These authors stipulate three specific factors that delimit comparative historical analysis from the broader field of social science research: a fundamental concern with identifying and explaining causal mechanisms, an emphasis on assessing processes and change over time, and the use of systematic and contextualized comparisons of similar or divergent cases (Mahoney and Rueschemeyer 2003).

## Historical Comparison

In a comparative manner, the study emphasizes the historical analysis of the impact of a particular phenomenon (foreign investment in agriculture) within a single case (Northern Rhodesia/Zambia) across three historic time periods (1924-1964, 1965-1991 and 1992-2016). In doing so, it seeks to identify changes and continuities over time, and make detailed and informed inferences regarding the impacts of these on the Zambian agricultural sector.

While focusing on continuity and change in history, it is important to acknowledge that Zambian history did not commence with the beginning of Colonial Office administration in 1924. In the same way that the research question determines the source material relevant to the study, so does it determine the relevant historical periods. For while there existed some settler agriculture prior to 1924, this was relatively limited and sparsely documented. For context, a brief background for the period prior to Colonial Office administration is provided in Chapter 4.

Furthermore, the limited application of an analytical framework assessing foreign investment in agriculture to the period from 1965-1991 must be acknowledged. The politico-economic attitudes that prevailed in post-independence Zambia, and particularly during the second republic's one party state from 1973-1991, while accepting of existing European farmers as necessary for maintaining food security and low urban food prices in the immediate post-independence period, did not actively encourage foreign investment in agriculture. Such encouragement would have contradicted the widespread process of 'Zambianisation' within the economy, which saw the full or partial nationalization of major modes of production. Notwithstanding this, government policy did not actively prohibit foreign investment in agriculture, in a similar manner to other industries.

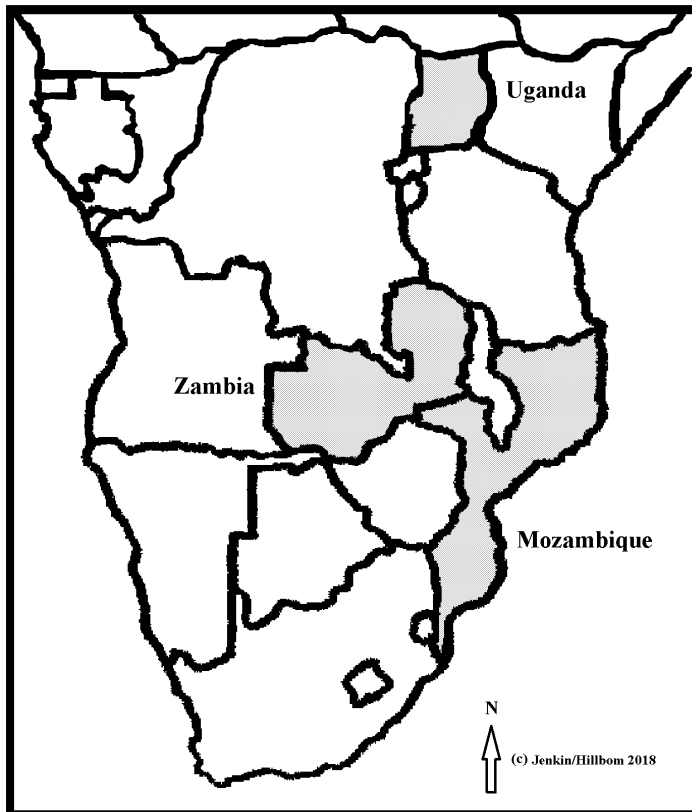
## **Regional Comparison**

As indicated in Chapter 2, the role of foreign investment in the context of developing countries has been the focus of significant study in recent decades. The purpose of the current study is to assess the impact of foreign investment in a particular country within a specific sector of the economy. Such an approach precludes the capacity to make generalizations based on the outcomes of the analysis. This does not however mean that there is no benefit in seeking to assess our specific case in a comparative way, where evidence allows. In order to bring depth to our assessment of the modern history of foreign direct investment in Zambian agriculture, the study calls on available data from Uganda and Mozambique of a nature sufficiently comparable to test the findings from the principal case.

The choice of comparison countries was driven primarily by data availability. In the early stages of the study, approaches for access to data were made to government entities and officials in various southern and eastern African countries. While some data on foreign investments was made freely available by officials in Tanzania, Kenya and Ethiopia, this was not in a form or volume sufficient to be utilized in the comparative approach adopted by the study. This data was either too limited or too broadly aggregated to make general observations about investment patterns over time.

Uganda (which gained independence in 1962) provides an interesting comparator as another landlocked former British colony that relied on transit via a larger colonial neighbor (Kenya) for access to international markets (see Map 3.1). Furthermore, and in contrast to then Northern Rhodesia, the agriculture sector in the colonial period was dominated by smallholder production in cash crops such as cotton and coffee. A European settler-led plantation economy did not take root in the early 1990s, concentrating on coffee and rubber production as the peasant economy focused on export cotton, but never received the type of government support seen in Kenya or the Rhodesias (Youé 1978). Plantation agriculture was seen only as an

opportunity to diversify the protectorate’s agricultural production, dominated by cotton. Without significant government assistance, the European plantation sector dwindled from the 1920s onwards, with the peasant sector also taking over the majority of coffee production in the years before World War II (Youé 1978).



**Map 3.1: Southern Africa highlighting Zambia, Uganda and Mozambique**

Mozambique (which gained independence in 1974) provides a comparator in the immediate vicinity of Zambia (see Map 3.1), and is a country with ready access to international markets via a system of coastal ports, while representing an example of a different colonial heritage (as the former colony of Portuguese East Africa). Under colonial governance for a longer period, Portuguese East Africa experienced a dual agriculture sector with a preferenced European plantation commercial sector and an unsupported, subsistence-based ‘family-sector’, for which barriers were erected against increased commercialization (Raikes 1984). In the final years before independence, the commercial sector was producing almost exclusively for the colony’s white population, with production dominated by Portuguese and South African producers (Raikes 1984).



## Data Sources

The principal data sources adopted for the study are summarized in Table 3.1.

For the pre-war and early post-war periods, the key data sources for Northern Rhodesia are the colonial Blue Books and colonial Annual Reports. Colonial Blue Books, which account for the main business of government in a standardized form across the British Empire, are available only for the period between 1924 and 1948 inclusive. This reflects the relatively limited timespan of colonial office administration in Northern Rhodesia, particularly when compared to the British colonial history of areas of East and West Africa, and the Cape Colonies. Annual Reports, which provide additional narrative detail on the figures recorded in the Blue Books, were prepared in a relatively consistent pattern for Northern Rhodesia, and reports for the years from 1924 to 1938 are utilized. Examples of the types of data drawn from the Blue Books and Annual Reports include agricultural production figures and the geographic distribution of production, average wage and tax rates, and the volumes and value of exports and imports. This data is used both in its raw form and in the calculation of various measures. Comparative data for Southern Rhodesia is drawn from the sporadically published Yearbooks. For the study period, the relevant Southern Rhodesian Yearbooks were published in 1924, 1930, 1938, 1947 and 1952, and various editions of the annual Southern Rhodesia Statement of Trade and Shipping. Northern Rhodesia Blue Books and Southern Rhodesia documents were sourced from the British Online Archives, while Annual Reports were sourced from the collections published by the University of Illinois.

For the remainder of post-war period prior to independence, the main source of economic data is the Monthly Digest of Statistics for the Federation of Rhodesia and Nyasaland, which came into being on 1 August 1953. The more detailed statistics available in the Monthly Digest reflect the more sophisticated statistical capacity of Southern Rhodesia, which operated as the most significant of the three federated territories, and the capital of which housed the Federation government. The Monthly Digests provide consistent treatment for figures for National Accounts<sup>7</sup>, population, European and African employment and production. While the Monthly Digests utilized are those published between 1954 and 1964, data published usually incorporates time series from the late 1940s or early 1950s onwards. Also of significant value are a number of special supplements and articles published in addition to but within the Monthly Digests series. These provided for a number of demographic and economic focuses, and of particular relevance catered for detailed review of European agriculture in Northern Rhodesia. Statistical digests continued to be published regularly during the first decade of Zambian

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<sup>7</sup> National accounting was introduced relatively late to the Northern Rhodesian context, the first formal attempts being those of Deane (1948) based on data from the late 1930s.

independence, and later quarterly or biannually. Such digests up to the late 1980s have been utilized in examining the years between the two main study periods (see Chapter 5). Statistical digests were accessed from the holdings of Nordiska Afrikainstitutet (NAI) and Statistika Centralbyrån (SCB), both located in Sweden.

Source	Data Used	Years
Blue Books, Northern Rhodesia	Exports and Imports, Agricultural Production (by district), Cultivation Area, Average Wage Rates (by occupation)	1924-1948
Annual Reports, Northern Rhodesia	Land Settlement Enquiries, Exports and Imports, Narrative Reports on Production and African Employment	1924/25-1938
Census of the Non-African Population, Northern Rhodesia	European Population (by district), European Employment (by district and sector), Religious Affiliation, Residency Length, Africans in Employment (by district and sector)	1946, 1951, 1956, 1961
Monthly Digest of Statistics, Federation of Rhodesia and Nyasaland (including Special Supplements)	Agricultural Production, Agricultural Productivity, Agricultural Units by Size, Cultivation Area, Employment (by sector), National Accounts, Immigration, Average Wage Rates (by occupation)	1954-1964
Northern Rhodesian Handbook	Post-War Immigration, Agricultural Production	1953
Monthly Digest of Statistics, Zambia	Employment, Exports and Imports	1964-1988
World Bank, World Development Indicators	Gross Domestic Product, Gross Domestic Product Per Capita, Population, Value Added (by sector), Employment	1960-2016
United Nations Food and Agriculture Organization, FAOSTAT	Agricultural Production, Cultivation Area	1964-2014
Zambia Development Agency, Pledged Investments	Year of Pledged Investment, Company Name, Industry Sector, Industry Subsector (1992-2009), Location (by district), Country of Origin, Proposed Investment (Nominal US Dollars), Proposed Employment	1992-2016
Uganda Investment Authority, Pledged Investments	Year of Pledged Investment, Company Name, Industry Sector, Country of Origin, Proposed Investment (Nominal US Dollars), Proposed Employment	1992-2016
Centro de Promocao de Investimentos (CPI, Mozambique), Pledged Investments	Year of Pledged Investment, Company Name, Industry Sector, Country of Origin, Proposed Investment (Nominal US Dollars), Proposed Employment	2005-2016

**Table 3.1: Principal Data Sources for the Study**

While the study takes the figures provided in official statistics on face value, and as an objective assessment of the subject being addressed, at the base level all data is collected and/or collated by individuals. Human error always remains a possibility, while figures are regularly rounded to the nearest hundred or thousand.

Wherever possible, macroeconomic and population data for the post-independence period is taken from the World Bank, to ensure consistency in approach and international comparability. Zambian authorities regularly, particularly in the early independence period to 1990, changes base years for calculations, making comparison or the development of time series difficult without access to the underlying data sources. Gross Domestic Product (GDP) is therefore preferred from the World Bank, as are Value Added by broad production sectors. The exception to this is the use of further disaggregated sector by sector employment data for the main study period, for which the Zambia Data Portal is preferred as the only available source. For the majority of the study period, GDP figures are not disaggregated to the provincial level. This is unfortunate, as such provincial level data would aid our assessment of regional growth disparities and local economic growth drivers. As part of an attempt to further strengthen the regional devolution process, the Zambian Government recently committed to producing provincially disaggregated GDP figures. The first version of these, covering the years 2014 and 2015, were published in May 2017.

Modern production and cultivation area data is taken from the Food and Agriculture Organization or Zambia Data Portal, depending on the period or level of disaggregation required. Wherever possible, information from the Food and Agriculture Organization is preferred, to aid international comparison between these and other studies.

## **Investment Certificates**

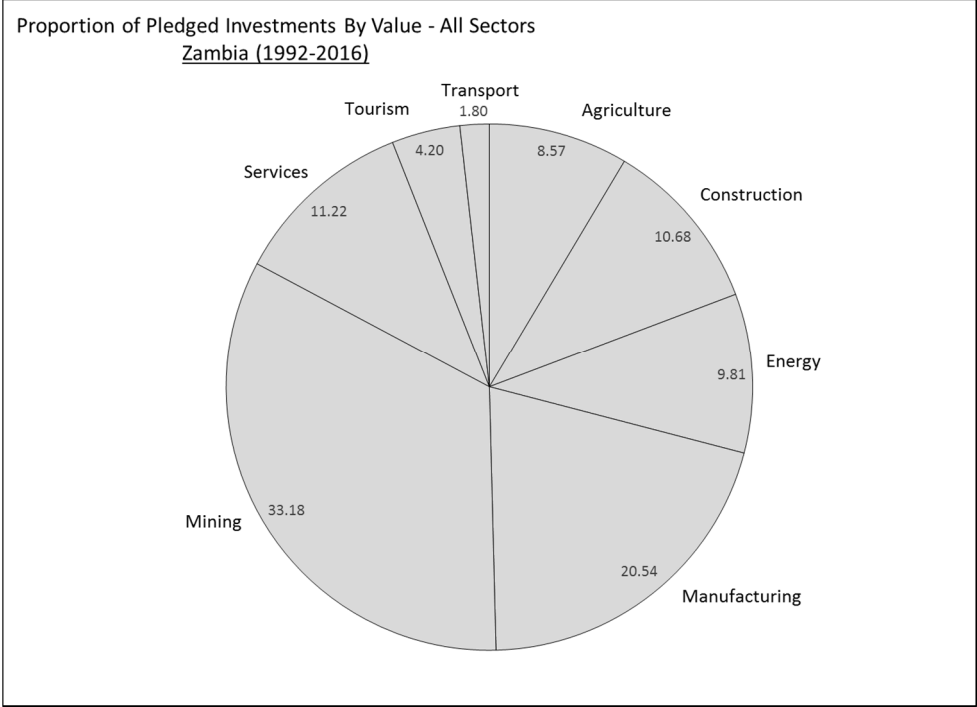
The major source for the multi-party democracy period is data on investment certificates generated for proposed investments meeting the notification criteria of the Zambia Development Agency. The Agency was created via legislation in 2006, with responsibility “for fostering economic growth and development in Zambia through promoting trade and investment and an efficient, effective and coordinated private sector led economic development strategy” (ZDA 2018: website). Prior to 2006, a role similar to that played by the Agency was performed by the Zambia Investment Centre, which was established by legislation in 1991 to regulate foreign investment in Zambia. The data available covers the operations of both organisations, for the years 1992 to 2016, and was collected in two tranches, the first in late 2010 (covering the years 1992-2009) and the second in 2017 (covering

the years 2010-2016). Initial access to data in 2010 was made possible via a direct co-addressed approach to the Permanent Secretary of the Ministry of Commerce, Trade and Industry and the Director General of the Agency, while Agency contacts made during this process facilitated direct communication in 2017.

The data contains information on all proposed investments across all economic sectors notified to the Agency, including information on company name, district, size of investment (in nominal US dollars), expected employment impact and the investment's country of origin. Where relevant for joint ventures, an investment may contain more than one country of origin.

When data is combined across the two waves, a total number of 5,217 observations is available across the 25 year study period. A number of steps were taken to prepare the data for further analysis, and these are outlined in detail in the Appendix. The two main aspects of this process are worthy of brief consideration here. Importantly, the refinement saw the removal of pledged investments of Zambian origin, given our focus is on foreign interest. Those investments in which Zambian investors were joint venture partners with foreign interests were retained for analysis. This refinement leaves a total of 4,124 observations as part of the principal data set for analysis, with a total pledged investment value of \$40,192,396,417 (in 2010 US Dollars). The second refinement saw the use of sub-sector data (available only for 1992-2009) to reclassify some observations between sectors where miscoding was apparent. For example, all sub-sector references to 'Agro-Processing' were transferred to the Agriculture sector, where these were previously distributed between Agriculture and Manufacturing. It is noted that a number of processing investments in more recent years (2010-2016) might be excluded from the final subset for analysis having been classified as either Manufacturing or in the case of biofuels, Energy, given the lack of sub-sector information with which to actively re-allocate between sectors. There is some evidence of this, with a major proposed Chinese biofuel investment that formed the basis of a case study in Brautigam (2015: 130-134) being thus classified.

The distribution of pledged investments across industry sectors for the refined data set is presented in Figure 3.1. The Mining sector dominates overall foreign investment trends, followed by the Manufacturing sector, a traditional focus for foreign direct investment globally. Perhaps surprisingly, and importantly in the context of this study, is the not insubstantial proportion of investments being directed towards Agriculture, a sector which until the last decade, was little considered in discussions of foreign investment in the developing world.



**Figure 3.1: Proportion of Pledged Investment by Sector, Values in 2010 US Dollars. Author's calculations based on ZDA data.**

There are a number of limitations to the data which, while not fatal for the purposes of this study, ensure that caution must be taken in its use.

Firstly, it must be noted that the investment data available results from the application and generation of investment certificates by the Zambia Development Agency. While the process of obtaining such certification suggests a legitimate desire to undertake business activities, the Agency has not traditionally undertaken follow-up investigations to determine that the size of eventual investments match that initially proposed<sup>8</sup>. Kragelund (2009), in a study focusing on Chinese investment, references an interview with an Agency official which claimed that approximately 70 percent of pledged investments were ultimately fulfilled. In a similar vein, the ultimate value of the final investments that do take place, as well as any ultimate employment impact, may vary either upward or downward, from the initial certificate. To this end, there seems a logical premise that investors may seek to over-estimate the employment opportunities expected from a given investment, as the Agency has widespread powers to provide tax and other incentives to induce investment. However, the wide variation in reported expected

<sup>8</sup> More recently, the Agency has begun to undertake some follow-up activities, including surveys.

employment figures, including the fact that 682 investments nominate 10 or less anticipated jobs, with 150 listing zero employment impact, ameliorates against such concern.

Secondly, the Zambia Development Agency has indicated that the data available may underrepresent foreign investment in the agriculture sector, as government investment priorities, and therefore desire to stringently record investments in specific sectors, have varied over the period in question. This is not a significant issue in the context of the current analysis and could only be expected to enhance the general findings. Furthermore, it is expected that some foreign investments bypass the Agency's processes, being registered directly by line ministries of government or as Zambian companies (Kragelund 2016).

When we seek to progress to a more detailed analysis of the Agriculture sector, which includes 832 observations, a third issue requiring consideration relates to district-level data coding. The Zambia Development Agency codes proposed investment locations by district. There are currently 106 districts, and around 70 prior to a 2013 decentralization process. However, there appears to be a bias in the data towards the Lusaka district (46.3% of volume and 63.5% of value), which is located in Lusaka province. Since proposed investment in remaining districts of Lusaka province is generally low, it is considered plausible that a range of proposed investments in Lusaka district may have been miscoded, where they exist in outlying districts of the province. At the same time, there is the possibility that some proposed agricultural investments have been listed against a Lusaka-based office or postal address, rather than the intended investment site. This possibility is taken into account in the analysis in Chapter 5.

Steps have been taken to triangulate the data with other available sources, with a focus on data for the Agriculture sector. Two key sources have been used. Sipangule et al (2016) conduct an analysis of the impact of commercial farms on smallholder outcomes. Data on commercial farms was obtained using surveys, and while the 862 responses from commercial farmers contained 726 of Zambian origin, the remainder provide an opportunity to cross-check our data. The investor origin of the remaining 136 observations were assessed for correlation with the 832 observations for our Agriculture data set. A correlation coefficient of 0.702 provides a degree of comfort with respect to our data.

Secondly, the limited information available from the Land Matrix was assessed against our data. Land Matrix ([www.landmatrix.org](http://www.landmatrix.org)) purports to provide a transparent and open source of information on large scale land acquisitions in the developing world. It acknowledges concerns with the veracity of formal publications associated with such land acquisitions, and therefore relies on the limited information available from unofficial and public sources, such as newspapers. Land Matrix has a threshold definition of land acquisition, making direct comparison with our data difficult. For its purposes, land acquisitions must:

- Entail a transfer of rights to use, control or ownership of land through sale, lease or concession;
- Have been initiated since the year 2000;
- Cover an area of 200 hectares or more;
- Imply the potential conversion of land from smallholder production, local community use or important ecosystem service provision to commercial use (Land Matrix 2018).

As of January 2018, Land Matrix contained information on 28 such deals in Zambia. Of these, the investing company involved was traced clearly within our data set to 17 individual observations, providing a level of comfort that major land transactions are utilizing the Zambia Development Authority investment process. It should be noted that at least one Land Matrix reference appears to be duplicated, while the sources utilized seem repetitious and arguably circular. The breakdown of investment origin across the two data sources has a correlation coefficient of 0.93.

## **Comparative Investment Data**

As previously indicated, the study utilizes data from two additional African countries to support the assessment of the role of modern foreign investment in Zambian agriculture.

For Uganda, data was sourced from the Uganda Investment Authority, the Government of Uganda's investment promotion and facilitation entity. Sourced in two tranches in 2011 and 2017, the data covers that same 1992-2016 period adopted for the main study and therefore provides a robust comparator to assess some of the investment phenomena identified in Zambia. Initial access to the data in 2011 was made possible via direct approach to the Executive Director of the Authority, while Authority contacts made during this process facilitated smoother communication in 2017. The data includes 6,474 observations and contains information on all proposed investments across all economic sectors notified to the Authority, including information on company name, district, size of investment (in nominal US dollars), expected employment impact, the investment's country of origin, and year of investment. In contrast to Zambia, the Ugandan data only lists one investment country of origin for each investment. A similar refinement process as that for the Zambian data was undertaken, and is detailed in the Appendix. The refined data set, including the removal of those observations with Uganda as the investment source, leaves a total of 3,989 observations, with a total pledged investment value of \$12,345,899,116 (in 2010 US Dollars).

The sectoral breakdown is provided in Figure 3.2, reflecting a larger proportion of overall investment being directed towards agriculture than that which has

occurred in Zambia, noting in particular the significantly lesser role of the mining sector in Uganda.

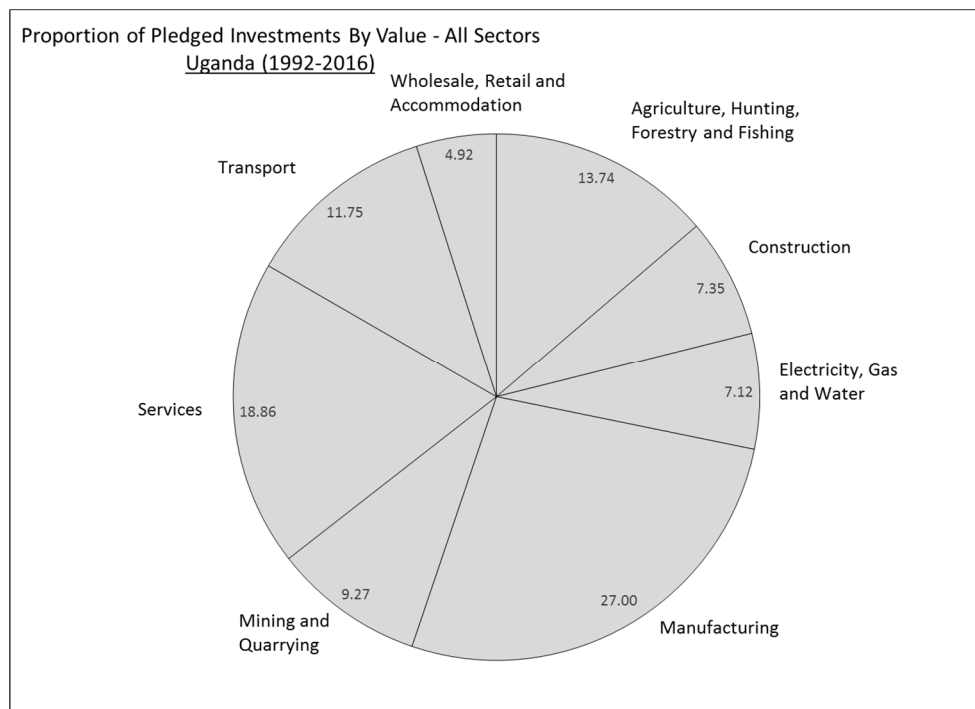
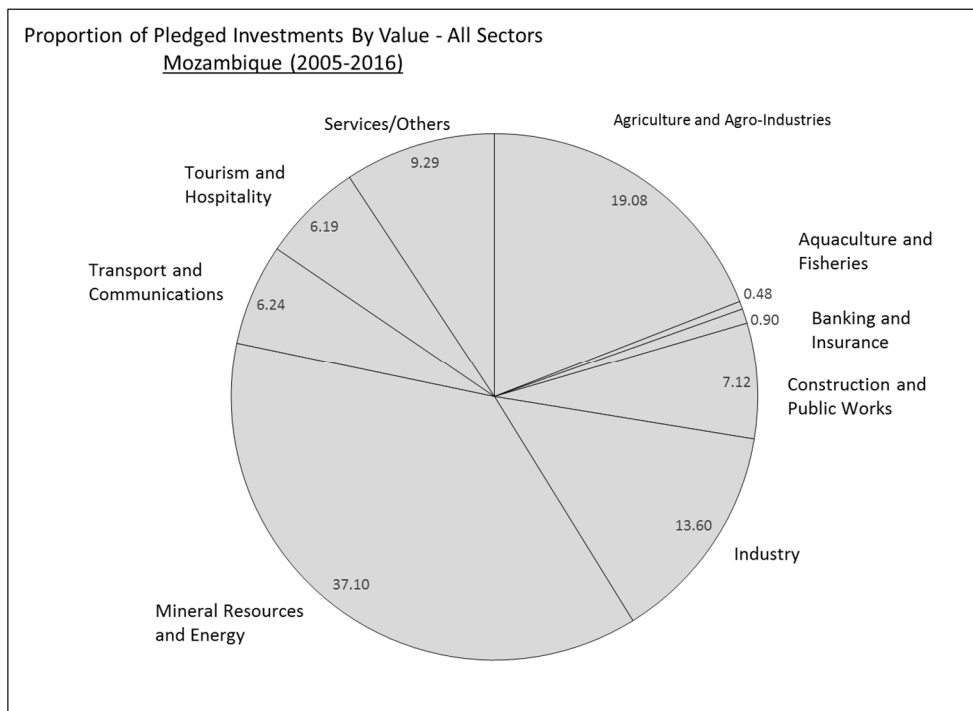


Figure 3.2: Proportion of Pledged Investment by Sector, Values in 2010 US Dollars. Author's calculations based on UIA data.

For Mozambique, data was sourced from the Centro de Promocao de Investimentos (CPI, Investment Promotion Center) of the Government of Mozambique. Sourced in two tranches in 2010 and 2017, the data covers the 12 year period from 2005 to 2016, which corresponds to the second half of the time series available for Zambia and Uganda. Initial access to the data in 2010 was made possible via direct approach to the Director General of the CPI, while contacts made at this time facilitated smooth communication in 2017. The data available is in a different form to that for the other two countries, which presents both strengths and weaknesses. Firstly, the data includes a breakdown of external (foreign) and internal investment for a given project. For the purposes of the current study, the internal investment portion of any project (whether wholly or partially financed by Mozambican sources) is removed from the analysis in order to ensure the best possible comparison with the other countries. The foreign element of any Mozambican joint venture is retained in the analysis. Secondly, unlike the Zambian and Ugandan data sets, where foreign joint ventures are in place, investment splits have been provided, making for a more refined understanding of foreign investment sources. Thirdly, for the 2005 to 2009



period, individual level observations are available for all industrial sectors. For the 2010 to 2016 period, individual level observations are only available for the Agriculture and Agro-Industries sector, supported by aggregate data across the remaining industrial sectors. This latter has no material bearing on the analysis, given the study’s focus on the agriculture sector and the intention to compare this sector with the broader economy as a whole.



**Figure 3.3: Proportion of Pledged Investment by Sector, Values in 2010 US Dollars. Author’s calculations based on CPI data.**

The data set, when internal investment (*investimento directo nacional*) is removed from calculations, includes total pledged foreign investments (*investimento directo estrangeiro*) of \$15,791,603,856 (in 2010 US Dollars). The sectoral breakdown of foreign investments in Mozambique is provided in Figure 3.3, reflecting a significantly larger proportion of overall investment being directed towards agriculture and agro-industries than in either Zambia or Uganda, while in a similar fashion to Zambia, a large minority of investment has been directed towards the minerals and energy sector.

## Colonial Population Data

Population data for European settlers is taken from colonial censuses. These censuses enumerate only the European, Coloured and Asiatic populations of the colony, and for the study period took place in 1931, 1946, 1951, 1956 (as part of the Federation of Rhodesia and Nyasaland) and 1961. Beyond the enumerated populations, these censuses incorporate estimated figures for the African population and relatively detailed figures on Africans in employment, based on returns provided by Europeans employers. Census information was sourced principally from the holdings of Nordiska Africanska Institutet. We are indebted to the British researcher, Ms Pamela Shurman-Smith for her kind provision of a copy of the difficult to obtain 1961 Census of the Non-African Population.

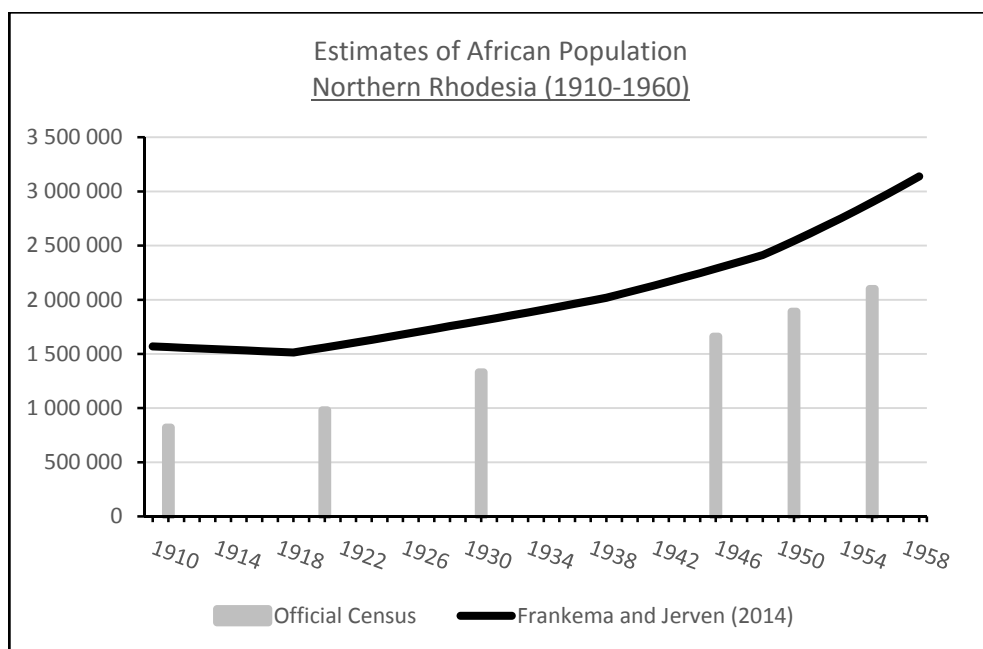


Figure 3.4: Estimates of African Population in Northern Rhodesia. Data from 1956 Census and Frankema and Jerven (2014)

Population figures for the African population during the colonial period are inherently suspect, and the extremely rough estimation methods used in Northern Rhodesia are acknowledged by the colonial authorities which commit them to print. The first full census of the African population in Northern Rhodesia/Zambia was not undertaken until the dying days of colonial administration in 1963 and not published until after independence. In view of this, aggregate population figures where adopted are taken from the data set developed by Frankema and Jerven (2014), who utilize a backwards projection methodology with a base year of 1960.

The authors themselves take the work of Manning (2010) as a point of departure, arguing that the earlier work demonstrated a limited understanding of the African historical context and that a more nuanced approach, taking account of the continent's widespread geographic differences and more considered population growth rate assumptions, enabled greater clarity in estimating colonial populations. Figure 3.4 overlays the Frankema and Jerven (2014) population series with colonial estimates listed in the 1956 Census, to demonstrate how the recent calculations indicate that colonial estimates are likely to have grossly underestimated the African population of Northern Rhodesia.

### **A Note on Currency and Area**

Data across the study periods sees key macroeconomic indicators published in different scales. To ensure consistency with the primary sources utilized, and to more readily enable cross-referencing with secondary sources, the contemporary preferences of the time are maintained in this study. This results in:

- the use of *acres* as the principle measure of area and *Great Britain pounds* (GBP, £) as the measure of value for the colonial period in Northern Rhodesia.
- the use of *hectares* as the principle measure of area and *United States dollars* (USD, \$) as the measure of value for post-independence Zambia.

An acre is an imperial measure of land area equivalent to 4,840 square yards (1 furlong x 1 chain). A hectare is a metric measure of land area equivalent to 10,000 square meters (100m x 100m). One acre is equivalent to 0.4047 hectares. One hectare is equivalent to 2.471 acres.

Where colonial financial data is assessed in a time series perspective, 1948 is chosen as the base year, a year prior to a significant revaluation of the Great Britain pound against the United States dollar. Financial data in the post-independence period is displayed in constant 2010 US dollars, which is the current World Bank standard. Where financial data is not displayed with reference to a base year, this is clearly stated.

While Zambia has its own currency, the kwacha (ZMK), foreign investment data is recorded in nominal US dollars, making this currency the logical measure for the study.



## 4. Europeans in Northern Rhodesia Before 1924

In the early years of the twentieth century, the direct European experience in Northern Rhodesia was relatively limited and focused on supporting minor mining enterprises in the vicinity of Broken Hill, now Kabwe, and north-south trade associated with Belgian Congo mining interests in Katanga. Administrative control of what was then North-Western Rhodesia and North-Eastern Rhodesia, had been bestowed upon the British South Africa Company (BSAC). The BSAC was formed in 1889 on similar lines to the Imperial British East Africa Company, and was also responsible for administering Southern Rhodesia before that territory assumed self-government in 1923. Prior to the advent of BSAC administration, European contact was confined largely to the work of missionaries in the second half of the 19<sup>th</sup> century, though some Portuguese trading had occurred in the south-east of the country.

The early administrators of the territory did not find a virgin territory disconnected from the outside world. The tribal populations extant in the country at the time of initial white settlement are understood to have been a mixture of groups migrating from both the north and south of the region in the previous 200-300 years, some as recently as the mid-1800s (Roberts 1976: 117ff). Relatively sparsely populated, with the notable exception of some densely populated though isolated rural clusters, the large country lent itself to a diversity of tribal groupings, with no centralized control across its full breadth. There were however a number of strong chieftaincies that dominated wide areas to a lesser or greater extent, not the least of which were the Lozi in the west, the Ngoni in the east and the Bemba in the north. All three groups were heavily involved with the inter-tribal raiding during the 19<sup>th</sup> century. While geographically isolated from the main European and Arabic coastal trading systems until relatively late, the populations of modern Zambia were exposed to local trading networks that supported everyday needs, including pottery, clothing and foodstuffs, as well as rarer commodities such as salt, iron and indeed copper (Roberts 1976: 101-103). Increasingly, the country was exposed to trading forces that approached from the west, east and south, which by the late 18<sup>th</sup> century saw a series of trading routes linking the east and west coasts (Roberts 1976: 111).

Agriculturally, the country was also divided. In the south, a tradition of cattle-keeping and semi-permanent hoe-cultivation existed, particularly among the Tonga,

Ila and Lozi peoples. The northern areas saw the flourishing of a form of slash and burn agriculture known as *citemene*. This latter form of production, necessitating large areas for shifting agriculture and with inherent impacts on soil conditions, was seen as inherently lazy by many early European agriculturalists, and was significantly restricted by colonial administrators from 1910 onwards. The restriction of *citemene* was implemented despite the fact that it was surprisingly productive and found in experiments to yield up to three times more than hoe cultivation in the production of millet (Baldwin 1966: 26; Allen 1965: 73), which was the principal subsistence crop in the area. In a wide-ranging study of *citemene* among the Bemba in Northern Province, Moore and Vaughan (1994: 11-19) suggest that attempts to restrict the use of the *citemene* system (it was never fully abolished) had more to do with the ease of colonial tax collection and later the desire to increase male labor migration to the mines, than any actual inferiority of the cultivation technique when compared to semi-permanent hoe cultivation.

From 1903 onwards, a small number of white immigrants (principally Afrikaners from South Africa), began to farm in the southern reaches of what is now Zambia (Roberts 1976: 177). The first census activity in the territory in 1911 indicated that some 16 percent of the European population of the territory were Afrikaners (Gann 1958: 142). While estimates from the time are extremely limited, there were some 60-75 farm units occupied by Europeans in North-Western Rhodesia, with a combined land size of between 240,000 and 280,000 acres (Vickery 1986). By the time of the next census, in 1921, some 504 Europeans males listed farmer as their occupation, with most based along the railway north and south of Lusaka. At the time, there were 29,000 acres of land under maize cultivation by European farmers, with a yield of 145,000 bags (of 200 pounds each) (Baldwin 1966: 18). The only other substantial farming population was found in the east of the country around Fort Jameson, now Chipata, where by 1921 there were already 30 tobacco producers. The high value potential of tobacco production is more than reflected in the circuitous route to market experienced by the isolated Fort Jameson producers, whereby the product was transported some 300 miles by truck into Nyasaland, before being shipped by rail and barge through Nyasaland and Portuguese East Africa to reach the port of Beira on the coast of what is now Mozambique. In 1924, Fort Jameson tobacco made up 20 percent of total exports from Northern Rhodesia, second only to lead by value and just shy of the combined exports value of live cattle trade and maize products<sup>9</sup>. Two years later, tobacco made up over 32 percent of total exports, by far the largest commodity<sup>10</sup>.

The BSAC saw settlers as an opportunity to diversify its income and make better use of its investments, principally the railway which had been built to service mining

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<sup>9</sup> NRC, *Colonial Reports – Annual No. 1292, Northern Rhodesia Report for 1924-25*

<sup>10</sup> NRC, *Colonial Reports – Annual No. 1380, Northern Rhodesia Report for 1926*

operations. Meanwhile, the British Colonial Office feared the creation of another troubled territory that would increasingly become a burden on the state (Gann 1958: 136ff). However, the simple fact remained that the mines required not only labor but provisions, and that local African production in the vicinity of the mines was insufficient to meet demand. Quick results were considered vital, and a path of white settlement was set.

Early settler agriculture was extensive in nature, and the lack of markets beyond the Congo mines in these early years, combined with the difficulty of getting goods to market from beyond the immediate vicinity of the line of rail, made conditions extremely difficult. However, with African production in traditional tribal economies geared principally towards subsistence, not market, insufficient to meet demand, a continued demand side pressure towards further immigration ensued. Throughout this period, production focused on maize and cattle, staples for the country's agriculture sectors for decades to come.

Growth in settlement increasingly gave rise to conflict between new settlers and Africans. This first arose in the Fort Jameson area in the east, where population density resulted in new settlers conflicting with Africans in prime agricultural conditions from an early stage, leading to a Reserves Commission as early as 1904. The resulting creation of reserves for exclusive use by Africans had little demonstrable impact at first, as there was no capacity for eviction without consent, while the increase in cropping in the region, mentioned above, led to increased labor requirements from landowners. Elsewhere, including along the line of rail where the African population was “relatively sparse” (Gann 1964: 135), with compensation being paid to Africans upon the alienation of land to Europeans where they resided, very few chose to continue as tenants given the continued surplus land readily available.

Indeed, it was not until an increase in production following World War I that the calls for further reserves began in both the east and for the first time along the line of rail, coinciding with settler farmers beginning to feel the first incipient competition from African producers in cattle and maize (Gann 1964: 136f). The reserves movement was initially objected to by the BSAC, which appears to have considered the most desirable outcome to have been the individualization of African landholdings and the destruction of the tribal land ownership. Regardless, the BSAC administration on the ground made no move to implement such a policy – not only was it contrary to the overwhelming view that the African populations should be funneled into wage labor in the mining and commercial agriculture sectors, but it would have been strongly resisted by tribal leaders throughout the country.

Despite the evidence that land was beginning to have specific value to Africans around markets, and often adjacent to settler farmers where they could compete in the production of low-capital products such as maize, the attitudes and underlying principles reflected in the early reserve commissions was one of non-competition. Here, there existed an assumption that Europeans were already best integrated in the

economy and therefore should be preferenced around the railway, resulting in reserves that would be further away from markets and transport opportunities. It should be noted that none of these assumptions were uncontested, both at the local level and more theoretically in the larger debates about the role of colonialism and the 'native problem' of the time, but the case for was made out in sufficient numbers. Ultimately, African agricultural development was expected to benefit from 'trickle-down' theory, where "African labor migrants would go to the towns where they would acquire the necessary capital for agricultural improvements at home by working a while for European employers" (Gann 1964: 223).

The potential pitfalls of such a conceptualization of non-competition are obvious, and this issue came to a head within the first decade of the Colonial Office taking over administration of the territory in 1924, the period which is the focus of our first empirical chapter that follows.



# 5. Settlers, Africans and Commercial Agriculture in Colonial Northern Rhodesia (1924-1964)

## Introduction

This chapter takes as its focus the colonial history of Northern Rhodesia and seeks to analyze the impact of foreign investment in the development and functioning of the agricultural sector, and in doing so assess the hypotheses detailed in chapter 2. The story of commercial agriculture in colonial Northern Rhodesia is a complex one, impacted variously by the size of the internal market and opportunities for export, the carrying capacity of the arable land available for cultivation and the location of those lands, and by the relationship between foreign investment in the form of settler agriculture and the territory's Indigenous African population, which saw substantial outlets for surplus production created for the first time.

The chapter begins with a consideration of the origins of agricultural settlers, following which we implement our assessment of the Northern Rhodesian experience against the analytical framework. Such an assessment demonstrates that, given the right conditions and incentives, African subsistence agriculture benefited from proximity to commercial agriculture, with significant results and successful market entry. This experience also demonstrates that the opportunities for such spillovers to occur have been limited by systematic distortions of the market and targeted government policy actions. At best, distortions that preferenced European over African production can be considered as ill-conceived paternalism. At worst, they were an ill-meaning form of protectionism of large producers from competition on the one hand, and an example of urban bias against the rural sector on the other. The final section concludes.

## The Origins of Agricultural Settlers

An exact breakdown of the ethnic origins of agricultural settlers in Northern Rhodesia is unknown, though Gann (1964: 131f) indicates that the most numerous group of early farmers were Afrikaans-speaking immigrants from South Africa, with the remainder principally made up of former BSAC officers or those of the British colonial administration, including the armed forces.

Information about the European population of the colony more broadly is available, and from this it is possible to infer with a degree of comfort the likely mix of settler farmers. The 1951 census is the first which disaggregates the British born population by citizenship – previously, the only distinction made was between those British citizens by birth and those by naturalisation. Of the 37,079 European enumerated in the 1951 census, 43.6% indicated that they were citizens of the United Kingdom, 43.2% of the Union of South Africa and 4.5% in Southern Rhodesia. By 1961, the last time a comparable census was undertaken during the colonial period, 28.7% listed United Kingdom citizenship, 26% South African citizenship and 38.1% the recently formulated citizenship of Federation of Rhodesia and Nyasaland.

More detailed information can be garnered from declarations of places of birth, with the Union of South Africa by far the most heavily dominant, with a total in each of the 1931, 1946 and 1951 census almost equivalent to the total of those born in Northern Rhodesia, Southern Rhodesia and United Kingdom combined<sup>11</sup>. This South African dominance continued into the 1961 census, by which time 25,115 listed their birthplace as South Africa (33.7%), 5,856 Rhodesia (7.9%), 16,127 Zambia<sup>12</sup> (21.6%) and 18,900 the United Kingdom (25.4%) (out of a total of 74,549). Year on year immigration figures for the entire period are not available, but the series in Table 5.1 covering the 14 year period from 1938 reflects the overwhelming dominance of South Africa and the United Kingdom in supplying the burgeoning European population of the colony, which itself was based principally on a rapid post-war expansion of the mining sector.

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<sup>11</sup> This trend of South African significance dates from the period of BSAC administration, with Gann (1958: 175) quoting the first census of the territory (1911) as including 513 South African born immigrants, compared to 673 born in the United Kingdom and less than 230 in total born elsewhere.

<sup>12</sup> While the census was taken in 1961, it was not published until 1964 and references to Northern Rhodesia have been replaced with Zambia

<u>Year</u>	<u>Union of South Africa</u>	<u>United Kingdom</u>	<u>All Other Sources</u>
1938	1263	660	862
1939	1103	611	938
1940	1040	438	480
1941	757	246	510
1942	953	266	403
1943	1417	269	327
1944	1109	248	287
1945	1719	269	556
1946	2221	974	802
1947	2361	1446	811
1948	2392	1990	1134
1949	3146	2197	1190
1950	3978	2199	1213
1951	3644	2383	1204

**Table 5.1: Pre- and Post-War Immigration into Northern Rhodesia by Origin. Data from Northern Rhodesia Handbook (1953)**

Further investigation of the self-reported religious professions allows us to make additional informed assumptions about those arriving from South Africa, and to a lesser extent Southern Rhodesia. While 48.3% of Europeans in the 1931 census identified the Union of South Africa or Southern Rhodesia as their birthplace, 15.4% nominated the Dutch Reformed Church as their religious group. In 1951, these percentages were 48.5% and 20.1% respectively, strongly suggesting a persistent role of Afrikaaner migration to Northern Rhodesia. However, by 1961, following a further decade of strong population growth in the European population, these figures had declined to 41.5% and 11.3%. This is particularly pertinent when considered in the context of the drive for responsible government first in Southern Rhodesia and later Northern Rhodesia, a significant driving force for which was fear that closer union with South Africa would see the two territories face an influx of ‘poor Dutch’ farmers, who faced land pressures within South Africa (Channock 1977, Chapters 8 and 9).

Specific details on the origins of land settlement enquires are only captured in some of the earliest Northern Rhodesian Annual Reports, from 1927 to 1930 (inclusive), but these details tend to suggest that the agricultural settlement patterns closely reflected the general immigration pattern and may have, if anything, included a greater bias towards South Africa, Southern Rhodesia and the United Kingdom (Table 5.2).

	<u>Internal</u>	<u>Union of South Africa</u>	<u>Southern Rhodesia</u>	<u>British Empire (other)</u>	<u>Belgian Congo</u>	<u>Other</u>
1927	136	30	13	9	5	1
1928	40	14	15	4	8	0
1929	38	58	26	13	2	2
1930	74	42	7	4	0	2

**Table 5.2: Origins of those making Land Settlement Enquiries. Data from Northern Rhodesia Annual Reports (1927-1930)**

## Implementing the Analytical Framework

### Locating Agricultural Settlement

The settler population was driven towards a concentration in the line of rail provinces in response to the country's factor endowments and the location of infrastructure facilities. It has already been discussed (in chapter 1) that the railway originally built to service trade with the Katanga mines traversed what can be regarded as the arable land most conducive to commercial agriculture. The market access generated by the railway led the Government to designate the areas within the vicinity as Crown land available for European farming. Beyond this factor, the prevalence of tsetse fly in much of the country restricted more wide-ranging European settlement, and particularly increased ranching activities. Table 5.3 displays the increasing concentration of the settler population over the colonial period, based on census returns.

<u>European Population</u>	<u>1911</u>	<u>1921</u>	<u>1931</u>	<u>1946</u>	<u>1951</u>	<u>1956</u>	<u>1961</u>
Line of Rail (LOR) Provinces	1014	3032	12708	20042	34653	62114	71061
Other Areas	483	602	1138	1865	2426	3163	3488
Total	1497	3634	13846	21907	37079	65277	74549
<b>Proportion in LOR Provinces</b>	67.7	83.4	91.8	91.5	93.5	95.2	95.3

**Table 5.3: Concentration of European Population in Northern Rhodesia. Author's calculations based on data from 1946, 1951, 1956 and 1961 Censuses of the Non-African Population<sup>13</sup>**

<sup>13</sup> The 1946 Census figures are significantly impacted by the inclusion of 3,181 Polish refugees who were present in the country and being supported in four camps at the time the census occurred. If these refugees are removed from calculations – less than 250 became permanent residents in the territory – the line of rail concentration in 1946 rises to 93.5 percent, reflecting an ever-increasing concentration of the European population in the line of rail provinces.

The significant concentration of European agricultural interests is reflected in the maize production in just three districts, Mazabuka, Lusaka and Chismaba, separated by less than 200 kilometers by road and rail. Combined, these three districts produced over 90 percent of Northern Rhodesian maize every year before the World War II and regularly as much as 95 percent, with this dominance continuing into the post-war period. Between 1949 and 1955, the three districts produced an average of 85 percent of the annual European maize crop<sup>14</sup>.

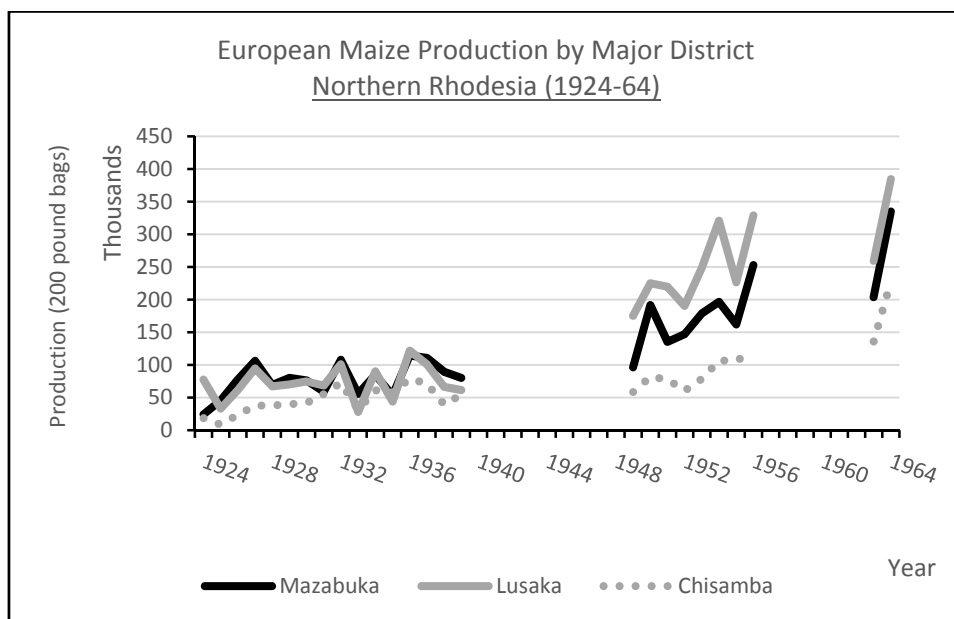


Figure 5.1: Maize Production in Key European Farming Districts, 1924-39, 1949-1956. Data from NR Blue Books and Monthly Digest of Statistics Article October 1957.

It is interesting to assess this regional production dominance a little more closely through the reflecting on the long term development in yields in the three districts. The limited increase in average yields across the three districts over time, particularly in the period to the mid-1950s, when compared to the high rise in production during the same period, demonstrates an extensification of production in the area. That is, more land was within these already dominant production areas was being brought under maize cultivation, rather than increasing output via intensive methods. Also of interest during this same period, which was before the widespread introduction of hybrid maize, is the fact that those farmers cultivating in excess of

<sup>14</sup> FRN, *Monthly Digest of Statistics, Special Supplement: European Agriculture in Northern Rhodesia 1954-55 Season*, September 1956

200 acres of maize were consistently obtaining higher yields per acre than those cultivating below this level<sup>15</sup>.

The colony's production of tobacco for export also demonstrates an increasing centralization of commercial agricultural production over time. As previously indicated, flue-cured Virginia tobacco was grown commercially from an early stage in the eastern parts of the country, in the vicinity of Fort Jameson. This is perhaps not surprising given the geographical similarities to the neighbouring areas of Nyasaland, where tobacco became a significant export commodity, first under production by European commercial farmers and later as a smallholder cash crop for African producers. European farmers were also cultivating the less-lucrative and less labour-intensive Burley form of tobacco in these eastern regions.

A marked shift in the locus of production occurred in the postwar period, in which a significant increase in the cultivation of Virginia tobacco along the line of rail rapidly matched and then overtook production in the eastern areas of the territory (see Figure 5.2). This rapid relative decline in European production in the eastern areas was accompanied by the entry of African producers into the production of Burley tobacco, but not to the extent that it substituted the former. By 1964, with the Eastern Province share of Virginia tobacco production declining to approximately 1.7%, that same region accounted for almost 94 percent of Burley tobacco production. In 1964, the value of tobacco production (across all varieties) on European farms was approximately £2,911,000, compared to £246,000 on African farms, reflecting the significantly more valuable Virginia tobacco market<sup>16</sup>.

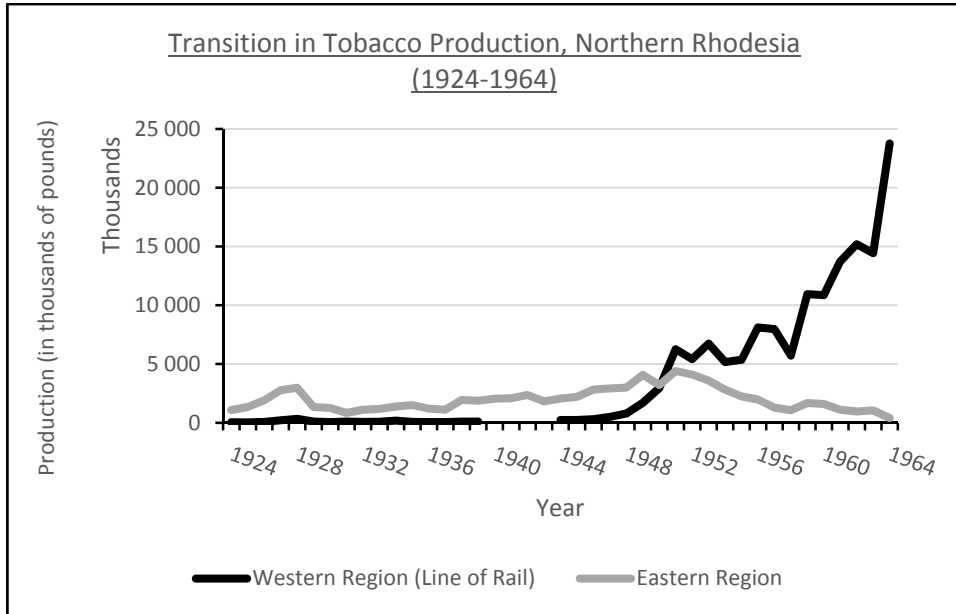
For so long Northern Rhodesia's most valuable agricultural export, despite the relatively low numbers of growers, the decline of settler production in the east further concentrated commercial farming interests along the line of rail. The production in the line of rail provinces was focused on the districts of Choma and Kalomo (south of Mazabuka in Southern Province) and Broken Hill (north of Chisamba in Central Province), where most producers combined tobacco growing with maize and other crop cultivation. In 1955, 152 of the territory's 301 tobacco growers (50.5%) were concentrated in these three districts. By 1964, this proportion was still as high as 46 percent (144 of 313 growers), with a further 22 percent located in Mkushi<sup>17</sup>.

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<sup>15</sup> FRN, *Monthly Digest of Statistics, Special Supplement: European Agriculture in Northern Rhodesia 1954-55 Season*, September 1956

<sup>16</sup> GRZ, *Agricultural Production in Zambia (Production in Non-African Farms Plus Sales of African Grown Crops)*, 1964

<sup>17</sup> GRZ, *Agricultural Production in Zambia (Production in Non-African Farms Plus Sales of African Grown Crops)*, 1964



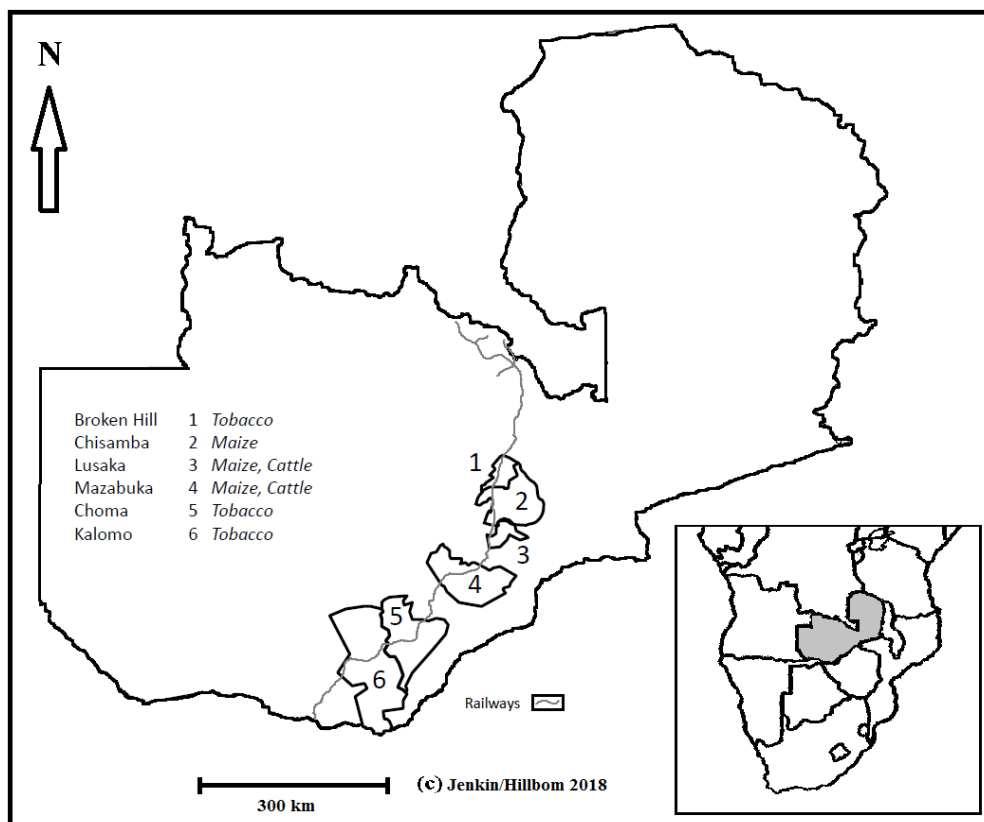
**Figure 5.2: Westward Shift in Tobacco Production and Sales 1924-1964.** Data from NR Blue Books, 1953 Northern Rhodesia Handbook and Monthly Digest of Statistics (Special Supplement August 1956; June 1965)

Whittingdon (1967) details the decline of production in Eastern Province, identifying both locational and capability issues as determining the failure of European production in the area. The high value of the crop, which was earlier identified as supporting the original production of tobacco in the Fort Jameson area despite high transport costs, subsequently diminished in comparison to alternative sources in both Southern and Northern Rhodesia. After 1950, the relative return per pound of production switched to favour tobacco produced along the line of rail, with eastern production gaining a reputation for a distinctive tang, dryer leaf and lower quality. Furthermore, there were questions regarding the capabilities of farmers in the area, and the failure to adequately maintain and rotate productive land led to diminishing returns (Whittingdon 1967). In this, there appears to be elements of the Forest Rent concept of Ruf (1995), where the initial bounty available through the bringing of previously un- or underused land under cultivation, diminished rapidly. Despite these failures, the government sought to support the eastern tobacco sector through the provision of incentives to maintain production. Eventually, the government provided support to leave, with a number of farmers relocating their tobacco production to the line of rail provinces, principally the districts of Mkushi, Choma and Kalomo (Whittingdon 1967).

The decline in settler agriculture in Eastern province is readily evident in census figures for Africans in employment. From a high of 30,276 in 1951, Africans

employed in Eastern Province dropped to 18,129 in 1956 and 12,075 in the final census of the colonial period in 1961<sup>18</sup>.

In the cattle industry, the concentration of European production was no less stark. Despite differential regional classifications throughout the colonial period, it is clear that Mazabuka and Lusaka were by far the major cattle producing district. Combined, these two districts accounted for 57.7% of total European cattle holdings in 1956. In the same year, a further 24.5% of cattle holdings were in Kalomo, Choma and Chisamba<sup>19</sup>.



**Map 5.1: Districts of Northern Rhodesia with Prominent Settler Maize and Tobacco Production in Late Colonial Period, including major railways**

While it has already been established that the overwhelming majority of the European population of Northern Rhodesia was concentrated along the line of rail

<sup>18</sup> FRN, *Census of Population 1956, 1960*; GRZ, *Final Report of the September 1961 Censuses of the Non-African Population and Employees*, 1965

<sup>19</sup> FRN, *Monthly Digest of Statistics*, October 1957



running north-south from Livingstone to the Copperbelt, Map 5.1 presents a graphical representation of the concentration of agricultural activities in the later colonial period, focusing attention on the major production districts for maize, tobacco and cattle. Combined, the six districts displayed contained 57.2% of the total number of all European farm holdings in Northern Rhodesia (based on 1955 figures), and 79.3% of total alienated agricultural land<sup>20</sup>.

When we consider that over the last 10 years of Northern Rhodesia's existence (up to 1964) the mining sector contributed an average of 49 percent of the colony's Gross Domestic Product<sup>21</sup>, the concentration of European commercial agriculture along the line of rail reflects the clear establishment of an economic development corridor, the concept of which has garnered significant interest in the last decade.

### **Distorting the Market: Policy under Pressure**

When assessing available evidence, it becomes clear that the history of agricultural policy in Northern Rhodesia is a story of selectivity. Principally, a selective approach to focus on the wellbeing of the politically connected settler commercial sector over the broader development of African agriculture and later, when limited efforts were made to develop African agriculture, particularly after policy responsibility for settler agriculture became a federal responsibility from 1953, these being directed to a limited cohort of African farmers. Following a brief review of the nature of agricultural policy throughout the colonial period, an analysis of the nature of the policies will occur through the prism of four identifiable forms of bias (wage labour bias, urban-rural bias, commercial-smallholder bias, land bias), each of which impacted on the flow of ideas, capital and opportunities from the commercial sector to the African smallholder sector.

While far from occupying a major share of Government expenditure, spending on agriculture was not insubstantial, particularly given its overwhelming focus on what remained a relatively small European settler community (see Figure 5.3). Spending took the form of extension services, agricultural research, water boring activities and the development of cattle dipping facilities.

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<sup>20</sup> FRN, *Monthly Digest of Statistics, Special Supplement: European Agriculture in Northern Rhodesia 1954-55 Season*, September 1956

<sup>21</sup> GRZ, *Monthly Digest of Statistics*, June 1965

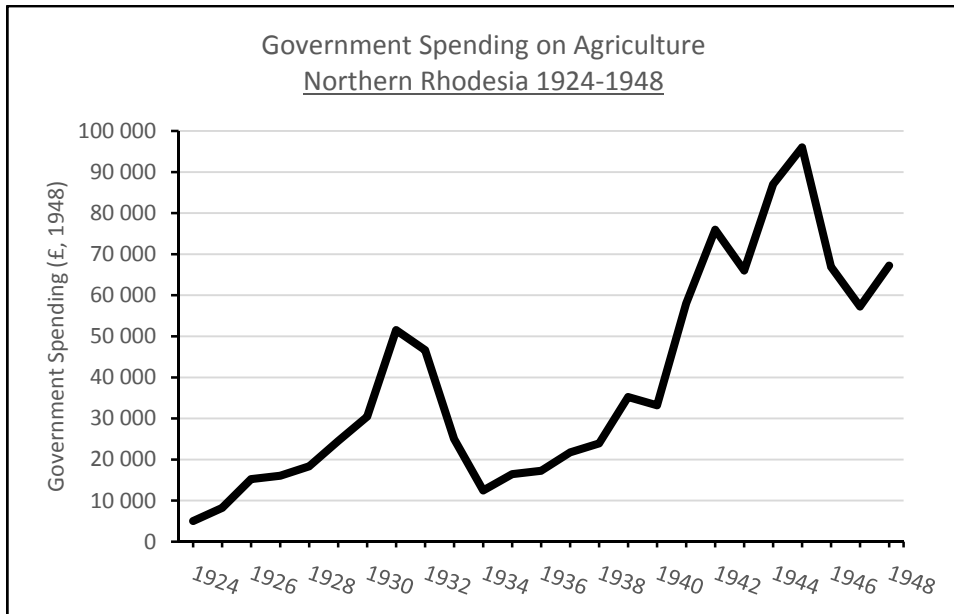


Figure 5.3: Expenditure on Government Agricultural Aid 1923-1948. Data from NR Blue Books

It is relevant to note that in the years before the Great Depression, authorities made a conscious effort to invest in African agriculture, with this spending specifically identified within colonial expenditure tables. At this point, the future of European agriculture, was less than clear. At its peak in 1929, spending on African agriculture equated to 11 percent of the total agricultural spend. Any efforts by Government to continue to encourage and expand African production appear to have dropped off with the Great Depression, at the same time that spending on agriculture was significantly reduced to levels that would not be recovered until the 1940s. At the same time, other forces within the agricultural sector in the years following the Great Depression would result in far greater discrimination against African agriculture, with the introduction of the Maize Control Board in 1937 and market segmentation between European and African producers.

Through the use of long term development plans, Makings (1966) articulates the changing nature of agricultural policy in the post-war period. This period saw a significant shift in focus for agricultural support, from an expansive approach intended to touch the entire country over a decade, to a targeted effort to direct scarce resources to those most capable of making the leap, or extending their participation, into the market economy. This transition was also impacted by the transfer of overall planning responsibility for European farming to the federal level after 1956, resulting in the Northern Rhodesian Department of Agriculture having a greater focus on African farming improvement. The bringing of the local population into the agricultural planning process reflected a series of good intentions,

unrealistic ambition and under-resourcing, with each successive agricultural development plan including goals way beyond the capacity of the colonial and early independence governments to deliver. Over time, what eventuated was the shift from a socio-economic development ambition to a more resource-appropriate approach focused on supporting those already advantaged, essentially a return to the earlier colonial conceptualization of trickle-down theory.

### *Wage Labour Bias*

The implementation by the BSAC of a Native Tax on the African population of Northern Rhodesia has already been mentioned, as has its intention to drive African labour into the monetary economy through wage labour, while at the same time offset the costs of a nascent administration of the territory.

While Alexopoulou and Juif (2017) suggest that the implementation of direct taxation regimes tends to indicate stronger fiscal capacity, in the Northern Rhodesian context this decision would appear to be more a response to local conditions present in the territory. In the early 1990s, Northern Rhodesia had no sufficiently developed productive capacity to utilize an indirect taxation regime, and this position did not really change until significant copper production commenced on the Copperbelt. Given this, a hut and later poll tax on the African population was a pragmatic and economically rational response to need to finance the nascent administrative apparatus. Even in the event of productive capacity, the landlocked nature of the territory and limited access to coastal trade routes restricted the administration's ability to rely indirect taxes in the form of customs and duties (Frankema 2010), a position further hindered by the customs agreements with major trading partners to the south.

Initially, the majority of African labour was forced to migrate to Southern Rhodesia and beyond to meet tax requirements, and this continued to a large extent until the opening of the Copperbelt from the late 1920s. Even after this period, it was not uncommon for in excess of 25,000, and regularly over 40,000, Africans to leave Northern Rhodesia each year to seek wage employment in Southern Rhodesia, Tanganyika or the Congo<sup>22</sup>. In 1936, there were over 50,000 Northern Rhodesia working in Southern Rhodesia and South Africa (Roberts 1976: 191). In 1956, despite the expansion of the Northern Rhodesian copper industry, there were still in excess of 40,000 migrant mine workers in Southern Rhodesia (Roberts 1976: 215).

African employment numbers by industrial sector are available from both the annual Blue Books and colonial censuses, with both sources expected to understate the number of wage earning Africans. Census figures were based on returns from European employers. The genesis of Blue Book numbers for African employment

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<sup>22</sup> Pim, A. and Milligan, S. (1938), *Report of the Commission appointed to enquire into the financial and economic position of Northern Rhodesia*

is unclear, but the close examination of the data suggests a level of estimation and occasional reuse of previous figures over consecutive years. While these deficiencies impact on the specificity of the numbers, there is little reason to argue against using these figures for general inter-sectoral and intertemporal comparisons of levels. The 79,813 figure of Africans in employment in 1931 almost doubled, to 140,776, by the time of the next census in 1946, and while these figures include incoming migrants from neighbouring countries, the overwhelming majority in each case were locals of Northern Rhodesia.

While this growth in the number of Africans in employment is impressive, it needs to be balanced against total population at the time. Estimates from Frankema and Jerven (2014) suggest that the African population in Northern Rhodesia was in excess of 1.8 million in 1931, rising to approximately 2.29 million by 1946. Even accounting for migrants seasonally employed outside Northern Rhodesia, the figures reflect a significant proportion of the African population reliant on subsistence and/or commercial agriculture.

By the 1956 census, 263,132 Africans were recorded as being employed in Northern Rhodesia, with 217,776 of these being of Northern Rhodesian provenance, while a further 42,253 and 402 Northern Rhodesian Africans were recorded as being employed in Southern Rhodesia and Nyasaland respectively<sup>23</sup>. Five years later, the number of Africans in employment had declined according to census figures, with 236,422 Africans employed in Northern Rhodesia, 196,071 of whom were native to the territory<sup>24</sup>.

While Baldwin (1966) indicates the strong ‘push’ factor of the Native Tax tax towards African wage employment, Henderson (1972) argues that relationship is insufficient to explain African involvement in wage labour. While not denying the necessity to seek out monetary income that came with the introduction of the tax, he highlights other ‘pull’ factors, including increased exposure to and desire to acquire European goods, highlighting in particular the fact that voluntary labour migration from Northern Rhodesia to the south had existed prior to the imposition of the tax.

What is clear is that the Native Tax as a proportion of revenue for the colonial administration diminished significantly following increased European settlement and the opening of the Copperbelt. From a high of over 28 percent of revenue in 1926, at no stage from 1941 onwards did receipts rise above five percent of total Government revenue (see Figure 5.4). The critical factor in this outcome was the increase in mining activity on the Copperbelt from the early 1930s onwards, with mining company taxes on local profits (itself only half of the taxable proceeds, the

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<sup>23</sup> FRN, *Census of Population 1956*, (1960)

<sup>24</sup> GRZ, *Final Report of the September 1961 Censuses of Non-Africans and Employees*, (1965)

remainder being transferred to Britain) being calculated as part of European income tax.

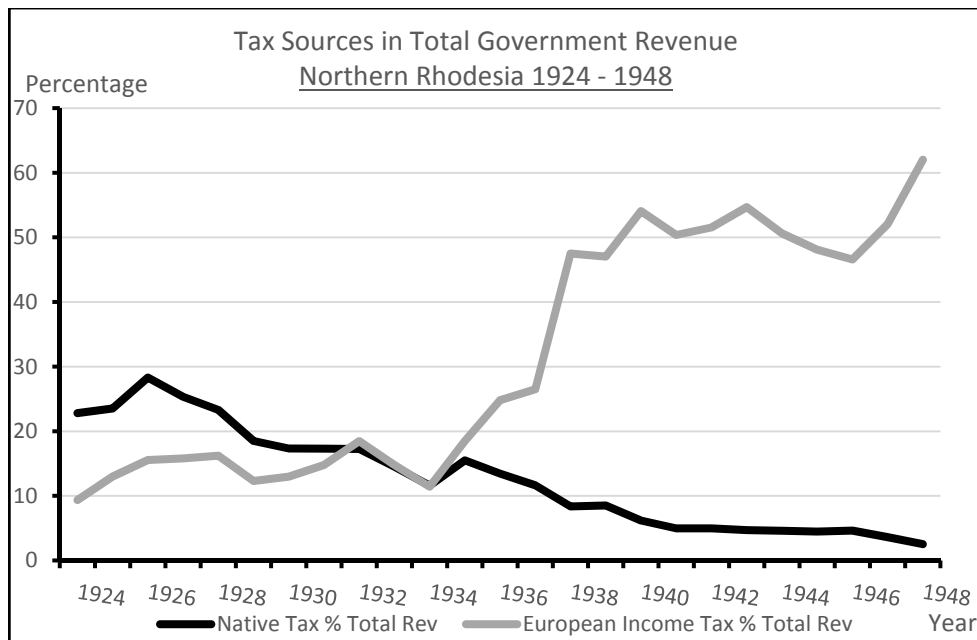


Figure 5.4: Tax Sources as a Proportion of Government Revenue, Author's calculations from data in NR Blue Books

Interestingly, while collections rose in nominal terms from a total of £101,449 in 1924 to £170,620 in 1948, much of this change could be seen to reflect growth in the taxable population, with the Government making little change to tax rates over the 25 year period, even accounting for the Great Depression. Indeed, while a rise in the Native Tax rate in the Copperbelt in 1935 led to strike action being taken, it is clear from Figure 5.5 that during the majority of the colonial period, wages available for agricultural workers (and therefore by default mining workers) were sufficient to cover tax requirements.

At the same time, Gardner (2012, Chapter 3) stresses the blunt nature of the Native Tax regime, with even the differential tax rates adopted by colonial authorities in different regions doing little to consider the ability to pay, while at the same time suggesting the existence of high levels of tax avoidance. The flat rates adopted for regions were a compromise which enabled a form of direct taxation consistent with the administration's very limited knowledge of the local population.

Indeed, while initially focused on developing labor supply and supporting the administration, the decision to limit tax rates allowed for enterprising African farmers to support both their families and tax obligations through commercialized

agriculture. Relying on estimates from the Department of Native Affairs, Deane (1948: 30) suggested as part of the territory's first ever national accounting process that by 1938, Northern Rhodesia included some 37,900 Africans farmers sufficiently commercialized to make their living out of agriculture alone.

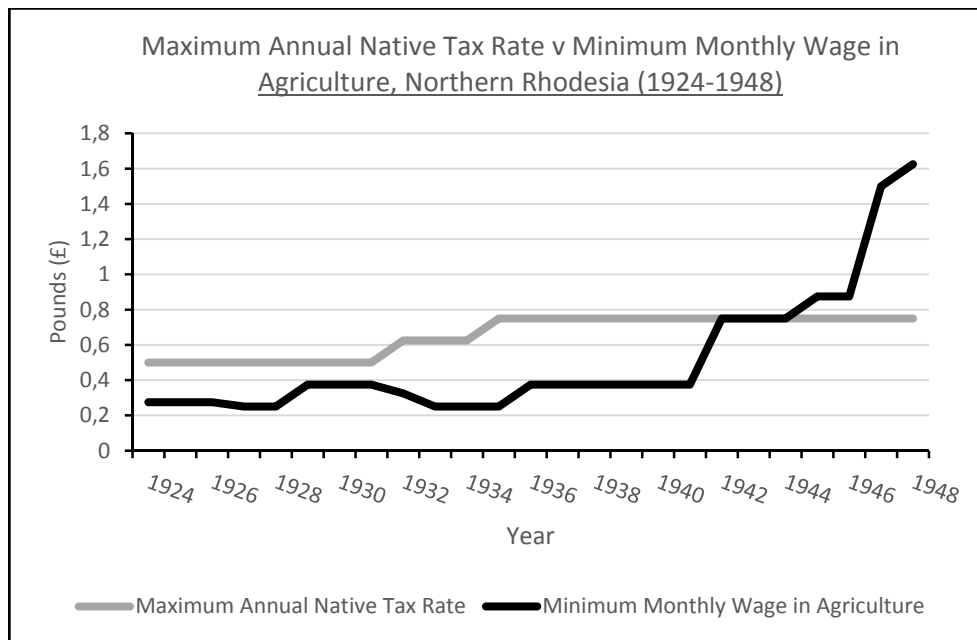


Figure 5.5: Maximum Native Tax Rates compared to Minimum Monthly Wage Rates in Agriculture. Author's calculations from data in NR Blue Books.

### *Urban-Rural Bias*

Throughout its history, the Zambian population has become increasingly urbanized. This urbanization did not occur as a result of increased rural development, based on the intensification of production, agricultural transformation and the release of surplus labor. Rather, the pattern of urbanization emerged from a rational response to colonial taxation policy and the seeking of improved opportunities by individual actors, whereby urban and mining employment provided the potential to provide greater size and consistency in income, at the same time partaking in employment that was of greater benefit at the aggregate level. The outcome of these pull forces, that being a relative vacating of the rural areas, did not – through institutional settings – lead to a widespread consolidation of agricultural production or significantly increased the efficiency of that production within the majority of the farming population. It did however, create a constituency that ensured that successive governments preferred the needs of the country's urban populations

over the development of agriculture and the socio-economic improvement of rural areas.

The urban-rural bias against agriculture throughout the period can be evidenced in two ways: firstly, pricing policies to protect urban consumers and secondly, through distortionary incentives to drive production in urban staples.

The importance of the copper industry in creating an internal market for agricultural products within Northern Rhodesia is undisputed – it is what sustained farmer settlers and what provided the first opportunities for African farmers to enter the market economy. At the same time, the industry dominated the country's exports and the economy generally, its role as the wage leader in Zambia consistent throughout the colonial and early independence era, with the minimum wage for mine workers constantly in excess of three times that of agricultural laborers from the 1950s onwards (see Figure 5.6 below).

Notwithstanding this need to feed the mining sector and ever increasing urban centers, the commercialization of African agriculture was not encouraged by the colonial administration, for fear of limiting the labor migration upon which the mining industry relied. Any efforts to increase the capacity of African farmers put at risk the heavy capital investments in the mining sector. At the same time, the mines' insatiable appetite for agricultural produce created opportunities for surplus-generating African farmers in meeting a demand that for the majority of the period exceeded settler production.

Centralized input provision and marketing of agricultural production was common for staple products from the colonial period onwards, including maize, cattle, cotton and dairy products. While the controlling boards provided a security of input credit and fixed purchase pricing for producers, it would be incorrect to assume that such systems were in place primarily to protect the interests of market participants. Particularly when it came to maize production, upon which a significant amount of Government focus and financial resources were invested, the key consideration was the placation of the internal market – that is, the urban consumers of agricultural products.

In his seminal work on urban bias, Lipton (1977, Chapter 1) is clear to identify 'big' or 'large' farmers as benefiting from urban bias policies, in contrast to smallholders, because as major sellers of food to the urban populace they are best placed to benefit from Government input subsidies and credit arrangements. This was clearly the case in Northern Rhodesia, and is discussed in more detail within the context of a long-standing bias towards commercial agriculture, and that where supports for smallholders were made available, this was done in a limited and deliberate manner.

### *Commercial – Smallholder Bias*

Both Baldwin (1966) and Vickery (1985) note that there is clear evidence that given the right conditions, African farmers in Northern Rhodesia could thrive in the market economy of agriculture, responding to price incentives and available opportunities for improvements. Indeed, so successful were those African producers with sufficient proximity to markets and transport options, that colonial authorities, under pressure from settlers, distorted the market against local producers. The pre-distortion capacity of African farmers to compete at the aggregate level from an early stage is evidenced when comparing marketed maize levels between 1930 and 1935. In this period, European production increased by 25 percent, from 168,000 bags (200 lbs of net weight) to 210,000 bags while African sales to grain traders increased more than threefold, from 30,000 bags to 100,000 bags (Baldwin 1966).

Settlers did not appreciate the competition and as in other colonies in the region, they began pressuring the administration to restrict Africans' opportunities for commercialization. Frankema et al. (2016) show that throughout the colonial era administrations are generally pragmatic in their support of settlers and in cases where the settler sector does not deliver, it can lose its preferential treatment. As the Northern Rhodesian administration depended on commercial farmers to secure food for urban mining centers, however, it continued to support the settler sector. In turn, the settler sector dominated commercial farming and delivered the maize harvest anticipated by the administration.

Settler pressure began mounting on the administration to restrict African access to markets, while additional efforts were also being made to form cooperative arrangements to prevent settlers from involving themselves in a race to the bottom with grain traders. At the same time, the administration was channeling what limited resources it had for agricultural improvement towards settlers at the expense of African producers. One proponent for increased restrictions suggested, "The settler-producers in this country are entitled to local markets and it is the duty of the Government to protect and see that they get them" (Vickery 1985).

A key turning point in the history of Zambian agriculture was the resulting Maize Ordinance of 1936, which saw a newly established Maize Control Board set quotas for the internal market, whereby Africans would produce 25 percent and Europeans the remainder. Any production over internal requirements would be distributed on the international market. However, despite the intent of the policy to protect settlers from competition from African producers, the nature of the internal and external market, including an immediate rise in export prices disguising the internal quota for African producers and a subsequent large increase in the internal market that European producers were unable to satisfy (and in fact necessitated grain imports), the policy never operated to significantly restrict African production. That is not to say that there existed a level playing field, as African producers continued to be



disadvantaged by production prices, being paid up to a third less per bag than settlers (Vickery 1986).

In addition, the pre-sale buying technique adopted by the Board lent itself to conservative estimates, to ensure no losses were incurred. When the oft higher market prices obtained by the Board were received, appropriate supplementary distributions were made to settler-producers, a process deemed impractical for the thousands of African producers. A significant surplus built over time was, in 1949 transferred to an African Farming Improvement Fund (the Fund). By the time of Federation in 1953, European farmers were receiving 40 shillings, nine pence per bag against 27 shillings, nine pence for African producers, the difference being “used to defray marketing costs, the balance being credited to the African Farming Improvement Scheme”<sup>25</sup>, this later being financially supported by the Fund. Successful inclusion in the Scheme resulted in access to a higher maize price than generally available for African maize, subject to meeting specific land management and cultivation practices. Spending from the Fund was otherwise directed overwhelmingly towards conservation efforts (soil and water) and marketing and storage facilities. The operation of the Scheme and Fund will be discussed further below.

Notwithstanding the price discrimination against African producers, Baldwin (1966: 164) demonstrated via rudimentary regression analyses that contrary to prevailing contemporary views on the inability of African farmers to operate successfully in the market economy, whereby they rather favored a target-income approach to total household production, African producers responded to price signals in the same way expected by traditional economic theory, with the share of total production supplied by African farmers positively influenced by the price set by the Maize Control Board.

The introduction of a Cattle Control Board had a similar deleterious impact on African engagement in the sector, one that was more difficult to overcome. A Cattle Marketing and Control Ordinance was introduced in 1937, a year after Africans had provided 67 percent of the slaughter cattle market, up from 50 percent in 1928. Ostensibly focused on encouraging the production of better grades of beef, the Cattle Control Board fixed high prices for better grades of beef, restricted imports of the same and limited price growth for lower grades. The controls had the desired effect, with price increases of 460 percent for high grade beef between 1937 and 1956 indirectly supporting an otherwise uncompetitive European sector, while lower grade beef prices rose only 200 percent over the same period (Baldwin 1966: 158). From an internal market share of 63 percent in 1944, African production fell to 44 percent by 1960.

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<sup>25</sup> NRC, *Department of Agriculture Annual Report for the Year 1953* (1954)

## *Land Bias*

From as early as the first decade of the 20<sup>th</sup> century, administrators were enabling agricultural settlement on freehold terms, with little restriction. Following the replacement of Company control by colonial administration, a more thorough western conceptualization of tenure was formerly introduced in 1928 with the designation of Crown land and native reserves. In Crown land areas, freehold tenure in the traditional European manner was prescribed, and these areas were those reserved for mining and white settlement. In contrast, reserves were vested in the Secretary of State for the Colonies for the sole use by natives in perpetuity, in accordance with customary law.

Chinene et al (1998) suggest that this model was soon found to be unsatisfactory, with Europeans demanding access to greater amounts of land and native Africans concerned with the cramped conditions being experienced on the reserves. As a result, a third category of land was introduced, whereby all unalienated land (that is, not already prescribed as Crown or reserve land) suitable for non-native settlement or mining was brought into an expanded stock of Crown land, with the remainder categorized as native trust land. By the conclusion of this process, and of particular importance for agricultural development, all land within 25 miles distance of the line of rail was prescribed as Crown land, making market access significantly easier, especially when combined with the fact that this land is considered to be good, fertile and far better suited to scaled agricultural production.

Colonial land tenure systems resulted in the majority of land in the rail corridor being made available to a small minority of white settlers operating a commercial agriculture sector. The three-tiered system of land classification incorporated Reserves for the indigenous population operating under customary or traditional ownership; State Land under private leasehold arrangements covering commercial farming, townships and infrastructure; and Trust Lands which were set aside for the common benefit of the population (Moyo et al 1993, Saasa 1987). Through this system, a typical colonial dual economy that essentially saw the exclusion of the majority of the indigenous population resulted, with a relatively developed capitalist sector and an underdeveloped subsistence rural sector, the principal role for which was to act as a labor reserve.

What resulted by way of land segregation at this early stage continued throughout the remainder of the colonial period, and through the early post-independence up until the land reforms of 1975. Saasa (1987) considers the colonial land distribution system as a key to the failure of the emergence of an African agrarian class in Zambia in the years before independence. With much of the State or Crown land distributed on the rail line, and therefore close to markets, Reserve and Trust land could be distributed at distances of up to 600 kilometers from the main artery. This combined to exacerbate the differential agricultural pricing policy already in place.

## **Spillovers: Evolving Markets and Smallholder Opportunities**

Foreign investment in the form of settler agriculture created a significant disruption to existing African communities of Northern Rhodesia following its introduction in the early 1900s and significant expansion from the 1920s onwards. Over the 40 years of colonial administration to 1964, European settlers brought skills, technologies and marketing apparatuses that supported the extension of commercial opportunities to African farmers, despite a series of policy impediments.

In doing so, settlers met an immediate need to fulfil a market demand that African producers could not at that time meet, while progressively creating a series of spillover pathways that would benefit an increasingly market-oriented subsection of the African population. That this subsection of the African population was also latter privileged through Government support mechanisms (while still not being provided with a level playing field) created the basis of the class of emergent farmers that would take on much of the productive capacity vacated by European settlers in the wake of independence and majority rule. However, our assessment of the available evidence will suggest that while supporting the modernization of African agriculture, foreign investment did not transform it.

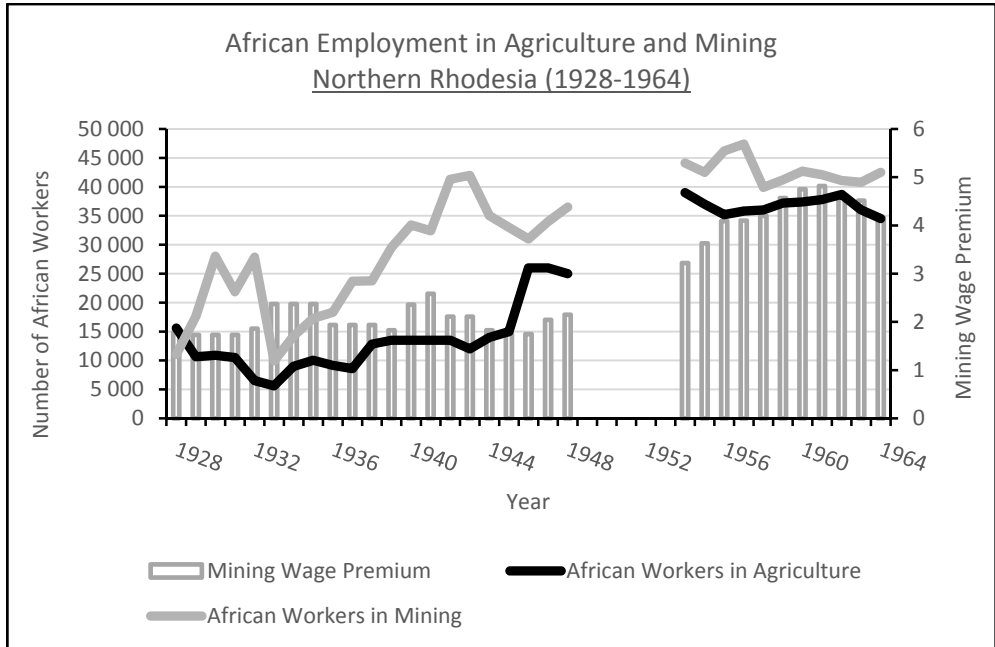
### *Employment Opportunities*

Ahead of the introduction of mining on the Copperbelt, employment on European farms presented an opportunity for Africans to engage in wage employment within Northern Rhodesia itself, without having to migrate to the mining sectors of Katanga, Southern Rhodesia or beyond. The scale of this opportunity in the 1920s was however limited by the size of the nascent European farming sector. One estimate from 1927 indicated that across the 248,948 taxable males within the African population and an estimated 573,398 man months of labour (at 2.25 man months per worker per year), 192,750 was devoted to work within European agriculture, compared to 118,917 within the pre-Copperbelt mining sector<sup>26</sup>.

Even after the commencement of construction of the Copperbelt mines, which included a significant injection of African wage labour beyond that which would be required during normal operations, European agriculture provided a level of competition to mining employment, despite providing far inferior wages and conditions, though there was a degree of diverge in the 1930s before a significant convergence in the post-World War II period. Figure 5.6 compares African employment levels in the two sectors, superimposed with a calculated Mining Wage Premium, which represents the unit multiple of the average mining wage above average agricultural wage, using lognormal distributions).

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<sup>26</sup> NRC, *Colonial Reports – Annual No. 1410, Northern Rhodesia Report for 1927*



**Figure 5.6: African Wage Employment and the Mining Wage Premium. Data from NR Blue Books (1928-1948), Monthly Digest of Statistics (1954-1964).**

This situation was repeatedly perplexing to the colonial authorities, particularly in the early colonial period, as the following series of Annual Report extracts indicates:

Fortunately for the farming community there is still a class of labourer content to put up with longer hours and less remuneration in view of the greater freedom and lack of disciplinary regulations on farms.<sup>27</sup>

There is a class of agricultural natives who prefer to working on farms to any other form of employment and it is believed by men who are in a position to know that this class of natives will only with difficulty be enticed to mining and industrial employment. So long, therefore, as the farming community is confined to the numbers in the territory at present there may be sufficient labour for their needs, but should there be any great agricultural development, farmers may find it difficult to obtain all the native labour they require.<sup>28</sup>

<sup>27</sup> NRC, *Colonial Reports – Annual No. 1470, Northern Rhodesia Report for 1928*

<sup>28</sup> NRC, *Colonial Reports – Annual No. 1516, Northern Rhodesia Report for 1929*

Farm labour though not quite so plentiful appears to have been rather more stable than usual, which is rather surprising in view of the higher wages and more attractive conditions in the mining areas.<sup>29</sup>

And yet this willingness to forego higher wages to work in the agricultural sector is arguably less perplexing if we move beyond simplistic assumptions about economic rationality. In the first instance, agricultural employment was likely to be of greater familiarity to the majority of Africans. Even those who may have previously migrated to work in mining areas, would likely have gained experience in rural communities growing up, especially prior to the urbanization of the Copperbelt. Perhaps just as importantly, farm work provided the very real potential to learn techniques (crops and cropping patterns, implement use, fertilisation methodologies) that could be taken back to home villages to inform local production.

There was also the prospect of working outside, which provided a contrast to mining. While labour migration to the mines in Katanga had been critical for wage employment for many Africans from the northern provinces prior to the rise of the Copperbelt, the transition from the open cut mining undertaken in the Congo contrasted to the more dangerous underground mining in the Copperbelt. Henderson (1972) comments on the difficulty of transition, and the significant initial reliance by the Copperbelt mining companies on Nyasa labour previously experienced in underground mining in Southern Rhodesia.

It is reasonable to suggest that the preference to not engage in underground mining may have seen a leakage of African labour from traditional mining labour reserve areas to the growing commercial agriculture sector. This possibility is strengthened by colonial reports which indicate the crossover between local African producers and agricultural wage labourers may have been limited, with many labourers coming from other areas of the country, while also militating against the knowledge spillover through employment thesis. Milligan (1931: 7) noted that “Labourers, both temporary and permanent, as a rule are not obtainable from the neighbouring villages where the people are themselves engaged in their own agricultural pursuits. They come from a distance and constitute part of the wandering surplus which roams through the country looking for work.”

An official report from the late 1930s supports the idea that local Africans in prime agricultural areas were not part of the major labour migrations to the Copperbelt. The report provide a breakdown of employment on the Copperbelt by mining company and home location, using figures from the previous year. Of the 19,483 Africans employed on the Copperbelt, only 445 came from the

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<sup>29</sup> NRC, *Colonial Reports – Annual No. 1561, Northern Rhodesia Report for 1930*

agriculturally-endowed Southern Province (59 from Mazabuka)<sup>30</sup>. Some caution must however be taken in making too much of these figures, given that the same report also indicates an outward flow of Africans the previous year to the mines of Southern Rhodesia of in excess of 34,000. While the majority of these are likely to have been drawn from traditional labour sources in Barotseland and Eastern Province, there is likely to have also been a flow from Southern Province. Table 5.4 presents the locational sources of mining labour in both the Copperbelt and the Broken Hill areas in the subsequent decade and a half, reflecting the low percentage of mine workers in Northern Rhodesia deriving from Southern Province, and the limited numbers from Central Province, notwithstanding the high percentage of employment in the nearby Broken Hill mining complex.

	Copperbelt			
	1940	1944	1949	1954
Barotse Protectorate	2.95	2.35	1.66	1.67
Central Province	10.22	9.74	9.1	6.39
Eastern Province	8.28	7.7	7.72	8.29
Northern Province	24.86	29.71	27.56	27.77
Southern Province	0.8	0.59	0.5	0.43
North-West Province	14.49	9.91	9.75	9.69
Luapula Districts	21.85	18.79	16.55	15.18
Peri-Copperbelt	5.71	2.46	3.67	2.49
Other Africans and Elsewhere	10.84	18.75	23.49	28.09
<b>Total Employees</b>	<b>29,283</b>	<b>31,515</b>	<b>43,186</b>	<b>52,743</b>
	Broken Hill			
	1940	1944	1949	1954
Barotse Protectorate	2.33	2.45	2.02	1.44
Central Province	54.76	53.95	56.4	46.9
Eastern Province	15.75	15.21	14.14	14
Northern Province	11.55	12.7	14.35	21.41
Southern Province	2.31	2.77	2.16	0.94
North-West Province	4.71	3.49	2.35	2.15
Luapula Districts	2.47	2.02	2.09	2.78
Peri-Copperbelt	1.46	1.2	1.98	1.57
Other Africans and Elsewhere	4.66	6.21	4.51	8.81
<b>Total Employees</b>	<b>4,458</b>	<b>3,755</b>	<b>2,773</b>	<b>2,985</b>

Table 5.4: Origin of African Mining Employees in Percentages. Data from Brelsford (1956:112, 114-115)

Supporting this view, both Dixon-Fyle (1977) and Anthony and Uchendu (1970) indicate examples of local wage labourers along the line of rail utilizing knowledge

<sup>30</sup> Pim, A. and Milligan, S. (1938), *Report of the Commission appointed to enquire into the financial and economic position of Northern Rhodesia*, Appendix VI

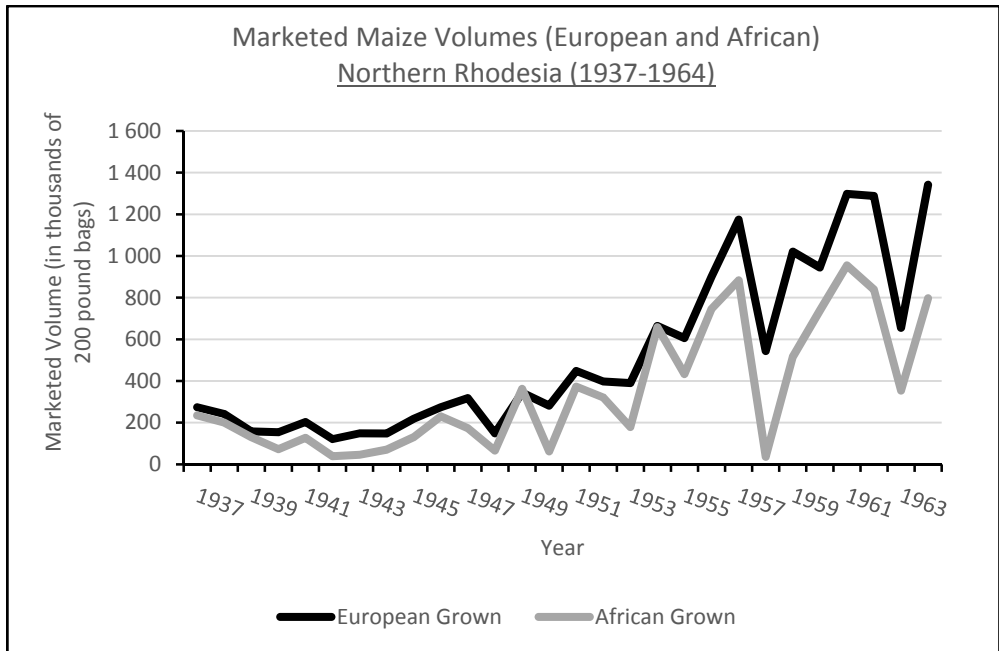
gained working on local European farms, or alternatively investing in capital equipment from the surplus cash income from such endeavours. It is a view shared by Allen (1965) when discussing the emergence of maize farmers on the Tonga plateau. He comments that the emergence “was largely an unaided process which derived from the example of European farming...” by “men of a high standard of education for that time who had acquired knowledge and experience and accumulated some capital by working on European farms” (Allen 1965: 413).

Combined, these sources suggest that spillover channels are likely to have played out in differing ways with differing groups. The pure employment channel (the provision of wage labor) was likely to present more significantly for the migrant workers of Kasemba and Kafue regions, as well as leakage from the northern provinces, where the techniques and production methods utilized by European farming were less likely to be transferrable. For those in the more immediate vicinity of European production, both the employment channel (for capital accumulation) and knowledge spillover channel (discussed in more detail below), are both relevant, in either combination or isolation.

#### *Access Spillovers (Market Creation or Market Displacement)*

Settler production throughout the colonial period principally mirrored that established during the BSAC administration, with a focus on maize production and cattle ranching, supported by limited irrigated wheat production, various attempts at nascent cotton production, and tobacco production for export. Despite the focus on maize and cattle production, and notwithstanding various Government reports indicating the need to diversify farming practices, it is arguable that this focus was an economically rational response by European farmers, based on the factor endowments of the country, the available avenues for marketing production outputs (including limited exports potential) and Government priorities.

Given that maize was a traditional subsistence crop for many African groups of Northern Rhodesia, it is tempting to suggest that the arrival of European settler farmers had a displacement effect on African producers. However, it has already been identified that whether through lack of market experience or lack of desire, local producers were unable to meet the agricultural demands of the early colonial period. With the arrival of settlers, African farmers were provided with access spillover effects which accompanied the development of European agriculture, first through the increased ability to access grain traders which operated in Northern Rhodesia facilitating the provisioning of the mines, and later the introduction of centralised maize marketing facilities, albeit in the differential manner to European producers detailed earlier.



**Figure 5.7: Competition in Maize Marketing 1937-1964.** Based on Barber (1961) using data from the Maize Control Board, Northern Rhodesia (1937-56) and Monthly Digest of Statistics (1957-62)

Notwithstanding Government distortions designed to protect commercial agriculture, data from the period after the introduction of controlled maize marketing demonstrates that competition in maize production was possible for African producers (see Figure 5.7). Maize prices were attractive enough to induce an expansion of African production, taking advantage of the inability of European producers to meet demand (Baldwin 1966: 157). What is also clear is that this competition came primarily from African producers located in close proximity to commercial farmers and, particularly in the post-war period, those preferred by Government incentives.

The figures do however mask issues of quality and capacity. Firstly, it was acknowledged that the quality of African produce was inferior to that produced by European farmers, and that it was rarely graded at the top level. Comparative yield levels were also significantly divergent. Allen (1965: Chapter IV) notes that the rise in African production from the 1950s had much to do with increases to the marketing area by the government, establishing more buying points and the provision of transport, and bringing all households in the line of rail maize-growing area into the system. By 1954, there were estimated to be between 25,000 and 30,000 African maize farming families along the line of rail (Allen 1965: 42). Comparing this estimate to the officially recorded number of European maize



growers throughout the colony in the same year, 850<sup>31</sup>, goes a long way to demonstrating the differential productive capacity of the farming units whose sales are captured by Figure 5.7.

The figure also reflects clearly the greater exposure that African growers had to poor seasons, evidenced by the disproportionate impact most noticeably in the seasons of 1950, 1953, 1955 and most strikingly in 1958. Earlier dispersion of fertilizers, aided by mechanization and access to more robust seed varieties, will have played a key role in this.

Finally, the capacity of African agriculture to further expand was circumscribed by Government policy which, notwithstanding the need for further food production to meet population growth needs, did not seek to officially open unutilized Crown land under European control to African producers, though it was understood that a degree of squatting took place (Barber 1961).

Cattle production was seen as a major opportunity for commercial farming in Northern Rhodesia, limited only geographically by the persistence of tsetse fly across large areas of the territory. The opportunities were easily recognizable, given that indigenous populations, particularly the Barotse and Tonga peoples had a tradition of managing native cattle herds. An early trade in slaughter cattle to the Katanga mines led to an increase in cattle ranching in Southern and Central provinces, and the opening up of the Copperbelt created a local market for meat.

Stocks of European cattle, considered to be of significantly superior quality to the indigenous cattle, continued to grow throughout the colonial period, as did their African equivalents (see Figure 5.8). However, offtake rates were considered relatively low. Milligan (1931) estimated that some 23,072 head of cattle were utilised within Northern Rhodesia, of which only approximately 15,000 were supplied from within the territory. This trend continued in the period following the Great Depression, with imports of cattle for slaughter between 8,200 and 10,400 in the first half of the 1940s, and more than doubling to over 20,000 from 1947 with the growth of the Northern Rhodesian population.

The opportunities available for African engagement in the European cattle market were obvious, with European production unable to meet demand. It has already been noted that African producers were successful in supplying 67 percent of the market by 1937, prior to market distortion. Yet while limiting African supplies and the prices available, the distortionary policies in no way devastated African animal husbandry, the significant decrease in market share must be seen in line with a large overall increase in demand, with the number of cattle slaughtered increasing by 93.7% between 1955 and 1964<sup>32</sup>. Beyond the differing stock qualities Allen (1965, 421-22) also indicates the difficulty faced by many Africans in integrating cattle

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<sup>31</sup> FRN, *Monthly Digest of Statistics*, Federation of Rhodesia and Nyasaland, *Special Supplement: European Agriculture in Northern Rhodesia 1954-55 Season*, September 1956

<sup>32</sup> FRN, *Monthly Digest of Statistics*, December 1959; GRZ, *Monthly Digest of Statistics*, June 1965

into a true mixed farming enterprise, given that grazing lands remained in communal ownership. The result therefore was that despite significant numbers of cattle in African hands (see Figure 5.8), for many the main role of cattle was in the provision of draught power and manure fertilizer, and subsistence purposes. This was certainly the case in the most productive African agricultural areas, and in particular on the Tonga plateau (Allen 1965: 421f).

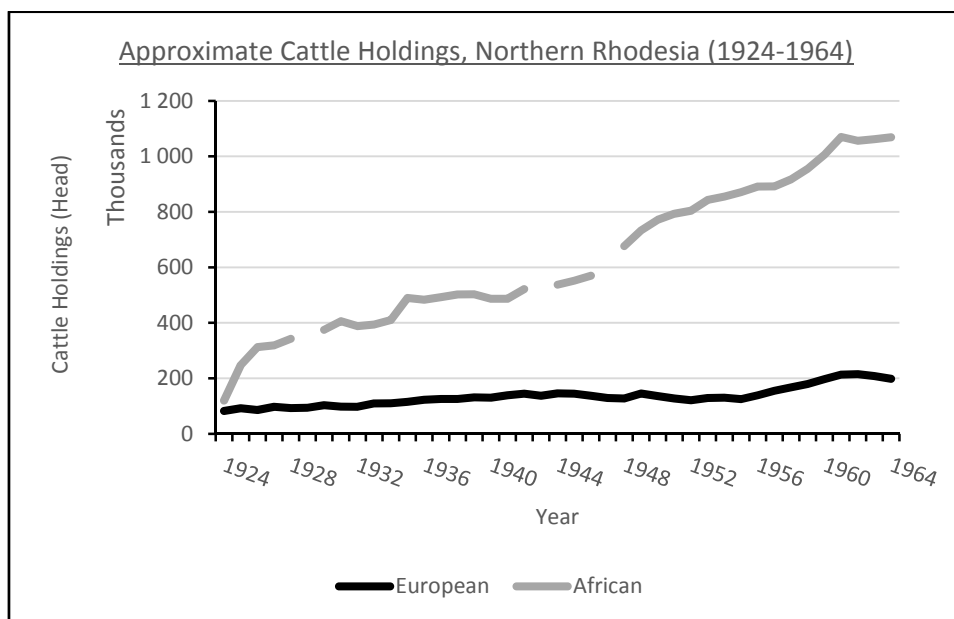


Figure 5.8: Comparison of European and African Cattle Holdings 1924-1958. Data from NR Blue Books (1924-1948) with significant African outliers removed, Monthly Digest (1949-58), Agricultural Production in Zambia 1964 (1959-64)

A significant example of market displacement was the structural impediments placed on the production of indigenous (*nyoka*) tobacco varieties, which had been sold via European traders in the late BSAC and early colonial administration periods. While not even a direct competitor to the Virginia tobacco being grown, significant export duties were placed on the product from the mid-1920s, as such production put at risk labor supply to settler tobacco farms (Kanduzi 1983). It is noted that such restrictions were not uncontested within the administration at the time, given the potential for this *nyoka* production to support Native tax payment. While the widespread marketing of *nyoka* effectively dies out, the government later introduced and encouraged production among Africans of Burley tobacco in the east of the colony.

### *Access Spillovers (Export)*

Available evidence suggests that foreign investment in Northern Rhodesian agriculture played little part in opening access to export markets for African agriculture. To a large degree, this was a result of the limited export orientation of much foreign investors, though the latter colonial period saw some export opportunities open for African tobacco cultivators, significantly in production that did not compete directly with the most lucrative settler production.

We have already identified an overwhelming focus of foreign production on maize and cattle, as well as the limited production of wheat, tobacco and other commodities. With the strong internal demand for maize and cattle products, combined with Northern Rhodesia's landlocked location, there appeared little scope to export surplus production and little appetite to produce cash crops for the European and South African markets. Given the infrastructure and communication channels of the time, this local focus and the shunning of any serious export-orientation in agriculture strikes as an economically rational response.

While a focus on the internal market would seem efficient, no great strides were made to diversify the economy to produce import substitution products, such as butter. Nor was production in staples for the internal market sufficient to drive an export oriented surplus for the majority of the period. In the area of maize alone, in which so many productive resources were invested, Northern Rhodesia was a maize importer for significant periods, particularly in the rearmament-driven pre-World War II expansion of copper production. Elsewhere, improvements in cold storage technologies enabled the supplementation of local production with imported meat products from Southern Rhodesia and the Union of South Africa.

From the point of view of available markets, it is arguable that Northern Rhodesian producers held a competitive advantage only in supplying any markets beyond the Copperbelt and the Katanga mines. To the south, the far greater maize and cattle production taking place in Southern Rhodesia limited access to that market and its mines, and placed Northern Rhodesian producers in a disadvantageous trading position to the Union of South Africa and beyond, even in a situation where surplus production could be marketed for export. Even for Katanga, where in the first two decades of the century Northern Rhodesian suppliers held sway, Kanduzi (1979) spends some time in identifying the role of rail freight charges on Rhodesian Railways which had the effect in the 1920s of increasing competition from Southern Rhodesia, stymieing further development of the Northern Rhodesian commercial sector at a critical juncture of its development<sup>33</sup>. These constraints were only overcome by protective measures put in place by the

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<sup>33</sup> The Katanga market itself was compromised from 1928, at which time the establishment of a new railway from Katanga to Kasai encouraged Belgian colonial authorities to rely on internal production sources, rather than produce from the Rhodesias (Miracle and Fetter 1970).

Northern Rhodesian administration in the 1930s, including increased tariffs on Southern Rhodesian imports. This is an example of the significant way in which the Northern Rhodesian economy was intertwined with, and in many respects beholden to, that of its southern neighbor, that would see significant debate around the closer integration of the two territories, and which would eventually lead to federation in 1953.

But beyond the political connection between the two, a simple comparison demonstrates the significant difficulty faced by the Northern Rhodesian commercial sector in driving an export orientation through its principal production lines. In short, not only was the Southern Rhodesian agricultural sector far better located to take advantage of export opportunities in the Union of South Africa and beyond, the significantly larger scale of the sector, even in its direct competition, dwarfed that to the north.

By 1928, Southern Rhodesia already had 2,099 self-reporting European maize producers, out of a total of 2,912 commercial farmers, 359 of which grew only maize<sup>34</sup>. By 1950, Southern Rhodesia had 3,841 European maize producers, out of a total of 5,054 commercial farmers, 449 of which were maize only specialists<sup>35</sup>. The comparison with Northern Rhodesia is stark. The Northern Rhodesian census of 1931 identified 592 Europeans working in the agriculture and forestry sector, out of a total European population in the territory of 13,846. By the 1946 census, this number had increased to only 648, though this number doubled again within the next decade.

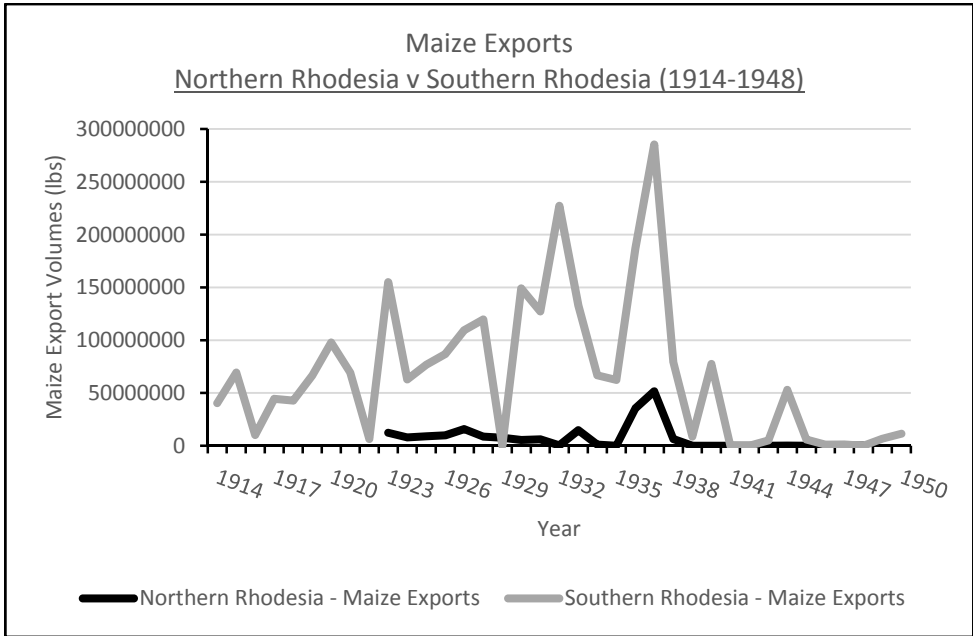
Figures 5.9 and 5.10 demonstrate the significant disparities between the scale of Southern and Northern commercial agriculture and critically, indicate the difficulties that Northern Rhodesia faced in seeking to drive an export-orientation. Significant maize export markets for Southern Rhodesia included the United Kingdom and the Union of South Africa, while it is also important to note that Southern Rhodesia maize exports exclude maize meal exports, which exceeded 1,000,000 lbs per annum for all but three years between 1924 and 1948.

A comparison of cattle holdings among European farmers in the two countries reflects an even starker differential in terms of the scale of the sectors. In terms of total cattle holdings, Southern Rhodesia holdings by Europeans were estimated to represent around one third of the total, while the Northern Rhodesian equivalent generally fluctuated around one fifth.

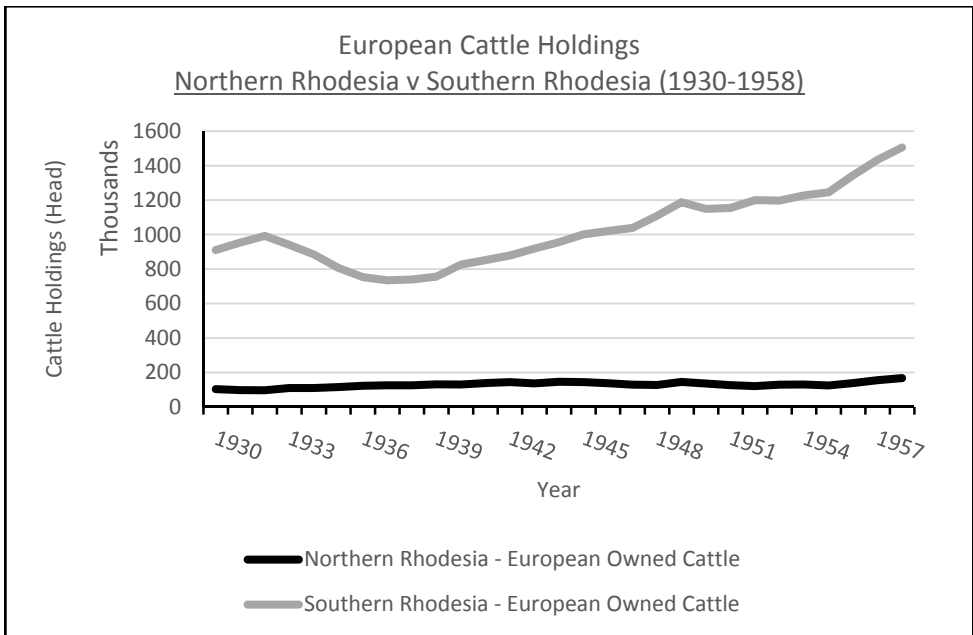
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<sup>34</sup> Southern Rhodesia Yearbook 1930

<sup>35</sup> Southern Rhodesia Yearbook 1952



**Figure 5.9: Comparison of Maize Exports, Northern Rhodesia and Southern Rhodesia. Data from NR Blue Books and SR Yearbooks**



**Figure 5.10: Comparison of European Cattle Holdings, Northern Rhodesia and Southern Rhodesia 1930-1958. Data from NR Blue Books and SR Yearbooks and Monthly Digest of Statistics**

In the early years of the Colonial administration in Northern Rhodesia, cattle exports for slaughter, particularly to the Katanga mines were seen as a key opportunity for the settler community. However, the Katanga contract was captured by Southern Rhodesian producers (Milligan 1931) and even at the height of Northern Rhodesian trade, which collapsed entirely after 1933, exports from Northern Rhodesia were significantly below those from Southern Rhodesia.

Out-produced in its principal production areas by its larger southern neighbor, Northern Rhodesia was also restricted in following a cash cropping strategy by better placed competitors. Where the territory had had success with export tobacco production, this paled compared to what was occurring to the south and east, where the crop was being grown successfully in significantly larger quantities by commercial farmers in Southern Rhodesia and integrated African smallholders and Nyassaland respectively. To the northeast, coffee, which had been grown to a limited extent in the northern provinces of Northern Rhodesia, was being produced on a wide scale in the British controlled territories of Tanganyika and Kenya, both of which had superior access to coastal trade routes. Given the prevailing agro-climatic and geographic situation, the options provided by cash crops were limited. A situation of mixed farming with a focus on the growing internal market was proposed as a solution, in which European farmers would focus their efforts on improved cattle and dairy production, vacating the production of maize to African producers (United Nations 1964). However, beyond a gradual shift away from monocropping with the introduction of tobacco on the line of rail, very little changed throughout the colonial period.

At the same time as hosting a significantly smaller population and presenting a smaller productive capacity than Southern Rhodesia, Northern Rhodesia also remained to a large extent beholden to its southern neighbor, with a political settler class giving constant consideration to balancing the merits for and against increased political integration and a trade imbalance significantly weighted towards Southern Rhodesia. While settler farmers and mining interests feared the risks of losing the ability to control labour migration at a time when wages remained significantly higher in Southern Rhodesia and beyond, those along the line of rail were also conscious of the significantly greater racial imbalance that existed in Northern Rhodesia, the increasingly vocal position of the British Government towards African agency and the geographically imbalanced Northern Rhodesian economy with vast tracts of seemingly unproductive territory. It is perhaps indicative of such a position that in the period prior to the establishment of the Federation, serious consideration was given amongst some settlers to the transfer of the line of rail provinces to Southern Rhodesia, with the resulting eastern and western regions of Northern Rhodesia taking on some form of protectorate status in a similar vein to Nyasaland and Bechuanaland (Henderson 1972; Channock 1977). That this did not occur has much more to do with foreign relations between the United Kingdom,

South Africa and Southern Rhodesia than any consideration of a unity or financial capacity of the Northern Rhodesian colony.

In circumstances where there were limited opportunities for Northern Rhodesia to compete internationally, and where policies were biased towards the small settler community, African agricultural producers had little opportunity to benefit from export agriculture. It was only in the production of the less capital-intensive, air-dried tobacco varieties that African smallholders had the capacity to directly compete for export opportunities, and even here they faced potential discrimination from the small proportion of settlers producing these product. It was not until the late 1930s that the government began to support the production of tobacco by Africans, this being the introduction of Burley tobacco to the Eastern province (Kanduza 1983). Turkish tobacco, primarily for the United States market, was also produced by African producers, where there was limited European competition (see Table 5.5 for late colonial production comparisons).

	Burley Tobacco Sales (lbs)		Turkish Tobacco Sales (lbs)	
	Non-African	African	Non-African*	African
<b>1960</b>	570,000	66,080	237,000	217,372
<b>1961</b>	751,000	250,280	112,000	194,052
<b>1962</b>	1,326,000	300,134	19,000	252,547
<b>1963</b>	2,169,000	1,015,000	16,000	290,000
<b>1964</b>	1,776,000	1,740,000	2,000	653,000

**Table 5.5: Sales of Burley and Turkish Tobacco. Data from Agricultural Production in Zambia 1964 (1965). \*crop reaped, not sales**

### *Knowledge Spillovers*

It has been previously articulated how the potential for knowledge spillovers to occur, proximity is important, providing the opportunity to observe new and different techniques of production, and thereby seek to replicate them. The district of Mazabuka, already identified as a key production district for settler agriculture, provides a good example of the ability to benefit from knowledge spillovers. Close to the line of rail and adjacent to heavily producing European commercial farms, the African farmers of Mazabuka represented one of Northern Rhodesia's most commercialized groups. Already with a history of being agriculturalists of maize, millet and sorghum, as well as limited cattle rearing prior to European settlement, the Tonga people of the region were well placed to take advantage of the spillover channels presented by the arrival of European farmers and extended access to markets. In this regard, they exhibited what our analytical framework identifies as good absorptive capacity.

In the late 1930s, the Tonga plateau was already providing approximately 80 percent of African maize being marketed and two thirds of the African cattle. By

the closing years of the African Farming Improvement Scheme, it farmers represented almost half of total participants, this number being approximately 10 percent of the total number of farmers in the local area's native reserves (Anthony and Uchendu 1970). This large proportion of Scheme participants represented by the farmers of Mazabuka provides clear evidence of two things – the increasingly market-oriented nature of African farmers in the region willing to respond to price signals and incentive programs, and the overwhelmingly limited geographical coverage provided by the Government's African farming improvement initiatives.

Already by the late 1920s there were a number of larger scale African farmers on the Tonga plateau, though the majority operated on a smaller scale cultivating an average of about six acres (Dixon-Fyle 1977), placing these within a modern definition of small farm (less than 5 hectares).

The rapid post-war expansion in mechanization of African farming is well illustrated in Mazabuka. A significant increase in the number and type of farm implements adopted by Mazabuka farmers was identified during the period of the Scheme. Anthony and Uchendu (1970: 229-230) reflect on two surveys conducted in 1945 and 1953/54 to demonstrate an increase in the number of plows being utilized by Mazabuka farmers across both 'improved' and unimproved/subsistence farming classes. For 'improved' farmers, the 1950s saw the opportunity to take loans for specified capital purchases, and in the three final years of the decade more the £10,000 each year was loaned to Mazabuka farmers to support the purchase of scotch carts, cultivators, ploughs and tractors. In 1955, there were 55 tractors owned by African farmers in the entire Southern Province. By the final year of colonial rule (1963), there were 88 in the Mazabuka district alone (Anthony and Uchendu 1970: 242). This was from a total of 350 tractors in African ownership across the entire territory, contrasting with 2,400 across the 1,100 European commercial farms.

Evidence from the Scheme in Mazabuka provide support to the traditional development view of that smaller farms are more efficient. A survey in the mid-1950s demonstrated that those improved farmers cultivating 15 acres or more of maize were averaging yields of and 1.7 bags per acre, compared with the average yields in excess of 3 bags per acre for those cultivating less than 15 acres. Importantly however, the same survey indicated that the scale economies involved in such production resulted in larger farmers (those that would today be classified within the Zambian definition of medium-scale) attaining larger farm incomes despite the sacrifice being made to lower productivity, as measured in yield (Anthony and Uchendu 1970: 229).

Meanwhile, cash incomes for some Mazabuka farmers had grown to such an extent that they were sufficiently well placed to take advantage of off-farm investment opportunities, with examples provided including the purchase of trucks to support transport contracting, and the establishment of shops and tea houses (Anthony and Uchendu 1970: 245).



Knowledge spillovers in tobacco production were initially restricted, with Africans barred from operating as independent producers and therefore benefiting from the knowledge garnered while working on settler farms (Kanduza 1983). With the government encouragement of African Burley tobacco production in the east of the country from the late 1940s onwards, the opportunity for those previously employed as wage laborers on settler farms to put into practice what they had learned as independent producers was made open.

### *Mediating Factors – Spatial Proximity and Absorptive Capacity*

The evidence available indicates that the mediating factors outlined in our analytical framework played a significant role in determining the effectiveness of spillover opportunities for African agriculture.

The differentiation of the African agriculture sector already in place based on location and access to marketing opportunities was further enhanced by the operation of the African Improved Farmer Scheme. The Scheme was initially piloted on a small scale in Southern Province and following success, the Scheme was later rolled out in Central Province and finally, to a limited extent in Eastern Province. Despite higher prices available to African farmers, it has been argued that the focus of fund allocations was not on increasing production but rather on soil and water conservation, primarily on land adjoining settler farms (Vickery 1986; Makings 1966), as further protection for European farming interests. The locational limitation to the Scheme, which led to further spatial concentration of agricultural capacity along the line of rail, could only have enhanced this perception. Perceived or otherwise, this accent of European interest had an adverse impact on initial African participation, principally for the belief that such land improvement activities represented a precursor to further appropriation of African agricultural lands, a position held by some African nationalist organisations (Dixon-Fyle 1977). While possible, such a view gave little consideration to the fact that existing European farming lands continued to be underutilized, while significant areas of Crown land remained entirely unoccupied.

In the operations of the Fund, we have both the lens through which to reflect the changing policy approaches to subsistence agriculture in the late colonial period and the seeds of the African commercial class that would fill some of the void left by European farmers in the post-independence period.

From the commencement of the improvement scheme in the late 1940s, the number of improved farmers rose from less than one hundred in the first year to more than 700 by 1952, 1,000 in 1955 and to over 3,000 in 1960, with the participation in an accompanying peasant scheme rising from 651 to 2,443 between 1955 and 1960 (Makings 1966). The support to this group of 'improved' farmers sowed the seeds of the agriculture sector that emerged followed the withdrawal of a significant proportion of European farming families in the post-independence era,

which by the late 1960s had declined in number to around 450 (Wilson 1971). While the increase from a zero base in the late 1940s to the position in 1960 seems impressive, this must be compared against a general population by this time of over three million, of which only around 80,000 were non-Africans. Notwithstanding the African mining workforce, this left a significant number of subsistence farmers outside the government support system.

In this latter scenario, those in focus were the improved or progressive farmers already exposed to the benefits of the Fund and Scheme. Spending from the Fund was directed overwhelmingly towards conservation efforts (soil and water) and marketing and storage facilities. In 1951-53, only some 17 percent of Funds were expended on Scheme bonuses, reflecting in part the limited number of farmers qualifying as 'improved'. In this it can be seen how the operation of the Fund and Scheme functioned in a form of cross-subsidisation, benefiting commercial famers through general land conservation efforts, 'improved' African maize producers through price incentives and free-riding African producers of non-maize crops or cattle (an equivalent program for African cattle husbandry was not instigated until 1956). Disproportionately impacted were the 'unimproved' maize farmers, who while required to pay Fund and transport levies at the point of sale, were unable to access the price incentives available for 'improved' farmers, which had the potential to raise the equivalent per bag price for maize above that being obtained by European producers (Makings 1966).

<i>Year</i>	<i>Price per 200 lb Bag (£)</i>	<i>Levy per 200 lb Bag (£)</i>	<i>African Cash Price (£)</i>	<i>Bonus per Acre of Improved Land (£)</i>
1949	1.18	0.28	0.90	0.75
1950	1.33	0.28	1.06	0.90
1951	1.58	0.31	1.26	1.05
1952	1.78	0.41	1.36	1.13
1953	1.86	0.50	1.36	1.25
1954	1.88	0.48	1.40	1.35
1955	1.84	0.48	1.36	1.35

**Table 5.6: Financial Implications of African Farming Improvement Funds and Scheme 1949-1955, with price after flat-rate transport charge of 3s 6. Author's calculations using data from Makings (1966)**

Further reinforcing the increasing differentiation amongst local producers in the post-war years were the technological advances arising from the green revolution that could only be taken advantage of by those already of a sufficient scale. This is well articulated in the case of the SR-52 maize variety, which was the culmination of maize-breeding programs that had been underway in Southern Rhodesia since the early 1930s (Howard and Mungoma 1996). Introduced in 1960, the capacity of the new strain far exceeded existing varieties, but required specific sowing patterns that only mechanized farmers using tractors could accomplish. Its success also relied on regular and heavy use of fertilizers, not readily available to smaller producers. The

new strain however, enabled commercial producers and those more advanced African farmers to increase yields fivefold (Vickery 1986, Scott 1995), further separating the commercial and ‘improved’ or emerging classes from the overwhelming majority of subsistence farmers. The Scheme was brought to an end in the final years of colonial rule, as rising costs from increased participation and a reduction in Government revenues following a fall in copper prices in the late 1950s made continuation uneconomic. Dixon-Fyle (1977), reflecting upon contemporary parliamentary debates, indicates that the Government’s intention was to reach a critical mass of ‘improved’ farmers prior to Scheme cessation, further reinforcing the view of support mechanisms being specifically targeted.

## Conclusions

Overall, the colonial period saw an expansion in foreign investment in agriculture in Northern Rhodesia, driven by the growing demands of the increasingly urbanized mining developments on the Copperbelt. Heavily concentrated along the line of rail, this expanding foreign settler sector was insufficient to meet the needs of the internal market, which continued to grow throughout the colonial period. This void was filled via imports and increasingly via a more structured, integrated and commercially-oriented African agriculture sector, restricted principally to the centrally-located development corridor running from the Copperbelt in the north to Livingstone in the south (refer Map 5.2).

The concentration of foreign investment, which we expected based on our theoretical understanding, had an impact on the ability of local agriculture actors to benefit from it. The experience in Northern Rhodesia is such as to suggest that knowledge spillovers were prevalent, that the introduction of European agriculture played a role in increasing market access for African producers (albeit in a restricted form), and that capital accumulation by African producers, either through the marketing of surplus production, the supplementation of farm incomes via wage labour, or for a limited number, the benefit of government financial incentives for capital investment, increased throughout the colonial period. What is also evident is that those African producers that prospered were more likely to do so when located in close proximity to existing commercial farmers, not simply because of local factor endowments (land and infrastructure) but also because the scarce resources and limitations of Government intervention saw these preferenced in a virtuous circle that further distinguished them from the country’s remaining subsistence producers. Here, we clearly see the mediating factor of spatial proximity at work.

At the same time, not all African farmers located near settler agriculturalists became commercial farmers, nor was every farmer within the specified districts eligible for the Government support programs. We thus see evidence of the

mediating factor of absorptive capacity at play, where those African farmers already better placed than their neighbours were provided with opportunities to improve their situation, further differentiating the African agriculture sector. Thus, even along the line of rail corridor which formed the focus of foreign investment, we see settler agriculture leading to a modernization of African agriculture, but not its transformation (in the sense of Timmer 1988).

It would be easy to criticise government agricultural policy with respect to African agriculture, whereby European settlers were preferred and protected from open competition with African producers (not to mention protection from imports), and where what belated assistance was provided, was limited to areas of existing African commercialization. However, without downplaying the extent of the biases faced by African producers, an alternative appraisal of Government policy is warranted.

Northern Rhodesia had a limited Government apparatus. As we have already identified, what limited resources that were available to agriculture were overwhelmingly targeted to the politically powerful settler farmers. In this context, it seems reasonable, and indeed economically astute, to devote what limited resources that were available to African agriculture towards those areas which were likely to have the biggest return on investment. With price and production incentives, it seems logical to target these overwhelmingly towards the production of staples products in high demand within the home market, those being maize and cattle. Given the nature of the markets in question and the quality of transport infrastructure during the colonial period, this production remained focused along the line of rail, and the emphasis of the African Farming Improvement Scheme on the Southern and Central provinces seems appropriate.

The limited extent of these programs given the overall number of African smallholders within the Territory can also be criticized, though the Scheme was designed to provide a demonstration effect, the beneficial results expected for Scheme participants from the modern conservation and cropping techniques anticipated to be adopted by other farmers. With extension services, it seems logical, if not equitable, that these efforts focus on more accessible areas. Areas of significant population density beyond the line of rail were extremely remote and connected by poor infrastructure (principally unsealed roads with restricted use in wet conditions), while the knowledge and capacity of extension officers was routed in the European tradition, albeit within African conditions.

In order to maximize the return on its investment during the early stages of development for Northern Rhodesia, the BSAC had two options for developing a viable commercial agriculture. It could look to the local African population or encourage the immigration of settlers. It determined on the latter option. It is impossible to know whether in the absence of European settler agriculture, local African production would have risen to meet the demand challenge posed by the growing colony, especially following the opening of the Copperbelt, and what initial

investment by way of improved infrastructure and marketing facilities may have been required. What we do know is that when given the opportunity, African producers in colonial Northern Rhodesia were able to take advantage of systems in place to produce in a commercially-oriented manner and compete with European producers, despite an uneven playing field. Those that benefited most were those best placed to take advantage of market access and technological improvements that come with proximity. However, proximity in and of itself is insufficient, and the ability to profit from the new opportunities relied on a level of absorptive capacity of market participants. Meanwhile, despite infrastructural barriers to success, Burley tobacco farmers in the east of the country were able to profit from the export access opened by settler agriculture, making a relative success of production where a generation of European producers failed.

The following chapters, focusing on the early independence era and the multi-party democracy period from 1992 onwards, will look to determine whether our findings from the colonial era are mirrored in the modern experience. In doing so, we will assess whether there is a colonial heritage to the modern form of foreign investment in agriculture, with particular reference to the sources of that investment and its location, and whether this presents evidence of a path dependency or a structural break from the development corridor that evolved in the colonial period.



# 6. 'Zambianisation' and Commercial Agriculture in the First and Second Republics (1965-1991)

## Introduction

This chapter takes as its focus the early post-independence history of Zambia, from the birth of the new nation through the major political and economic upheavals of the 1970s to the fall of the one party state of President Kenneth Kaunda in 1991. As world market copper prices continued to soar in the mid-1960s, the new Government sought to redress perceptions of an overly influential foreign element in Zambia's economic success, and looked to implement an ambitious social development agenda through increasing the role of the state in the management of the economy. This agenda was undermined by a subsequent fall in the world price for copper, rising debt levels associated with a burgeoning public sector and the increasing costs of maintaining a highly subsidized agricultural sector designed to provide low cost food to the country's increasing urban population. The chapter assesses the impact of the Government's role in influencing the foreign investment environment, and how commercial agriculture developed as a result.

Such an assessment demonstrates that a combination of Government policy settings conspired against an increase in foreign investment in agriculture, despite never explicitly prohibiting it. Where foreign investment in agriculture did occur, it tended to have a developmental focus. As a result, the identifiable changes in commercial agriculture evident throughout the period reflect to a large extent responses to the direct intervention of the state. At the same time, we observe a clear continuation of the previously observed phenomenon that African agricultural producers, smallholders and large farmers alike, respond directly to price and production incentives. In the identified absence of any significant foreign investment, we seek to assess the development of commercial agriculture in reflection to our analytical framework. The final section concludes.

# Assessing the Absence of Foreign Investment

## The Macroeconomy

At independence in 1964, Zambia had one of the highest per capita incomes in Africa (at \$1,523). But this masked an extremely uneven economy on the one hand, and a relatively low population on the other. Over the following decades, the collapse of the world price of copper, which coincided with the nationalization of Zambia's copper industry, and population growth consistently in excess of three percent per annum, meant that by 1991 Zambia was a very different place. The country's population had increased by 239 percent, the percentage of the population living in urban areas had grown from 22 percent to 39 percent, yet GDP per capita had declined by 33 percent to \$1,018.

In the years immediately following independence, and buoyed by continued high export revenues as a result of world copper prices, Zambia's inaugural president Kenneth Kaunda<sup>36</sup> began a process of *Zambianisation* in the economy, in which the government sought to wind back the significant influence of foreign capital. Following the Mulungushi Reforms of 1968, which led to the government procuring a controlling stake in the country's major mining interests, the process of *Zambianisation* continued, principally in the industrial sector and in the development of some large scale agricultural projects<sup>37</sup>, funded by continued high copper export prices. In December 1973, by which time the First Republic had given way to the one party state of Kaunda's Second Republic, 14,900 of 33,610 (or 44.3%) formal employees in the agriculture sector were employed in the public sector<sup>38</sup>.

The Government sought to adopt a general import substitution policy, guided overwhelmingly by Government control. By the time of the collapse of the one party state in 1991, Government parastatal entities controlled approximately 80 percent of economic activity in Zambia<sup>39</sup>. As was the case prior to independence, Zambia continued to be significantly exposed to international commodity prices and exchange rate fluctuations, the latter being heavily tied to the former in Zambia's case given the overwhelming domination of the copper export industry. Thus, while copper prices remained high, the Zambian economy ostensibly remained strong.

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<sup>36</sup> Kenneth Kaunda ruled as the first President of Zambia from 1964 until 1991

<sup>37</sup> Drawing from Lukanty (1990), these large scale agricultural projects included the Nakambala Sugar Estate in Mazabuka, coffee and tea plantation schemes introduced in Northern and Luapula provinces respectively; and the Mpongwe wheat scheme

<sup>38</sup> GRZ, *Monthly Digest of Statistics*, April-June 1979

<sup>39</sup> *Investment Policy in Zambia - Performance and Perceptions*, CUTS 2003



The *Zambianisation* process did not expressly prohibit foreign investment in the Zambian economy and in agriculture in particular, there was no impediment to foreign investment. However, it could be readily anticipated that in the wake of the *Zambianisation* process, foreign investment in agriculture would be low, given the very real risk of expropriation and/or nationalization by the Government, as had occurred so prolifically in the mining and industrial sectors. That this risk was real is reflected in the legislation enacted in the dying days of the one-party state at a time when foreign investment was so desperately needed to stimulate the economy, whereby the *Investment Act 1991* incorporates specific legislative safeguards against expropriation (Ngenda 1994).

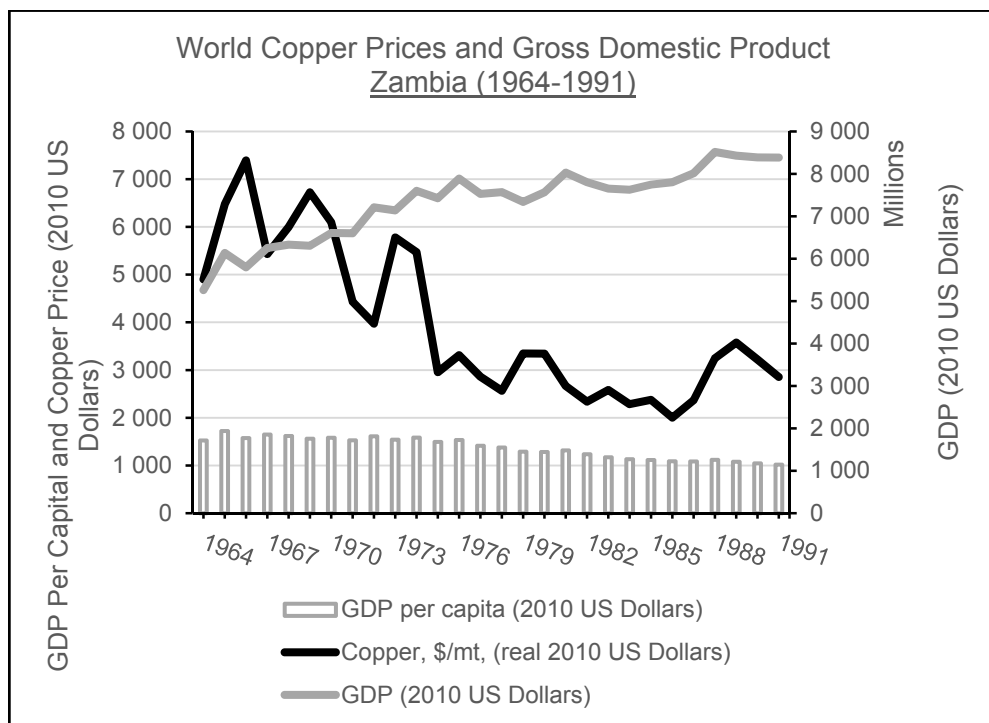


Figure 6.1: Impact of the 1975 Copper Price Crash. Data from World Bank

Copper prices did not remain high, and the crash in copper prices in 1975, followed by a relatively sustained decline over the following decade supported a stagnation in the country’s GDP which, when combined with continuous population growth, resulted in a reduction in GDP per capita. This outcome is clearly articulated in Figure 6.1. Coupled with high external borrowing to support its *Zambianisation* policies, the Government faced significant financial difficulties in the early 1980s.

Macroeconomic performance declined to such an extent that in 1985, Zambia was reclassified by the United Nations from a low-middle to low income country<sup>40</sup>.

Despite the intent of an import substitution policy, the country remained reliant on imports, the sources of which were not necessarily consistent with the nation's high profile anti-apartheid position. While trade with Rhodesia diminished significantly, South Africa remained a critical partner, despite its contrasting political positions in a range of regional conflicts. In 1980, following 15 years of independence, and despite the excesses of the apartheid regimes to the south, 38 percent of Zambian imports were from the United Kingdom and South Africa (Simson 1985: 59). Five years later in 1985, these two countries still made up 38 percent of imports while in comparison, the combined imports of the key industrial nations of United States, West Germany and Japan accounted for less than 19 percent<sup>41</sup>.

The heavy reliance on the importation of mining inputs, fuel and from the 1970s onwards cereal products prompted the Government to adopt exchange rate policies which were significantly detrimental to the ability of the agriculture sector to support economic growth and a rebalancing of exports. Tightly managed, the Government adopted fixed exchange rate policies from independence to 1976, first to the British pound and later to the US dollar, and controlled pegging arrangements until the introduction of exchange rate auctioning in late 1985 (Ellyne 2002, Musonda 2008). The overvalued exchange rate position adopted up until this point, while aiding cheap imports of industrial inputs, including fertilisers, constrained agricultural export potential (Sano 1988). While in the face of an overly domestically-oriented agricultural sector this may have appeared a reasonable approach, it effectively reinforced the long-running subsidiary role of agriculture in the country's export mix.

1965	1983	1985	1987 (April)	1987 (May)	1989	1991
0.7	1.3	2.2	21	8	16	65

**Table 6.1: Kwacha Value Against US Dollar Exchange Rate – Selected Years. Data from Ellyne 2002 and Wulf 1989)**

Subsequent currency devaluations (see Table 6.1) throughout the 1980s driven by structural adjustment policies discussed further below, resulted in additional

<sup>40</sup> *Investment Policy in Zambia - Performance and Perceptions*, CUTS 2003

<sup>41</sup> Author's calculations from GRZ, *Monthly Digest of Statistics*, October-December 1988

negative impacts for Zambian agriculturalists, particularly small and medium sized producers. Devaluation hurt this cohort because they were import sensitive due to fertilizer use, while as producers principally for the domestic market, they were unable to take clear advantage of a weakened currency to stimulate exports (Sano 1988). The ultimate breakdown of the exchange auctioning system came following large scale devaluations in early 1987, and resulted in the Government reintroducing fixed exchange rates from May that year, albeit at a level significantly below that at which the auctioning system was first introduced.

## **Copper and the Resource Curse**

We have already highlighted the key role played by copper in the post-independence Zambian economy, and some of the impacts that declining world copper prices had on government revenues and subsequent budget deficits, which eventually led to structural adjustment programs. Particularly with respect to this period of Zambian history, the heavily reliance of export revenues on the copper industry (and by association, the failure of the economy to successfully diversify) has been seen as an example of the resource curse. For our purposes, where we have a focus on agriculture, the principal consideration of the potential for the resource curse to affect Zambia is in the context of crowding out investments from the agriculture sector or from other beneficial economy-wide investments (such as in infrastructure or human capital).

One form of the resource curse focuses on changes in the terms of trade driven by prices in the booming sector (Sachs and Warner 1995), or alternatively the volatility of prices in the dominant sector creating uncertainty in the investment environment and the capacity of governments to plan in a fiscally responsible manner. A secondly form of resource curse focusses on relative price theories ('Dutch Disease'), in which impacts of booms in the dominant sector lead to currency appreciations, which impact other tradable sectors of the economy in favour of non-tradable sectors (Corden and Neary 1982). Such assessments usually consider manufacturing as the alternative traded sector impacted by the booming sector, but it is relevant to note that in post-independence Zambia, agriculture was the largest traded sector after mining.

Du Plessis and Du Plessis (2006) assess both these potential forms for the existence of the resource curse in Zambia. Based on an assessment of long-term copper prices and GDP growth trends, they find little evidence to support the terms of trade theory of the resource curse. Similarly, in relation to the concept of 'Dutch Disease' they find little evidence that real price variation in copper prices drove change in the real exchange rate from 1960s onwards. They do find greater evidence for the existence of 'Dutch Disease' in changes in the relative sector shares of the economy. However, taking from Aron (1999), they note that the extent of

government distortions in agricultural pricing and high government-driven demand in the traded and non-traded sectors, make any clear link to relative prices changes difficult to establish.

## **Agriculture Before and After Structural Adjustment**

In the years immediately following independence, the new government did little to vary the existing systems of agricultural investment, and Scott (1995) sees the approach to the commercial farming sector in the subsequent decades as one of “benign neglect”; a subsector employing thousands of people while creating little land pressure. The patterns established in the years of colonial rule persisted into the early independence era; in 1968, despite there being only 700 registered European farmers, this group accounted for 62 percent of total marketed output (Saasa 1987). Yet change was coming.

From the early 1970s, large scale commercial agriculture began to see a rise in indigenous capital, with approximately 356 individual Africans holding freehold or leasehold title over approximately 430,000 acres; with 263 of these landholdings being in excess of 50 acres, the increase was principally driven by the purchase of previous settler farms (Baylies and Szeftel 1982). At this time however, these holdings were still dwarfed by those held by non-Africans.

The number of European farmers continued to steadily decline, without disappearing completely. By mid-1988, there were only 400 Non-Zambian employees in the agricultural sector, from a total of 36,780<sup>42</sup>. This decline mirrored a wider trend in the country. As the population of Zambia continued to grow in the early post-independence years, official immigration levels remained relatively steady, averaging almost 4,500 per year for the remainder of the 1960s. The make-up of this immigration however, shifted markedly. From 2,355 in 1964, immigration from Rhodesia declined and in only two years to the mid-1980s did immigration rise above 300<sup>43</sup>. This drop followed the Unilateral Declaration of Independence of 1965 by the white-minority leadership in Rhodesia, which later saw the border to the south closed in 1973 (Lukanty 1990).

The United Kingdom continued to be the largest single source of immigrants throughout the 1960s and 1970s. Following independence, South African immigration was no longer recorded separately, but rather subsumed into a collective group of Rest of Africa, signaling a decline. Four of the five years from 1971 had total immigrant intakes in excess of 10,000 per annum, but subsequently,

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<sup>42</sup> GRZ, *Monthly Digest of Statistics*, October-December 1988

<sup>43</sup> GRZ, *Monthly Digest of Statistics*, April-June 1979, June/July 1985

on the back of economic decline and the ongoing *Zambianisation* of the economy, immigration declined steadily, to be fewer than 2,400 by the mid-1980s<sup>44</sup>.

Concurrent with the decline in non-Zambian farmers, a transition occurred throughout the 1970 and early 1980s, in which small and medium agricultural producers moved from producing around one third of marketed food supplies to account for some two-thirds of production (Kydd 1988). By the end of the decade, the small and medium scale share of maize production had risen to 80 percent (Howard and Mungoma 1996).

Agriculture was accorded a higher priority in government planning following the copper price crash, and accounted for a significant proportion of government expenditure, rising from 11 percent in 1974-75 to 30 percent in the late 1980s (Moyo et al 1993). Maize, considered by the Government as the 'social contract crop', which saw an emphasis on government expenditure on supporting maize production and marketing, to the detriment of other crop varieties, with a view to maintaining stability in maize-meal pricing in urban centers. The result was over-regulation and distortionary production incentives; the relatively inefficient use of government expenditure on the introduction and encouragement of maize mono-cropping, which had a number of environmental and income impacts (Scott 1995).

Figure 6.2 presents data for the production of Zambia's two most economically significant crops in the post-independence period until 1991. The decline in tobacco production is stark and relatively consistent throughout the period, while the steady increase in maize production, impacted as it was by a number of significant drought occurrences, must be considered against the continual increase in the Zambian population. In the 1970s, Zambia was in a position to export a maize surplus. However, by the turn of the decade, Zambia was a net importer of maize, a position it would sustain for the majority of the next three decades. In 1980, self-sufficiency in maize had declined to 79 percent despite average yields far in excess of Sub-Saharan African averages (Simson 1985: 48, 106-7) and it is relevant to note that in the first half of the 1980s, cereal products ranked second only to petroleum products in terms of the value of imports<sup>45</sup>. At the same time, total agricultural exports were as low as one percent of total exports per annum (Simson 1985: 48). Good (1986) characterised the country's parlous economic situation thus:

...no surplus from copper; no surplus of staples but rather large importations of cereals; gross underutilization of manufacturing capacities which were heavily dependent on foreign inputs; heavy foreign-debt interest payments; further foreign borrowing merely to 'prop up' the economy.

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<sup>44</sup> GRZ, *Monthly Digest of Statistics*, June/July 1985

<sup>45</sup> GRZ, *Monthly Digest of Statistics*, October-December 1988

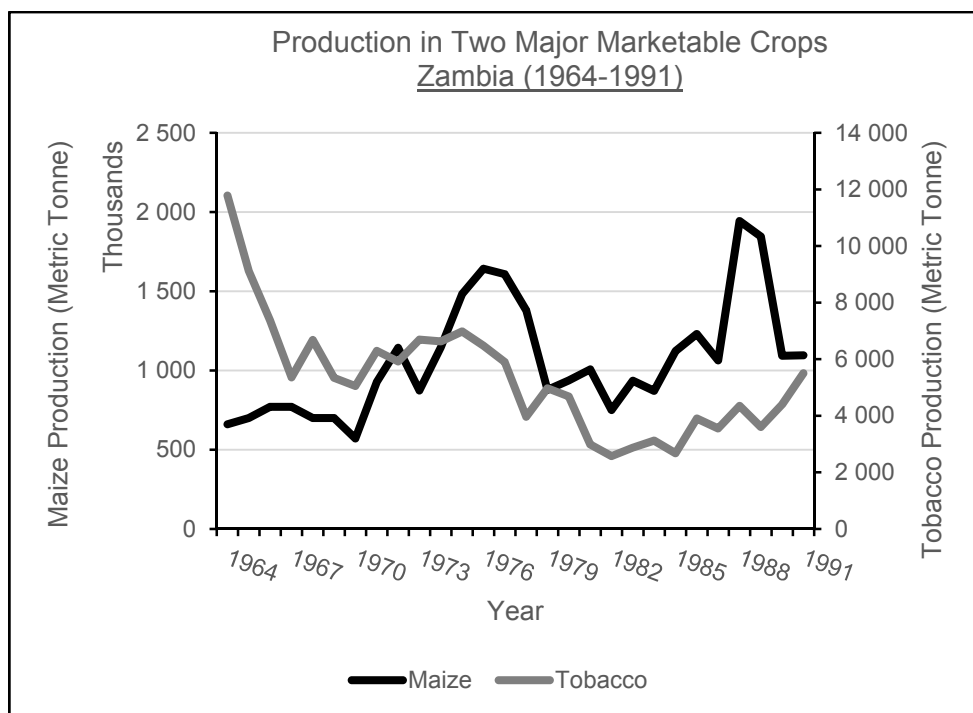


Figure 6.2: Post-independence Production of Tobacco and Maize, 1964-1991. Data from FAO

In the midst of such an economic crisis, the Government launched Operation Food Production, which proposed the costly establishment of 18 state farms of approximately 20,000 hectares each, two in every of the then nine provinces, which producer prices were also increased (Saasa 2003).

As part of the first wave of debt-induced structural adjustment reforms, there was a change in government incentives from late 1982 onwards, which saw a removal of price and marketing controls for all but maize and fertiliser, had a significant impact in stimulating commercially oriented farmers. These incentives led to significant increases in wheat and tobacco production (Hawkins 1991), but also induced overly capital intensive investments, irrigation for wheat production being an example (Kydd 1988). Commercial agriculture, consistent with the past, continued to be focused on domestic markets, though there was a growth in agricultural exports after the reforms, albeit from a low base (Hawkins 1991). These markets, such as wheat, were not regulated in the same way as local markets.

Maize prices were tentatively and gradually raised in a stepwise manner throughout 1985 as part of the liberalization process, and the production response from farmers is evident in Figure 6.3. In May 1986, President Kaunda stated that:

Zambia's cardinal mistake was to subsidise consumption for a long time, thereby delaying diversification. (quoted in Kydd 1988)

In December 1986, maize prices were doubled and 100 percent liberalized. As expected, the urban working class bore the brunt of most of the reform process, and the maize liberalization in particular. With wage ceilings also in place as part of the adjustment program, and a staged devaluation of the currency making imports prohibitively expensive, urban workers, the government's core constituency, were squeezed. Organised labour undertook a series of strikes throughout 1985 as the government held firm to the reform process – however, following riots resulting in deaths following the December 1986 maize price liberalization, and further strikes throughout early 1987, the government severed ties with the IMF and reintroduced price controls on not only maize, but 23 'strategic commodities' (Bigsten and Kayizzi-Mugerwa 2000).

During this abortive structural adjustment process, devaluation made industry and agriculture more competitive in world markets, but made imported inputs prohibitively expensive. Given the majority of both sectors was geared towards the domestic markets, these two forces did not operate effectively to balance each other out. Likewise, the liberalization of marketing was hampered by inadequate infrastructure to adequately draw outer areas into the market. At the same time, the lack of a mechanism to counterbalance the significant impact on urban consumers resulted in civil unrest.

### **Locating Agricultural Production: Policy Distortion for Social and Spatial Change**

The previously identified transition towards an increased role by small and medium producers in maize production stemmed from Government policy decisions in the mid-1970s. Still to feel the medium and longer term effects of declining world copper prices, the Government introduced pan-territorial producer pricing for maize in 1975, supported by the development of new collection depots outside of the traditionally strong commercial agricultural regions. Wood (1990) characterizes Government policies towards agriculture as driving towards the twin aims of spatial dispersion and social diversification. While the policies succeeded in bringing more of the population into the market economy, from both a social and spatial perspective, the distribution of the benefits essentially reinforced existing regional disparities, while the widespread application of the policies throughout the country creating an environment ripe for corruption, often perpetuated by the privileged (often political) class (Good 1986; Baylies and Szeftel 1982). Table 6.2 reflects the outcome of the Government's social goals in the early years following the policy change, reflecting a significant transition in the segmentation of production from the pre-policy period.

	<b>Large-Scale Commercial</b> (+40 hectares)	<b>Medium Scale Commercial</b> (10-40 hectares)	<b>Small-Scale Semi-Commercial</b> (1-10 hectares)	<b>Subsistence / Traditional</b> (1-5 hectares)
<b>1969</b>	1.7	4.5	18.7	75.0
<b>1980</b>	1.2	6.3	30.1	62.3

**Table 6.2: Percentage of Farmers by Farm Category, from Wood (1990)**

The evidence shows a rise of large numbers of farmers out of subsistence and into small scale farming producing for market, with a smaller increase in the number of small scale farmers graduating to medium scale status, suggesting that the social goals of the policy settings were met.

However, when assessing these outcomes from a spatial distribution perspective, the ‘success’ of the policy changes are less clear. Rather than driving a more balanced distribution of production throughout the country, Wood (1990) notes that the policy in effect reinforced the colonial era concentration of commercial farming along the line of rail, with the majority of those additional small scale farmers producing for market coming from existing areas of agricultural strength, namely the Southern and Central provinces. Table 6.3 presents the same figures as Table 6.2, but this time using a spatial distribution between the line of rail provinces (plus Eastern Province) and the peripheral provinces. Particularly striking in this representation is the stark differential in higher order commercial agriculture between the two areas, despite the overall population of the two areas being extremely similar. Good (1986) provides further evidence of the seeming failure to follow through on the spatial redistributive elements of the policy, highlighting that in 1977-78, 88 percent of all agricultural loans went to farmers in the line of rail provinces (not including Eastern Province), further reinforcing the traditional focus on these areas.

At the same time, the blunt instrument of pan-territorial pricing and the focus on maize led to an essential mono-cropping enterprise. Small scale farmers were, in effect, contract farmers to government (Wichern et al 1999: 29), focused on ensuring effective supply of the social contract crop to government to support the urban working class, and being insulated from price and significant environmental risk. At the same time however, longer term food security considerations were put at risk though a decline in the cultivation of traditional staples, resulting from the commercial responses of small scale and traditional farmers to the maize price incentives on offer.



	Large-Scale Commercial	Medium Scale Commercial	Small-Scale Semi-Commercial	Subsistence / Traditional	Total Population (millions)
<b>Central, Southern, Lusaka, Eastern</b>					
<b>1969</b>	3.8	9.7	34.8	51.7	1.402
<b>1980</b>	2.4	12.7	49.9	35.0	1.543
<b>Copperbelt, Luapula, Northern, Western, North-western</b>					
<b>1969</b>	0.0	0.3	5.2	94.5	1.563
<b>1980</b>	0.0	0.4	8.8	90.8	1.696

**Table 6.3: Regional Distribution of Farming Population, in Percentage by Farm Category, from Wood (1990)**

While the policy was successful in bringing more actors into the agricultural market sector, it did so in the absence of foreign investment and at considerable costs to the Government's budget, as evidenced in Table 6.4.

	Total Government Expenditure (millions of kwacha)	Maize Subsidies (millions of kwacha)	Maize Subsidies as Percentage of Government Expenditure
<b>1980</b>	1641	154	9.4
<b>1981</b>	1294	87.1	6.7
<b>1982</b>	1537	138	9
<b>1983</b>	1412	124.7	8.8
<b>1984</b>	1328	81.6	6.1
<b>1985</b>	2184.3	134	6.1
<b>1986</b>	5292.7	565	10.7
<b>1987</b>	5537	638	11.5
<b>1988</b>	8359.3	1413	16.9
<b>1989</b>	9838	1585	16.1
<b>1990</b>	29926.3	3363.9	11.2

**Table 6.4: Maize Subsidies in Nominal Values and as Percentage of Total Government Expenditure, from Kalinda and Floro (1992)**

Despite the costs, the Government's policy approach also the consequence of creating incentives for the largest scale commercial operators to push into higher value economic production. Here, those with access to capital and the ability to operate outside of the Government's regulated markets were able to take advantage of opportunities in the unregulated cattle subsector and later, following the withdrawal of price controls, in wheat and other non-maize cereals. In some ways, this shift in fact gave effect to the policy prescription set down by the UN/FAO mission as early as 1964, which called for efforts to be made by large scale farmers to transition to low volume, high value production, freeing the market in high

volume, low value production of maize to the emergent African smallholder sector (see chapter 5). On the contrary, writers in the Marxist tradition would argue that this had the significant consequence of putting at risk national food security (Klepper 1979, Good 1986), at a time of high food imports. However, as Klepper (1979) notes, producer prices were often set below import parity prices, which led to cross border black market trade (Good 1986).

## Conclusions

In its essential absence, there are few conclusions to draw about the impact of foreign investment in agriculture during the first two and a half decades of Zambia's independence. Despite not being prohibited, there was little incentive for prospective investors in agriculture. The over-valued fixed exchange rate made obtaining the necessary imported inputs expensive, and made potential exports internationally uncompetitive. The local market to which settler investors had previously been drawn was limited by fixed producer prices, often below export parity prices, while the parlous state of the economy limited the potential in the lesser regulated local markets.

The period was not however, one of stasis in the agriculture sector. Rather, heavy state intervention saw an increase in the social and spatial dispersion of commercial agriculture, as farmers were drawn from the subsistence sector into a small-scale market orientation. Similarly, areas that were previously limited in their access and connection to markets were incorporated by a government marketing machine focused on social, rather than commercial, goals. While laudable in its intent, the government's endeavors came at considerable costs to a national budget already under stress from declining copper revenues. In attempting to please everyone, the government ultimately pleased no one.

Confronted by the failure of its indigenous reform program and ongoing economic hardship, the late 1980s saw the Government return to attempts at modernizing the economy, moving towards reducing Government controls, including prices for everything but its social contract crop of maize. However, change and stability did not come fast enough and in the face of growing opposition both at home and internationally, the Kaunda regime agreed to hold multi-party elections in 1991. The change in government which followed ushered in a new era of policy reform, a renewed interest in the potential of foreign investment to support Zambian economic growth and a further round of structural adjustment, with significant implications for the agriculture sector. This period will be considered in our final empirical chapter, which follows.

# 7. Foreign Direct Investment and Commercial Agriculture in Multi-Party Democracy Zambia (1992-2016)

## Introduction

This chapter takes as its focus the recent modern history of Zambia, from the commencement of multi-party democracy, which followed the fall of the one party state of President Kenneth Kaunda, up until the present. The early 1990s saw a period of rapid economic reform, including a renewed commitment towards encourage foreign investment. The chapter will present data on foreign direct investment in the agricultural sector and utilize the previously articulated analytical framework to make inferences on its impacts.

Using data obtained from the Zambia Development Agency, we consider the origins of foreign direct investment in Zambian agriculture during the 25 years since 1992, and attempt to place this in the context of investments in the country more broadly. An opportunity is taken to compare this experience with that of Uganda and Mozambique, and in such a way go some way to assess whether the Zambian experience is unique. Subsequently, we implement our assessment of the recent history of foreign investment in Zambian agriculture against the analytical framework. Such an assessment demonstrates that contrary to overcoming some of the geographical hurdles to agricultural production, foreign investment continues to reflect the spatial concentration evident in colonial times, while the focus of investments seems only partially to address capability and capacity gaps that exist in the agriculture sector. The role of government policy decisions, relating the investment environment and agriculture more broadly is assessed, as is the available evidence for the impact of foreign investment on local agricultural actors. The final section concludes with some general observations.

# The Origins of Agricultural Investment

The data available on foreign direct investment in the agriculture sector is taken from the Zambia Development Agency, and was discussed in detail, including its limitations, in Chapter 3. This section seeks to assess the origin of those investments over time.

Figure 7.1 presents the percentage of investments arising from the five selected countries in terms of value throughout the study period, as well as two residual groupings. The first residual grouping covers investments from non-specified Sub-Saharan African countries; the second covers the remainder of the world. Figure 7.2 presents the same data, but splits the data into two roughly equal time periods. United Kingdom, South Africa and Zimbabwe are chosen given the relative significance of their volume of investments, while China and India are chosen given the widespread commentary about the role of foreign investment in Africa by developing countries, and by these two countries in particular.

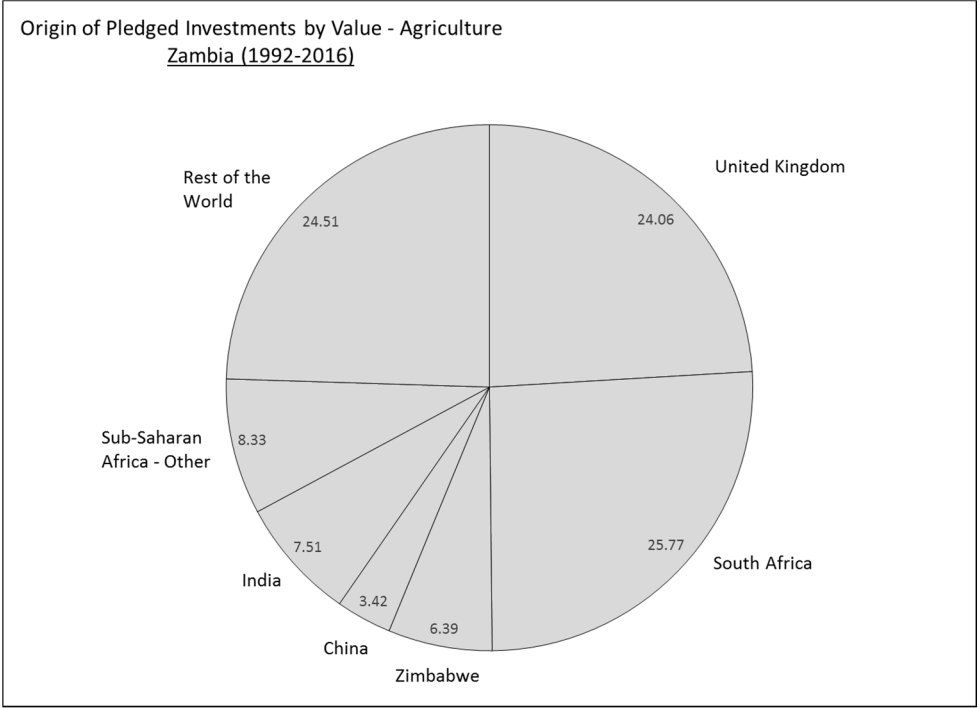


Figure 7.1: Origin of Pledged Investments in Agriculture by Value across the study period. Author's calculations using ZDA data.

Perhaps the most obvious observation to make from the data is that the three most dominant countries with respect to foreign investment in Zambia agriculture (in the

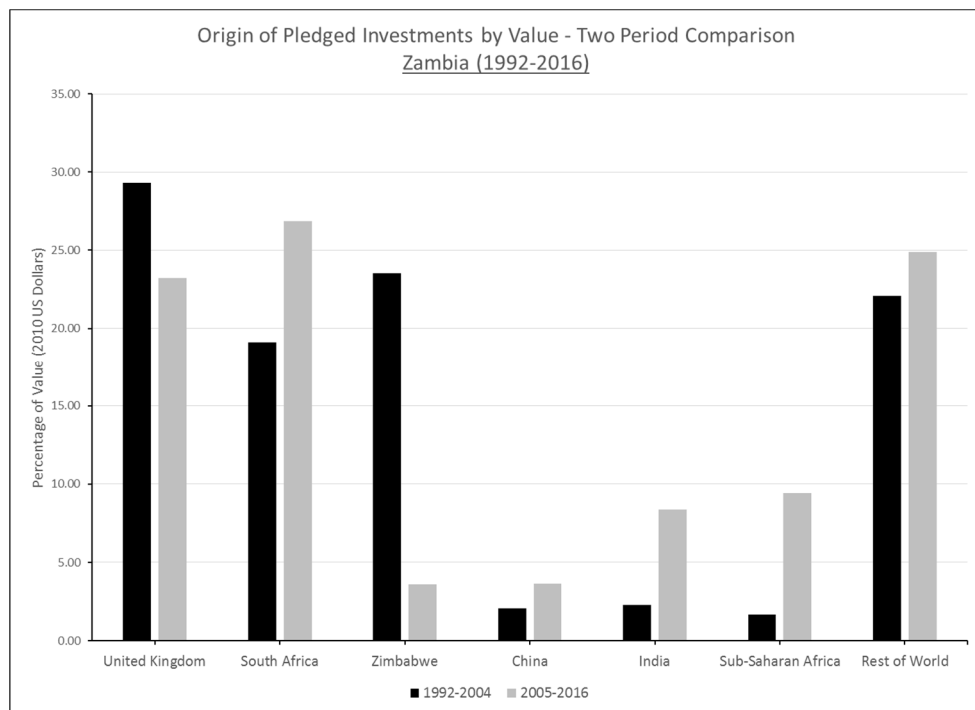
United Kingdom, South Africa and Zimbabwe) all had a longstanding connection with the country, previously explored in Chapter 5.

South Africa and United Kingdom have been active sources of investment from the very beginning of the 1990s, combining to deliver almost 50 percent of investment by value (and over 54 percent in volume) during the first 13 years after the opening up of the economy. This dominance has continued up to the present, with both countries continuing to play a significant role in injecting much need capital into the Zambian agriculture sector. Of note, South Africa has become the more dominant contributor of the two in recent years. Of further interest is the fact that though the two continue to account for over 50 percent of the value of investments in the 12 years to 2016, these derived from only 36 percent of the volume of investments.

The influence of Zimbabwe is different, and skewed towards the first period (see Figure 7.2). When assessed in more detail, the concentration of Zimbabwean investment can be traced to the early 2000s. This phenomenon parallels closely the introduction of the fast track land reform process instigated in Zimbabwe, which saw the confiscation with limited compensation of land from European farmers, the numbers of which are estimated to have declined from approximately 4,500 prior to the land reform process to around 450, as the majority of investments were at the back end of the period. Here, 49 investments of Zimbabwean origin are listed between 2002 and 2004. In 2004 alone, Zimbabwean investments accounts for half of all investments by volume and 69 percent by value. While it is not possible based on the data available to directly link the Zimbabwean investments to ‘white flight’, contemporary reports of up to 200 white Zimbabwean farmers relocating to Zambia provide some support to such a view (Carroll 2006). The recent success of Zambian maize production has been linked in some quarters to the role of expatriate Zimbabweans, though both Scones (2016) and New Zimbabwe (2016) contradict this view. Rather than expat Zimbabweans being the source of recent surge in maize production, these authors consider the increases a result of higher small and medium scale production of the back of ongoing government subsidies (discussed further below). Scones (2016) does however indicate the presence of up to 750 white Zimbabweans in Zambia, which far exceeds any fair estimate based on pledged investment data.

With respect to the role of China and India, Figure 7.2 reflects a growing yet still relatively minor role of these two countries in Zambian agriculture. Beyond the five countries explicitly addressed, the rise in the influence of other countries from sub-Saharan Africa is noticeable, albeit from a very low base. The influence of the rest of the world also rises in more recent years, though this figure is significantly influenced by one large Singaporean investment in sugar production, which accounts for just over 15 percent of total investment. Combined, countries other than the five explicitly addressed have been responsible for approximately 30 percent of

observed investments and 34 percent of the value of investments in the second half of the study period.



**Figure 7.2: Origin of Pledged Investments in Agriculture by Value over Two Periods. Author's calculations using ZDA data.**

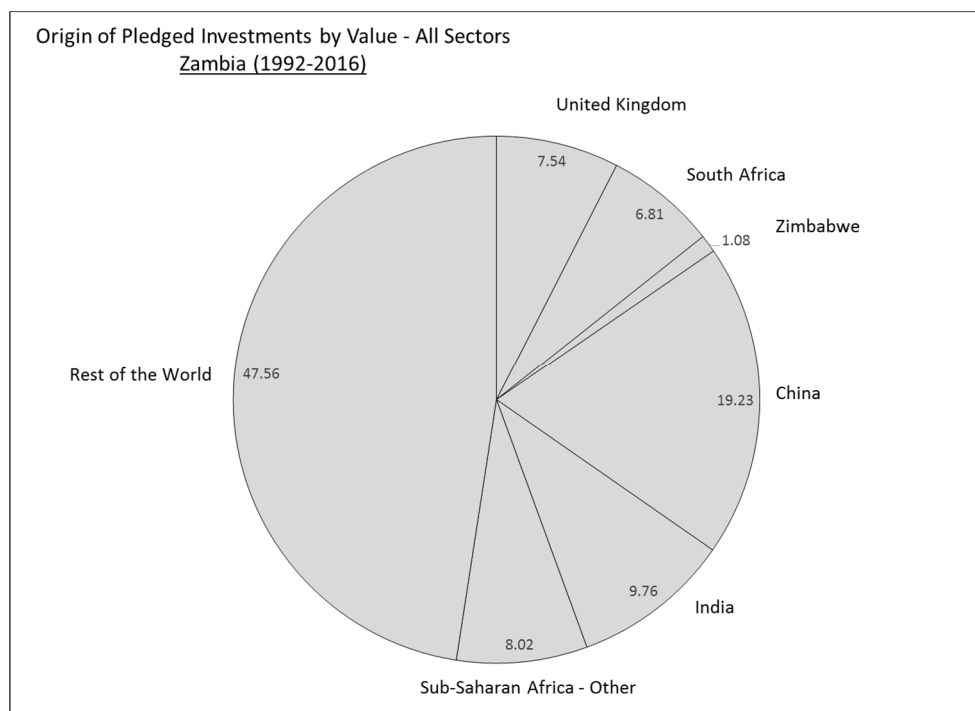
Conceptualized in a different way, what becomes clear is that far from a dominance of foreign investors from the developed world, those seeking to invest in Zambian agriculture are more broadly representative of the developing world. Even acknowledging the presence of South Africa, a regional economic powerhouse and Africa's most developed economy, 60.8% of the investment certificates issued over the 25 year period were to investors from developing countries, with this pattern relatively consistent throughout.

While unable to be compared directly, these findings contrast with those of Schoneveld (2014), who analysed 563 farmland investments in excess of 2,000 hectares. Fbe established, over 86 percent had foreign operators, with Europe being the dominant investor region with 40.5%. Of interest more broadly, given our establishment of a clear correlation between investor origins in Zambia and that country's colonial heritage, Schoneveld (2014) notes that of 20 Portuguese farmland investments, 19 were made in the former colonies of Angola and Mozambique, while 16 out of 20 French operated projects were located in Francophone countries.

## Is Agriculture Different?

### *The Zambian Economy*

While the nature of the case study approach adopted prevents the drawing of generalizable conclusions beyond Zambia, the opportunity exists to assess whether the investment pattern identified within the Zambian agriculture sector mirrors that more broadly in the economy. Additionally, available data on the investment experience in Uganda across the same 25 year study period and in Mozambique across a shorter period enables some regional comparison, providing depth to the Zambian observations.



**Figure 7.3: Origin of Pledged Investments by Value in All Sectors. Author's calculations using ZDA data.**

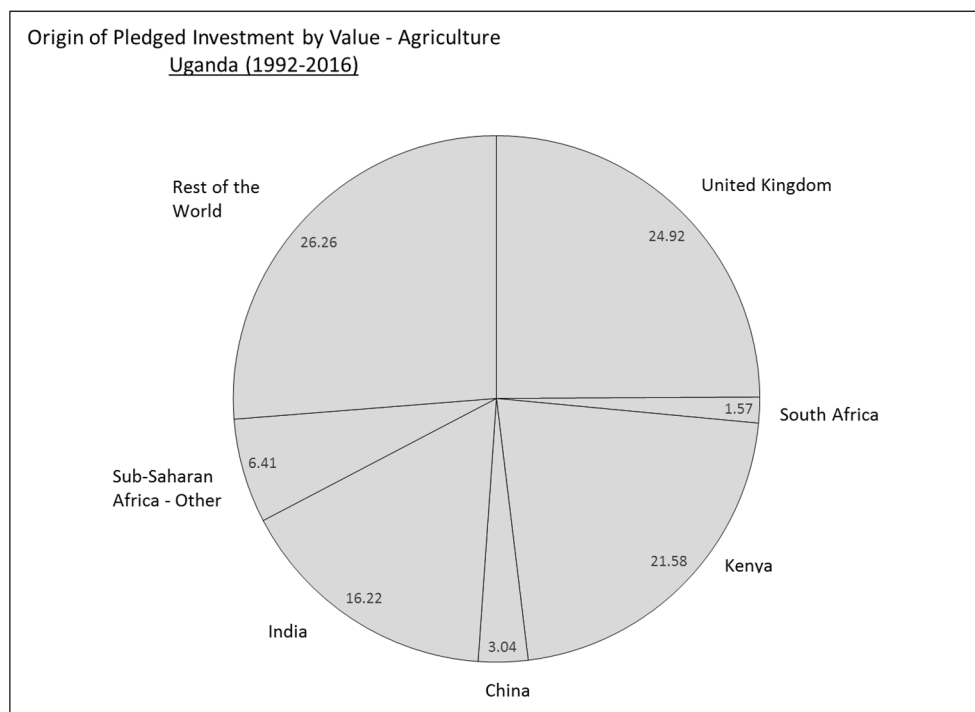
Figure 7.3 provides the breakdown of investor origins across the 4,124 in scope observations in all sectors of the Zambian economy between 1992 and 2016. To support our comparison, the five selected countries and the two residual groupings previously assessed are maintained. In comparison, the two sets of figures presented in Figures 7.1 and 7.3 have a correlation coefficient of 0.33, representing a best a weak relationship between the two. What is readily evident in comparing the agriculture sector with the general economy is the significantly reduced influence of the United Kingdom and South Africa across foreign investments in Zambia as a

whole, and a proportional rise in the impact being made by China and India across all industries. The 29 percent of investments from these two later countries alone is almost equivalent to that deriving from a combination of the United States and Europe (at 31 percent, not shown in the figure).

Chinese investment is concentrated in the Manufacturing, Mining and Construction sectors. Of note, there were approximately five times the volume of Chinese investments in the Manufacturing sector compared to the Agriculture sector (295 to 60 over the 25 year period). The same comparison for Indian investments shows an almost threefold differential (184 to 65).

### *Uganda and Mozambique*

Data for foreign direct investments in Uganda and Mozambique provide an opportunity to compare the Zambian experience. Figure 7.4 presents a similar seven way split of investments in the Ugandan agriculture sector to that in Figure 7.1. In the Ugandan example, Zimbabwe is replaced in the analysis by Kenya, a country with long-standing economic links to Uganda and one that could be conceived as a regional hegemon in East Africa.



**Figure 7.4: Uganda - Origin of Pledged Investments in Agriculture by Value across the study period. Author's calculations using UIA data.**



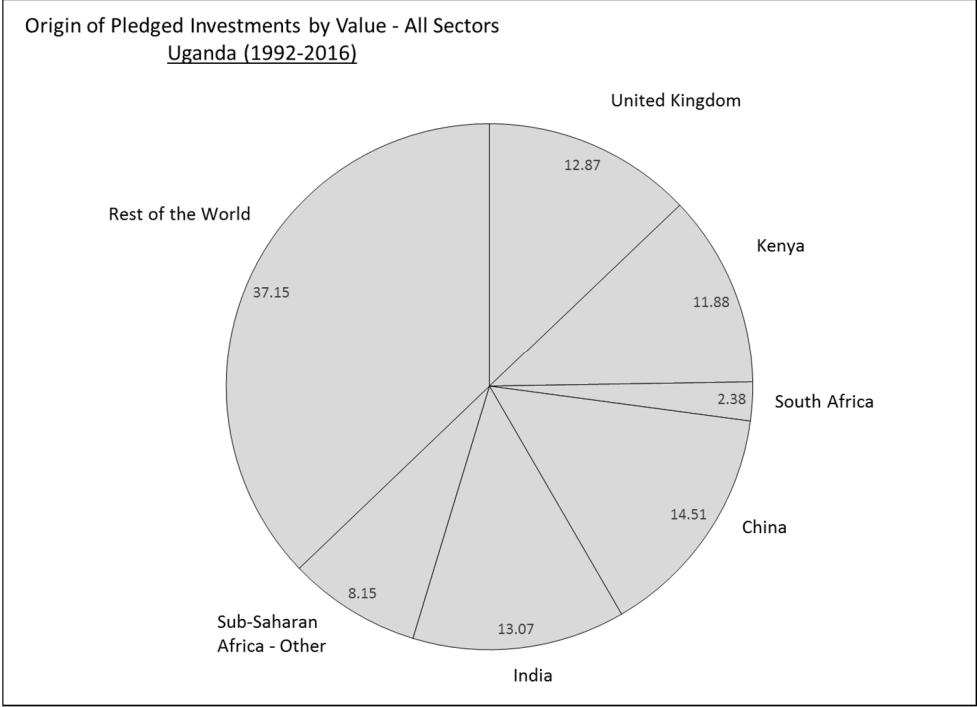
The analysis reflects a significant continued influence of the former colonial power, the United Kingdom, in agricultural investments (almost one quarter of the total value). Investments from neighboring Kenya also represent a significant proportion of total value, while the impact of South Africa, less dominant in East Africa compared to its immediate vicinity in southern Africa, is minimal.

Compared to the Zambian experience, the influence of India is more pronounced. This prominence cannot be explained solely in the concept of the Rising Giants of Asia and their increased economic growth since the 1990s. Rather, there are historical and geographic links that assist in explaining the differing involvement of India in Zambia and Uganda, both in agriculture and the economy more broadly. In colonial times, Indians were employed as part of the British Civil Service in East Africa, a phenomenon that was not replicated in Southern Africa. The significance presence of Indians in the then Ugandan Protectorate is evidenced in figures from the 1959 Census of the Non-African Population, the last prior to independence in 1962. Of a total population of 87,058 non-Africans, 69,103 were classified as Indo-Pakistani, a further 2,830 were Goan and only 10,866 European. The equivalent number from the previous census in 1948 were 33,767, 1,448 and 3,448 respectively<sup>46</sup>. The same census indicates that there were almost 13 times the number of Indians economically active in agriculture than there were Europeans<sup>47</sup>. The relevance of the findings concerning colonial heritage is most noticeable when the experience in the agriculture sector is compared to that of the economy more broadly. Figure 6.5 presents the origins of foreign investment across all sectors in Uganda. Again, we find that the dominant influence of the former colonial power evident the agriculture sector is not replicated in the economy more broadly, while the influence of a historically dominant neighbor (in this instance Kenya) is also diminished. Further, the proportional influence of China also increases markedly across the economy more broadly, similar to the Zambian experience, with Manufacturing being a key target sector.

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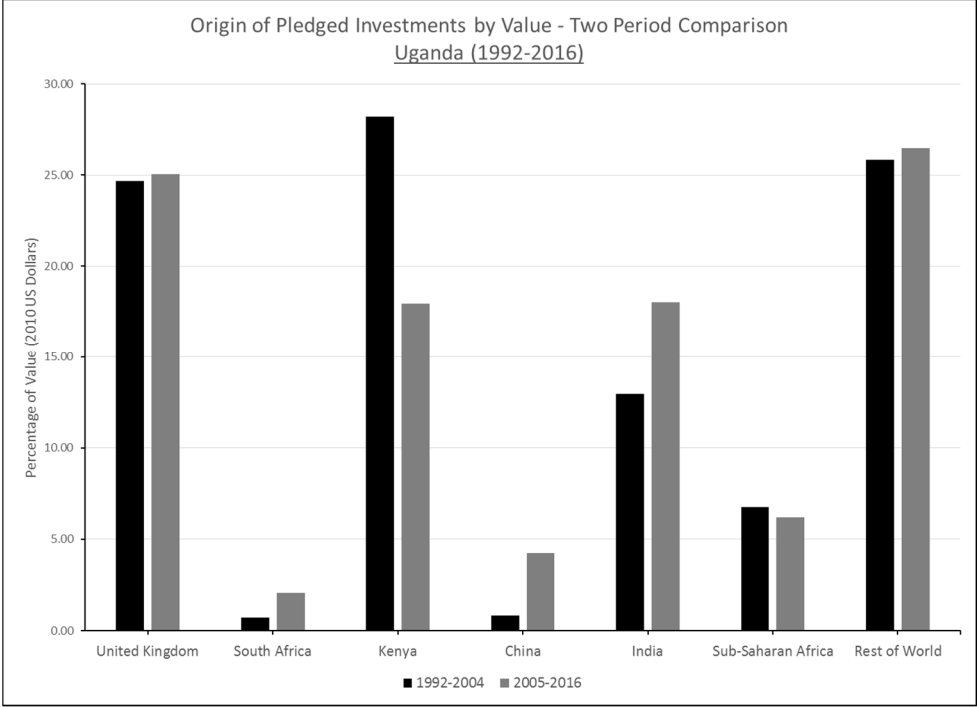
<sup>46</sup> Uganda Protectorate, *Uganda Census 1959, Non-African Population*, 1960

<sup>47</sup> 1,696 Indians were economically active in the Agriculture, Forestry and Fishing sector, from a total of 1,922 non-Africans, compared to 131 Europeans.



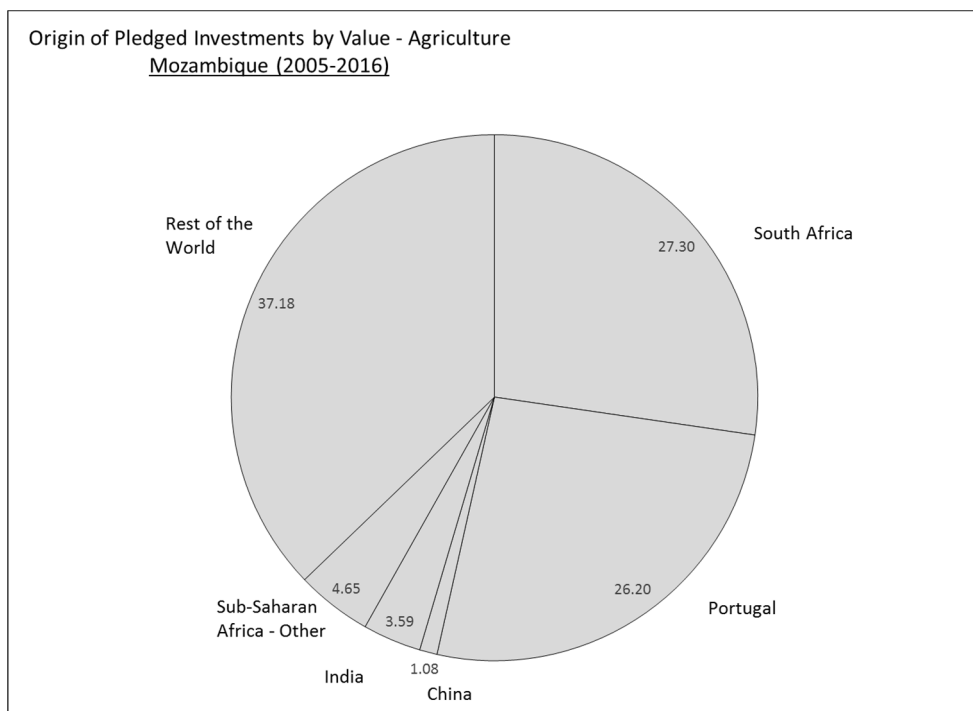
**Figure 7.5: Uganda - Origin of Pledged Investments by Value in All Sectors. Author's calculations using UIA data.**

The data available for Uganda provides the opportunity to assess possible changes over time. Figure 7.6 provides the same two period split used for the Zambian data, breaking the 25 year period into two blocks (1992-2004 and 2005-2016). In a similar pattern to Zambia, the data indicates a rising role being played by China and India in the more recent period, but that in comparative terms, this contribution continues to lag that of the United Kingdom.



**Figure 7.6: Origin of Pledged Investments in Agriculture by Value over Two Periods. Author's calculations using UIA data.**

In Mozambique, a similar pattern emerges, indicating that the experience of Zambia and Uganda may not be linked to the fact that they share a common colonial history as former British colonies. In the Mozambican agriculture sector, Portugal has played a major investment role, representing in excess of 25 percent of investment over the 12 years for which data is available. This proportion is more than twice that which Portugal represents when considering the totality of foreign direct investment, where this former colonial power accounts for less than 12 percent of investment (see Figures 7.7 and 7.8). The other significant source of agricultural investment is South Africa, which shares a land border with the country and accounts for the largest proportion of any origin country (at over 27 percent). South Africa has a longstanding history of investment in the country, with the city of what is now Maputo in the south having seen a significant South African presence since the early 20th century, given its role in supplying and exporting from South Africa's mining areas (Penvenne 2005). Again, in a similar vein to Zambia, and equivalent to Kenya in the Ugandan example, the South African dominance in agriculture is not reflected to the same extent across the broader economy, with South Africa representing less than 11 percent of total pledged investment.



**Figure 7.7: Mozambique - Origin of Pledged Investments in Agriculture by Value, 2005-16. Author's calculations using CPI data.**

A number of stylized facts can be garnered from assessing the experience of foreign investment across the three countries:

- investment in agriculture tends to experience a greater concentration of source countries than foreign investment in the economy more broadly
- the influence of former colonial powers as a source of foreign investment appears more prominent within the agriculture sector, when compared with the economy more broadly
- the role of regional hegemony as a source of foreign investment appears more prominent within the agriculture sector, when compared with the economy more broadly.

In exploring these observations, there are factors that go some way to explaining the continuing prevalence of long-standing contributors in agriculture compared to other sectors of the economy.

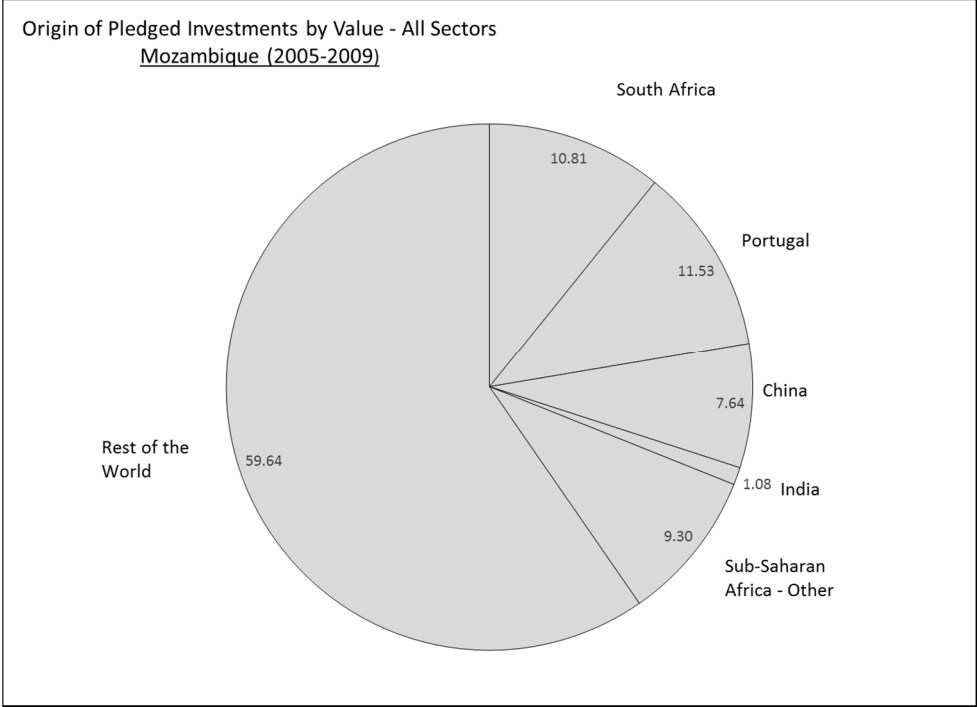


Figure 7.8: Mozambique - Origin of Pledged Investments by Value in All Sectors. Author's calculations using CPI data.

Firstly, the regional integration of agricultural markets for certain crops, whereby limited transportability prevents the capacity to exploit distant export markets. In Zambia, where agro-ecological conditions were similar to large parts of South Africa and Zimbabwe, investors from those source countries can readily invest in the production of crops (in particular maize) for both the domestic and regional export markets in which they have considerable experience. This suggestion with respect to regional maize markets in Southern Africa may also go some way to explaining the greater dispersion of investment sources in Ugandan agriculture, which has throughout its colonial and post-colonial history been more significantly focused on export cash crops (especially tea and coffee) than has been the case in Zambia (where maize for local consumption has dominated agricultural production).

Related to the above, and especially with respect to the continuing influence of the United Kingdom and Portugal, a traditional understanding of the agricultural conditions faced within the former colonies, built from either direct experience or contact with previous investors, may explain why investment in agriculture is less dispersed. This familiarity seems distinct from the linguistic, cultural and legal similarities which have been commonly addressed in the foreign direct investment

literature, as such similarities would be expected to traverse all sectors of the economy. Similarly, the land tenure systems available for large scale agricultural production in Zambia, mirrored to a large extent those in place in Zimbabwe and South Africa at the commencement of the study period, which may have provide a level of familiarity and therefore comfort to investors from those countries.

This latter perceived advantage may however be diminishing. When directly comparing Zambia and Uganda, it is clear to see the rising influence evident in the agricultural investment patterns of India and China (see Figures 7.2 and 7.6). Though still relatively small contributors to agriculture, it remains an open question whether the differences we see in the origins of investment in the agriculture sector compared to the economy at large, and a perceived advantage held by those with long-standing historic ties, are structural or simply reflect a lag in agricultural interest that will continue to diminish over time.

## Implementing the Analytical Framework

### **Locating Agricultural Investments: Overcoming Barriers?**

One of the key potential benefits from foreign investment in agriculture is the perceived capacity of foreign capital to overcome some of the constraints that exist within the local agricultural sector, particularly with respect to the introduction of improved production technologies and the overcoming of distance, given the ability to either absorb higher levels of transportation costs or develop new transport infrastructure to connect otherwise isolated agricultural land (from the perspective of a market-oriented agriculture) to markets. It therefore becomes relevant to assess the location of those investments described above.

Table 7.1 presents a breakdown of the volume and value of investments by province, using the post-2011 provincial boundaries. Data relating to (and obtained prior to) the introduction of Muchinga province has been re-categorized based on district level information. The data is presented in two forms, both including and excluding Lusaka district, one of eight within Lusaka province. While Lusaka district, containing the national capital and largest urban conglomeration, incorporates significant agricultural activity, the overwhelming bias towards it in the data (46.3% of volume and 63.5% of value) calls into question the validity of at least some of the observations. Removing Lusaka district from the proportional analysis, and thereby reducing the prospect of bias, provides an increased capacity to assess the spatial distribution of agricultural investment.

Province	All Investments		Excluding Lusaka District	
	% Total Number	% Total Value	% Total Number	% Total Value
Central	23.44	5.40	42.95	14.30
Copperbelt	13.94	9.22	25.55	24.41
Eastern	2.28	1.70	4.19	4.49
Luapula	0.36	8.04	0.66	21.30
Lusaka	46.27	63.52	1.54	3.38
Murchinga	0.60	0.66	1.10	1.75
Northern	1.56	0.37	2.86	0.99
North-Western	0.96	0.66	1.76	1.75
Southern	9.86	8.16	18.06	21.62
Western	0.36	0.05	0.66	0.12
Unknown	0.36	2.22	0.66	5.88
<b>Line of Rail</b>	<b>93.51</b>	<b>86.30</b>	<b>88.11</b>	<b>63.72</b>
<b>Observations</b>	<b>832</b>		<b>454</b>	
<b>Total Value (2010 US Dollars)</b>		<b>3,445,366,408</b>		<b>1,300,920,048</b>

**Table 7.1: Percentage of Pledged Investments in Agriculture by Province. Author's calculations based on ZDA data.**

Both breakdowns reflect the overwhelming concentration of agricultural investments along the line of rail (Copperbelt, Central, Lusaka and Southern provinces), with the removal of Lusaka district only reducing the line of rail concentration from 94.2% to 89.4% with respect to the volume of investments. This outcome supports the theoretical contentions outlined in Chapter 2, which suggested that given the preference, foreign investors in agriculture would seek to locate in close proximity to markets (areas of high population) and/or with access to infrastructure which reduces transportation costs. A spatial concentration was also identified by Cotula et al (2014) when assessing 264 land deals over 1,000 hectares in size recorded between 2005 and 2012 in Ghana, Tanzania and Ethiopia. In these countries, the regional concentration was determined by a range of factors, including crop choice and the nature of the investor, agro-ecological features of the region, proximity to main infrastructure and relative land availability.

The much more significant drop in the proportion of the nominal value of investments along the line of rail when Lusaka district is excluded again results from the 2011 Singaporean sugar investment in Luapula province, the scale of which goes some way to supporting the World Bank (2006) view that investments of scale have the capacity to overcome existing infrastructure constraints.

Together, the four line of rail provinces accounted for 54 percent of the Zambian population at the most recent census, taken in 2010. With or without including Lusaka district in the calculations, it is clear that investment along the corridor is disproportionate to the country's population distribution. This finding is further demonstrated when taking our analysis to the district level. Table 7.2 includes all districts from the refined set of observations (that is, minus Lusaka district) which have seen more than 20 pledged investments over the study period. The figure

demonstrates that only eight districts (out of 106 districts currently and 74 prior to a 2013 decentralization process) represent an overwhelming focus of foreign investors in agriculture. The eight districts represent 66.1% of the volume of investments within the refined data set, and 36.1% of the total.

Districts with 20+ Investments	Number of Investments
Mkushi	77
Kabwe	45
Ndola	39
Chisamba	37
Kitwe	34
Mazabuka	27
Luanshya	21
Livingstone	20
Total	300 of 454 (66.08%)

**Table 7.2: Districts with more than 20 Pledged Investments, 1992-2016. Author's calculations from ZDA data.**

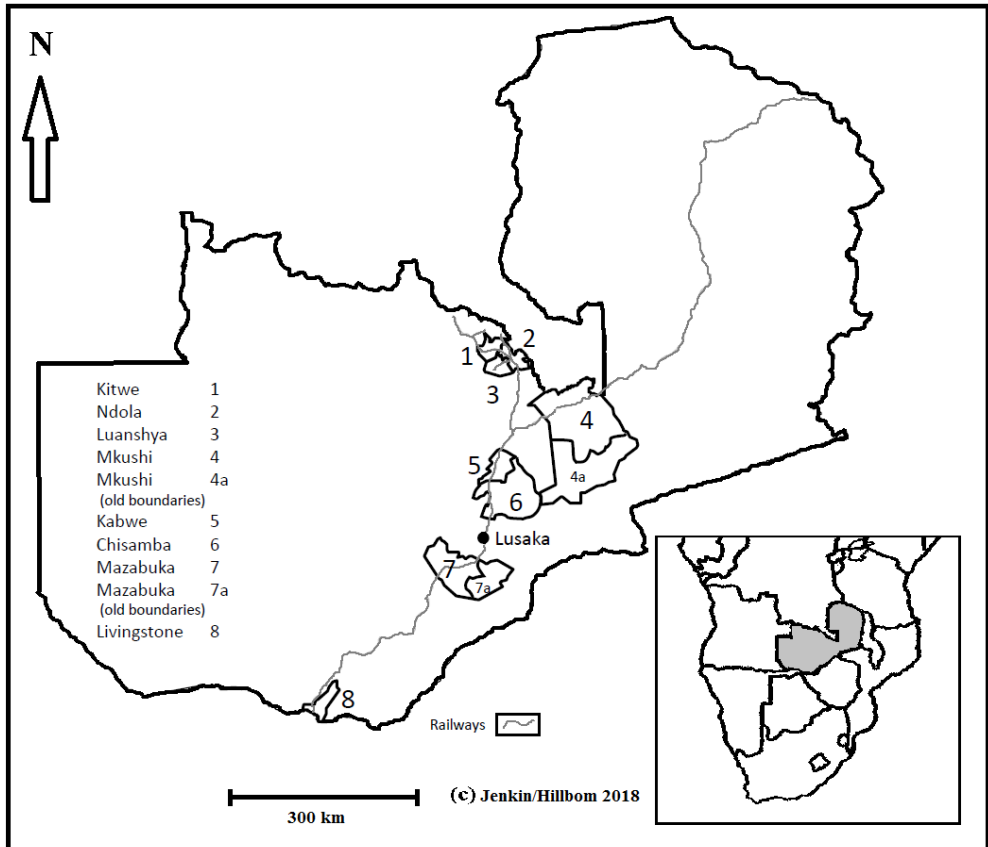
Map 7.1 graphically presents these areas of concentration, further illustrating the spatial concentration of investment. Notwithstanding any employment or demonstration effects associated with these investments, such a concentration will limited the capacity of any benefits derived by local agricultural actors to spread throughout the majority of the country. We will return to this issue later.

When considering the socioeconomic status of these investment focus areas, it is relevant to note that in a 2015 World Bank poverty mapping exercise focusing on adult equivalent expenditure levels, all eight districts fell in the lower half of the 74 districts assessed on the measure of poverty head count. The highest ranked district of the eight was Chisamba at 41 of 74, though it is important to note that the calculations were based on the former district borders of Chibombo, from which the more affluent area of Chisamba was devolved, followed by Mkushi at 47 of 74, with the remainder all ranking in the bottom 20 (de la Fuente et al 2015). For completeness, it should be noted that the poverty head count measure reflects the proportion of the population experiencing poverty, not the absolute numbers thereof. This difference is readily evident when considering Lusaka district, which has both the lowest poverty head count figure of any district (at 0.18), but the second highest number of people experiencing poverty in the country.

An alternative approach to socioeconomic position at the district level was utilized by Masumbu and Marht (2014), who utilize the most recently available census data to calculate levels of deprivation across five welfare indicators (Access to Sanitation, Employment, Electricity, Education and Housing). Their calculations



rank each of the seven districts within the top 20 of the 74 assessed, and four in the top ten (Masumbu and Marht 2014).



Map 7.1: Districts of Zambia with Significant Agricultural Investments, including major railways

While acknowledging that both forms of socioeconomic indicators are based on data from the latter half of the study period, the measures clearly reflect a situation in which foreign investments in agriculture are not being drawn to deprived areas, but rather to areas existing levels of relatively high welfare.

### Distortions Removed? Policy in the Age of Structural Adjustment

The period since 1992 has seen significant fluctuation in the agricultural policy settings, from a staggered retreat from the long-running default position of interventionism, through the reintroduction of maize market supports and the return

to Government support for large scale farming enterprises, albeit with an emphasis on private rather than state-run management.

### *Privatisation, Foreign Investment and Agricultural Liberalization*

The fundamental principle underlying the structural adjustment program was reducing the role of government in the operation of the economy. These included fiscal and monetary policy reforms, but also a process of privatizing of government-run entities and the opening up of the economy to both foreign and domestic private investment.

In July 1992, the Government passed the Privatisation Act, which created the Zambian Privatisation Agency to oversee the sale of state owned corporations and parastatals. While the initial privatization process was slow (Saasa 1996, Bigsten and Kayizzi-Mugerwa 2000), the program drew acclaim from international agencies, particularly the World Bank, for its extent (Fundanga and Mwaba 1997). By April 2002, 257 out of a portfolio of 280 identified state owned enterprises had been privatized (OECD 2003), though these numbers may be somewhat inflated by counting individual economic units partitioned from a single entity (Craig 2000 comments on this, preferring an original number of state owned enterprises of 144). Of note, 65 percent of the entities were sold to Zambian individuals and 29 percent to foreigners, the remainder being wound up (OECD 2003).

The *Investment Act 1991* opened the path for the regulated entry of foreign investment into Zambia. The Act created the Zambia Investment Centre (the forerunner of the Zambia Development Agency) with a view to coordinating foreign investment efforts and determining relevant incentives to support such investments. These incentives included a variety of tax benefits, including....

Further agricultural market liberalization did not flow immediately with the wider reform process, due to the large 1992 drought which affected much of southern Africa and the food security concerns that such an event caused. However, by the 1993/94 season, the Government had removed all marketing and input subsidies and opened production to the control of the market (Saasa 1996). The speed of the general reform process and within the strategically significant maize sector in particular caused problems, with the private sector simply not having the capacity to fill the void left by Government. High interest rates prevented appropriate levels of private sector marketing, result in significant amounts of unpurchased production, while a lack of private storage facilities hampered the sector (Saasa 1996). Perhaps not surprisingly, the impact of these forces led to calls for the return of government intervention.

One critical outcome of the agricultural liberalization process, and belatedly the liberalization of maize markets in the early 1990s, was to induce a land substitution process towards other crops and away from maize (Zulu et al 2000). The decline in maize cultivation was most pronounced in remote and drier areas, where previous

high subsidies (pan-territorial prices and transport supports) had encouraged maize expansion in non-traditional cultivation areas since the 1970s (Howard and Mungoma 1996). The land substitution process is evidenced in Figure 7.9, where we contrast the area under maize production with a generated Six Crop series incorporating alternative marketable crops common in Zambia. The Six Crop series includes cassava, millet, sorghum, cotton, soya, tobacco.

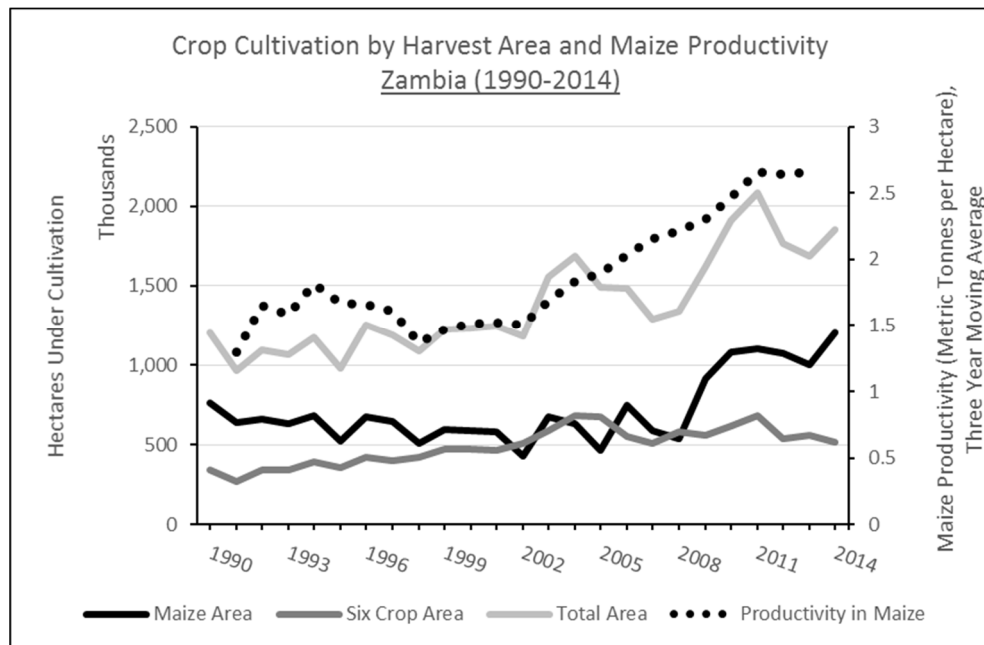


Figure 7.9: Crop Cultivation by Area, Author's calculations based on FAO and IndexMundi (cotton only) data.

Even after the reintroduction of maize and fertilizer supports in the latter 1990s (discussed below), convergence continued and was maintained until a further spike in maize production from 2008 onwards. Importantly, this more recent rise in maize production has resulted from an extensification in cultivation area, rather than a substitution against other marketable crops (see Figure 7.9). This extensification process has occurred concurrently with an intensification of production via increased productivity in maize cultivation, which after a series of weather-induced fluctuations in the 1990s began to rise steadily from 2001 onwards. This observation is consistent with the findings of Mason, Jayne and Myers (2012), who found that in 2006/07, smallholders responded to previous prices and production purchases by both extensifying and intensifying production.

## *Maize Bias Renewed*

Under pressure from stakeholders following the stuttering liberalization of the maize markets, the Food Reserve Agency was established by legislation in 1995, coming into operation the following year, ostensibly as a strategic food reserve. While broadly defined, the Agency has maintained an almost sole focus on maize. Its role was further broadened in the mid-2000s to take on a more prominent marketing function. It has a mission to buy maize at a pan-territorial price exceeding wholesale prices in major maize producing areas. The Agency's market distorting price policies have included offering farmers above market prices, subsidizing prices to select large-scale millers, and exporting to neighboring countries at prices below the FRA purchasing price. Between 2004/05 and 2010/11, the Agency purchased 30-86 percent of maize marketed by smallholders, accounting for roughly 25 percent of the government's total agricultural sector expenditure. FRA activities have made maize prices more stable as well as raised them above average maize market prices, by as much as 17-19 percent between 2003 and 2008. Policies have primarily favored maize net-sellers, that is, already commercialized farmers (Mason and Myers 2011: v-vi).

Meanwhile, the Fertiliser Credit Program was created in 1997/98 and in the season 2002/2003 large-scale fertilizer subsidies were re-introduced. Participating farmers could obtain between 200-800 kg on credit and during each of the three years of the program, an average 29,000 metric tons of fertilizers were distributed, particularly in the major maize producing regions of the Central, Eastern and Southern provinces. Repayment rates were poor however and the government's successor program, the Fertiliser Support Program, was designed as a cash-only input subsidy program targeting selected farmers. A standard package included 400 kg of fertilizers and 20 kg of hybrid maize seeds to plant one hectare of maize was designed. Annual volumes were a bit more than the double compared to the previous program, and beneficiaries were somewhat more evenly distributed over the country. In 2009/10, the program was renamed the Farmer Input Support Programme and continues to the present. While package size has been halved to 200 kg fertilizers and 10 kg improved seeds, total volume and the number of recipients have increased substantially (Ricker-Gilbert et al 2013), from 48,000 MT of fertilizers and 120,000 farmers in 2002/03 to 180,000 MT and 900,000 farmers ten years later (Ricker-Gilbert et al 2013).

Numerous factors such as the above-market prices offered by the Agency, the increase in fertilizers distributed through various schemes and consecutive years of favorable weather, seem to have contributed to the sharp increase in Zambian maize production over the last 10 years (Ricker-Gilbert et al 2013). Mason et al (2012) found that in 2006/07, smallholders responded to previous Agency prices and production purchases by both *extensifying* and *intensifying* production, an outcome evident when considering Figures 7.11. Similarly, Prowse and Hillbom (2018) also

indicate that it is primarily subsidized fertilizers that have had a statistically significant positive impact on long-term trends in output and yields.

The role of large scale farmers in maintain Zambian food security at the aggregate level has long since been superseded by small and medium producers. Since the turn of the century, much of this has been driven by the increase in medium-scale farming, farmers cultivating between 5-20 hectares of land and making up between 3-4% of producers. Sitko and Jayne (2014) caution against understanding the increasing presence of this class of ‘emergent’ farmers as evidence of a nascent agricultural transformation process. Rather, based on a survey of 183 of these emergent farmers, the authors identify a very different source of change. Here, the rapid increase in the number of medium-scale farmers is not due to successful accumulation by those previously cultivating fewer than 5 hectares, but instead can be primarily attributed to land acquisition by salaried urbanites and relatively privileged rural dwellers in a type of elite land capturing. Given scale economies, these farmers are best placed to take advantage of the Government’s production incentives, while also having previously acquired capital or better access to credit services by which to augment their operations.

Given that this emergent class is “overwhelmingly concentrated” along the line of rail (Sitko and Jayne 2014), there is a striking similarity between the experience of these emergent farmers and the ‘improved’ farmers of late colonial Northern Rhodesia. The targeting guidelines of the Farmer Input Support Programme support this view, where support is specifically intended to go to ‘viable’ farmers, where the concept of viability relate to farm size and the capacity of farmers to pay the upfront costs of participation. When the farm size limitation of 0.5 hectares already excludes 15-20% of rural households, and the participation costs are equivalent to 20% or more of the gross household income of the three lowest quintiles of rural households, it becomes evident that the benefits of the subsidies are being disproportionately accumulated by already competitive producers (Sitko and Jayne 2014).

### *Farm Block Model*

This seeming desire to support a trickle down approach is mirrored in the Farm Block model, introduced in 2006. Under the plan, the Government would identify areas countrywide that will be turned into farm blocks. More recently, it has been envisaged that such a farm block would be established in each of the 10 provinces, with the Government providing supporting infrastructure, such as road connections and electricity access, where necessary, with the view that the blocks would incorporate some form of agro-processing capacity.

Each farm block is supposed to have one core large-scale farm (core venture) of 10,000 hectares; one to three commercial farms (1,000-5,000 hectares); medium-scale farms (100-1,000 hectares); emergent farmers (50-100 hectares); and small-

scale farmers (25-50 hectares). Crops grown in core venture farms are meant to be predominantly for export. The smaller farms have the option of working in out-grower arrangements with the core venture or using common processing facilities. Development of the farm blocks has been slow, and the most advanced, Nansanga Farm Block in Central Province, is yet to become fully utilised. Also of note, seven of the proposed sites are brownfields developments – only those slated for Murchinga, Northern and Copperbelt provinces will look to identify greenfields developments (Tembo 2017).

As we addressed in Chapter 6, this form of operating structure is not exactly new in Zambia, and harks back to Operation Food Production of 1980 and the large State Farms of the early independence period, whereby the Government implemented settlement schemes for commercial farming, and the parastatal plantation and outgrower schemes used in the sugar, tobacco and cotton industries. Results to date suggest that the Farm Block model is likely to experience a similar level of success.

## **Spillovers: Opportunities and Threats for Local Actors**

A return to openness to foreign investment and a commitment to reduced government intervention represented a significant change to a Zambian agriculture sector that had benefited extensively from production subsidies. It presented foreign investors with opportunities to bring efficiencies to existing agricultural production, including former government-controlled marketing and processing practices, and innovate with new production possibilities.

The impact that these have had on the wider agriculture sector, and smallholders in particular, and how these relate to our theoretical understanding is the focus of this section.

### *Knowledge Spillovers*

The research of Sipangule et al (2016) was previously mentioned in Chapter 3, where its foreign investment findings were used to triangulate the validity of our major data source. More specifically, Sipangule et al (2016) undertake an analysis of the impact of commercial farms on smallholder outcomes. Given the nature of the study methods used, the analysis is limited to only 439 wards (sub-district level administrative areas) out of a total of 942 covered in Post Harvest Surveys between 2003/04 and 2013/14. Of these, 70 wards hosted commercial farms in 2003 and 87 in 2013.

Data on commercial farms was obtained using additional questions in the PHS, which enabled an understanding of the length of activity of the commercial farm, the origins of the farm owner and farm size. Of the 862 responses from commercial farmers, 726 were of Zambian origin, highlighting the long-standing post-

independence trend of increasing indigenization of the medium to large commercial sector. Of the commercial farms with foreign origins, 66.2% had origins in Zimbabwe, the United Kingdom or South Africa. Interestingly, the peak in the commencement of the foreign owned farms surveyed is in the late 1990s, which is generally consistent with our ZDA data, while with few exceptions, commercial farms are located close to transport corridors and/or urban centres, against consistent with our theoretical expectations. Perhaps importantly, in the context of our broader analysis, the data presented by Sipangule et al (2016) reflects that foreign owned commercial farms are usually bigger than their Zambian owned equivalents.

The principal findings of the research was to ascertain that wards with commercial farms were generally more populous and with higher densities, consistent with the locational concentration and that smallholders in these wards tended to have higher levels of fertilizer use, increased levels of technology (in the form of ploughs and tractors). The findings also demonstrate a changing impact over time, albeit in a relatively narrow nine year window. Between 2003 and 2013, wards with commercial farms move from having smaller farm sizes on average to larger farm sizes, in a situation where the average farm size increases in both wards with and without commercial farms. Similarly, wards with commercial farms move from having farms experience smaller maize harvests on average to larger maize harvests, again in a situation where the averages of both experienced significant increases (Sipangule et al 2016).

The general increase in fertilizer use identified is consistent with the overall increases in fertilizer use referenced previously, but the significant increase in wards with commercial farms demonstrate that access and knowledge spillovers are relevant in the Zambian context.

#### *Access Spillovers (Market Creation or Market Displacement)*

The creation of new markets for production through supply and production chain possibilities, often closely interrelated with the demonstration effects conceptualized within knowledge spillovers. Where foreign investors open up new forms of agriculture, local actors have the potential to not only benefit from employment opportunities, but also leverage the market access created by the foreign investment either through outgrowing arrangements or direct competition. This is particular significant in the case of export production, where foreign investors have the capacity to build the profile of an industry internationally, enabling local actors to leverage this profile and imitate or collaborate (for example via contract farming) on export processes, which would otherwise be too costly or beyond the capacity of local actors to develop.

The inverse of such a situation is where new foreign investment replicates the nature, if not the form, of existing agriculture in the area where it takes place. Such investment, while potentially the cause of new off farm employment opportunities

for local actors, creates the prospect of a displacement or competition effect against existing agricultural production. Such investment could have significant detrimental effects, particularly in an agricultural economy such as Zambia's in which such a large percentage of agricultural production has traditionally been focused on the domestic market. Alternatively, competition effects have the potential to induce local actors to take steps to improve efficiency, which would otherwise not have been taken.

This issue can be assessed using evidence from a subset of the ZDA data. The majority of observations for the 18 years between 1992 and 2009 contained information on the agricultural subsector being targeted by investors. Of the 526 observations available, 483 (or 91.8%) contain subsector data. Mixed Farming, which by standard definitions is categorized by a combination of crop and livestock production, made up 212 of the subsector observations, while Crop Farming represented a further 165. Such a heavy emphasis of investments in areas already being serviced by local actors, albeit at potentially lower levels of scale and productivity, speaks to a significant potential displacement impact from foreign investment in Zambian agriculture. A further 32 investors were focused on Poultry production and six on Dairy Farming, the nature of which both lend themselves to production for the domestic market, particularly in a developing country setting, and are likely to compete with local actors.

Of the remaining observations, 29 relate to floriculture and horticulture, which have long been target areas for the Zambian Government in seeking to diversify both agricultural production and non-traditional exports. The nascent floriculture industry had its genesis in the early years of the country opening to foreign investment. Between 1992 and 1996, there were 18 pledged investments into this subsector, with a focus on growing summer flowers for export, principally roses to Europe (via the Netherlands). The subsector had a prominent influence from Dutch and British investors. A number of these early investors continue to play a significant role in Zambian Floriculture exports. Of nine rose exporters explicitly listed in the ZDA 2015 Exporter Directory, four are included in our data set with investments between 1992 and 1996, combining for a total of 315 proposed employment opportunities. Of the 17 combined floriculture and horticulture exporters mentioned in the directory, 11 are present in the investment data. The injection of foreign investment coincides with a significant increase in flower exports. From 246 metric tons in 1991, floriculture exports increased year on year to 3562 metric tons in 1998, before sustaining levels in excess 3,300 metric tons per annum until 2010 (Mwansakilwa et al 2013). Horticulture exports experienced a similar rise. From 293 metric tons in 1991, horticulture exports increased year on year to 5130 metric tons in 1998, before continuing at levels above 4530 metric tons for the next nine years, peaking at 8,588 metric tons in 2002 (Mwansakilwa et al 2013).



A further subsector reflected in the data is the Biodiesel Production. Here, only four investments are identified, all in the early stages of the biofuel boom between 2007 and 2009. Here, the potential for market creation is obvious, with small holders able to efficiently produce biofuel crops as part of a mixed farming practice (Sinkala and Johnson 2012), which can support contract farming for larger producers. However, the Zambian experience again contrasts with the findings of Schoneveld (2014), whose research indicated that the primary end market for 37.6% of large-scale foreign investment in farmland was the production of biofuels, albeit noting the potentially speculative nature of such investments. The timeframe is also relevant here, with the shorter 2005-13 period covered by Schoneveld's study capturing the total biofuel 'boom'.

### *Employment Opportunities*

The creation of new employment opportunities for rural residents is often identified as the key benefit for host countries associated with foreign investment in the agriculture sector (Cotula 2009, FAO 2012). As identified in Chapter 2, such opportunities have the potential to provide off-farm employment for those operating in the subsistence sector, in turn increasing the potential to both increase consumption (for the benefit of the household) and increase capital investment in the household farming operations, supporting the potential for greater market integration.

Over the course of the study period, pledged employment in agriculture associated with investments was 121,808. Of these, 20,200 were listed against a single 2013 investment. That across the remainder of the investments, the next highest employment generation was 3,560, and that only 16 investments indicated employment between 1,000 and 3,560, suggests that this 2011 outlier is likely to be a typographical error. Contemporary newspaper sources suggest that the actual employment figures is likely to be closer to 5,000. Twenty-six investments were listed as generating no positive employment outcome.

Even discounting the 2013 outlier, the approximately 100,000 jobs proposed to be generated via foreign investments in agriculture is significant. To this end, it is relevant to note that within official Zambian Government statistics, the breakdown for formal employment in the agriculture sector (only available up to 2012) indicates a fluctuation between a low of 42,500 in 2003 and a 1993 high of 82,800.

Notwithstanding its limitations, it is possible to utilize the available data to further analyze the potential of investments to support increased employment opportunities in agriculture, and how such opportunities vary over time. To do so, the concept of the *capital intensity* of investments is introduced. The capital intensity of an agricultural investment is defined as the value of the proposed investment divided by the expected employment creation of that investment. As a corollary, the higher

the value of the capital intensity measure, the fewer the new employment opportunities being created for every dollar of additional investment.

The changing nature of investments is clearly evidenced in Figure 7.10, which reflects an increasing capital intensity over the study period, and particularly from the mid-2000s. In this instance, investment levels are adjusted to a common base and a five year moving average is adopted to smooth out year on year fluctuation. Turning to the origins of investment, Figure 7.11 provides a selection of six source countries and the respective capital intensity of the investments deriving from them. The clear evidence presented in the figures is that investments from Zimbabwe have a significantly lower capital intensity than other countries, which indicates that investments from that country produce, on average, a higher number of employment opportunities per dollar of investment.

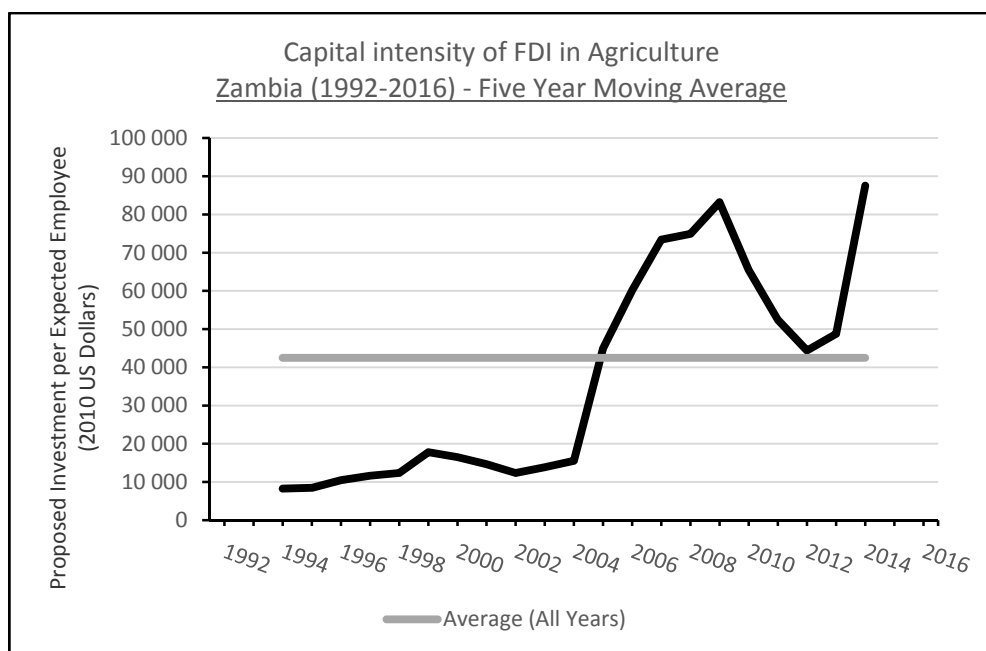


Figure 7.10: Capital Intensity of FDI in Agriculture, author’s calculations using ZDA data.

In order to further assess the potential interaction between employment creation and improved outcomes for smallholders, we turn to the evidence presented by Ahlerup and Tengstam (2015), who link a subset of the ZDA agricultural investment data being used in the current study to the Zambian Post Harvest Survey. In contrast to the current study, Ahlerup and Tengstam (2015) use all agricultural investment data available from the ZDA for the period 1994-2007, including those investment made by Zambian actors, linking this to three waves of Post Harvest Survey Supplementary Survey data from 2001, 2004 and 2008.

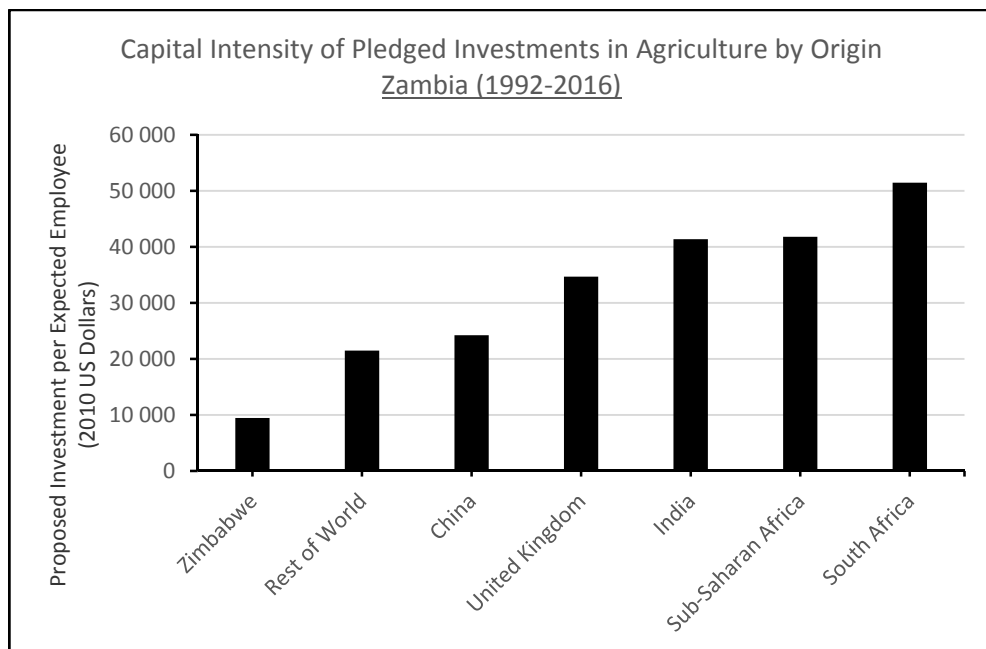


Figure 7.11: Capital Intensity of FDI in Agriculture by Origin, author's calculations using ZDA data.

Focusing on the proposed employment outcomes associated with agricultural investments, the authors demonstrate that there is a positive impact on the size of commercial farm wages available to smallholders in situations where there has been agricultural investment in the preceding five years. While the average long-run impact is not large in dollar terms, only three percentage of all households in the sample frame report this type of income, indicating that the impact for affected households is likely to be greater. At the same time, Ahlerup and Tengstam (2016) indicate that the impact of such investments is greater for those household controlling smaller farm sizes (that is, the land-poor). This is also to be expected, given that those with small farm sizes are most likely to be in the position of seeking off-farm work in commercial operations. At the highest end of land availability (those controlling 1.94 hectares or more, which make up approximately 2 percent of the sample), the effect becomes negative. This too is expected, as the availability of wage labor on commercial farms is liable to diminish with the capacity of larger farmers to generate sufficient on-farm income.

Matenga and Hichaambwa (2017) use three case studies to assess the impact of three forms of commercial agriculture on smallholders in Zambia, including the employment impact. The survey reviews the *plantation* model represented by Zambeef's Chiawa grain farm, the *outgrower* model reflected by Zambia Sugar's

Magobbo sugarcane outgrowers block, and the *commercial farming* model represented by the Mkushi block, a former area of white settler farming.

Commercial farming provides more off-farm employment opportunities, though these are generally lowly paid and casual. The other models, while providing limited off-farm employment within the block, were surrounded by other operators offering alternative opportunities. The authors identify processes of agrarian change occurring, particularly in the vicinity of the Mkushi commercial farming block, which has seen ‘satellite’ medium-scale commercial farms created through external investment and via the accumulation of land. Similarly, the authors find that the commercial farming model resulted in relatively stronger and more localized linkages with the surrounding economy than did either of the other two models (Matenga and Hichaambwa 2017). But the capacity to generalize from the three case studies is made complex by the very differing nature of their establishment, location and production methods, and the capital intensity of the Zambeef operation and the specialized nature of the inputs required for sugar production make the authors’ latter observation almost superfluous.

The commercial farming model case study does however tie the signs of a commercially-driven agricultural transformation process to the district which has seen the most significant volume of investment beyond Lusaka. It also suggests that while a large proportion of foreign investment has been directed into areas with potential market displacement effects (crop farming and mixed farming), the spillover benefits from such investment may balance these negative effects.

A key element identified by the World Bank (2011) in its *Rising Interest in Global Farmland*, was the potential displacement of people as a result of the transfer of tenure to commercial operators. Significantly, the report noted the important steps government must take to ensure equitable treatment and compensation for those required to move from land upon which they may live (and also farm). This concept of *physical displacement*, as opposed to the *market displacement* addressed earlier, was recently taken up in the Zambian context in the report “*Forced to Leave: Commercial Farming and Displacement in Zambia* (Human Rights Watch 2017). The report takes a case study approach to look at the impact that the commencement of commercial farming operations by foreign investors has had in six cases from the Serenje district of Central Province. Of the six cases, five are readily identifiable from the ZDA data, and the report indicates that the four operational farms are producing wheat and soya beans, as well as other crops, principally for export. The report presents data that across the six farms, over 90 families had been forcibly evicted, 12 families were subject to a court order for eviction, almost 50 families were at risk of displacement and one family had been resettled. Financial compensation had been paid in a minority of cases.

That physical displacement is not uncommon in the circumstances of foreign investments is evidenced by a 2015 National Resettlement Policy, which confirms that investors are responsible for resettlement and compensation of displaced

persons, with a lack of formal title being no hindrance to access. Where physical displacement does take place, the potential for foreign investors to offer wage employment in commercial farming ventures as part of compensation packages provides the opportunity to increase capital accumulation in off-farm employment.

## Conclusions

*A Diversified and Export-Oriented Agriculture Sector* is the first of 10 development outcomes within Zambia's Seventh National Development Plan (2017-21)<sup>48</sup>. Such a focus is not surprising in a situation where, as previously indicated, almost 60 percent of the population reside in rural areas and in excess of 50 percent continue to be engaged in the agriculture sector.

The potential for foreign investment to play an important role in this process, with enhanced employment opportunities, improved production techniques, within country agro-processing and the injection of much needed capital, is great, particularly to kick start the type of diversified export agriculture desired by the government. The ability for this to occur however, will remain limited if foreign investment continues to coalesce within the same limited geographic footprint as has been the case over the last 25 years, itself a reflection of that evident in the colonial era.

One of our key hypotheses regarding the potential benefits that foreign investment in agriculture can play in aiding structural transformation is in its capacity to overcome barriers to successful integration in areas previously cut off from markets. We hypothesized that while displaying a continued concentration around critical infrastructure and major markets, foreign investment in modern Zambia should be more widely distributed than in previous eras, given improvements in road transport (both in terms of all-weather roads and vehicular quality), which should result in both increased opportunities for the regional marketing of agricultural produce and greater accessibility of markets for more dispersed areas. Here, the expectation is the greater capital available to foreign investors has the potential, either directly or in partnership with government, to bring into commercial production areas otherwise isolated by limited infrastructure. This in many respects is the basis for the government's Farm Block policy, the implementation of which has yet to reap benefits for local communities. With our evidence demonstrating a continued concentration in foreign investments in the line of rail provinces, much of the country continues to miss out. Thus, the widespread belief, held by the World Bank (2011) amongst others, that foreign investment can unlock more peripheral areas has not played out in Zambia. Rather, in a path

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<sup>48</sup> GRZ, National Development Plan 2017-21, 2017, Lusaka

dependent fashion, we have seen a reinforcement of the existing patterns of foreign investment that were first triggered by the initial railway alignment in the first decade of the 20<sup>th</sup> century.

Provincial GDP figures, only available for 2014 and 2015, show the continuing domination of the four line of rail provinces in agriculture, despite the overwhelming importance of the sector in supporting rural livelihoods in the six peripheral provinces. In 2014 and 2015, the line of rail provinces accounted for 57.8% and 59.6% of agricultural contribution to GDP respectively, with the two traditional agricultural strongholds of Southern and Central provinces alone accounting for in excess of 36 percent on average<sup>49</sup>.

Our empirical assessment against the analytical framework suggests that infrastructure remains critical to any prospect of broadening the capacity of foreign investment to stimulate local agricultural production. Again, reference to the new Development Plan is pertinent here, where current transport infrastructure and insufficient market integration capacity are identified as key blockers to enhanced economic growth<sup>50</sup>. Beyond the evident path dependency in the location of foreign agricultural investments, there is also a colonial heritage in the origins of that investment. The same two source countries that led the initial agricultural drive into Northern Rhodesia over 100 years ago continue to play the dominant foreign role in the sector today. The evidence provided by our foreign investment data reveals that this colonial heritage in the agriculture sector diverges from the remainder of the Zambian economy, when taken as a whole. Here, the dominance of the former colony power and regional hegemon in agriculture is pronounced. This pattern is mirrored, to a lesser or greater extent, in the cases of Uganda and Mozambique, suggesting that Zambia is not unique in this experience.

We also hypothesized that foreign investment would focus on capital-intensive agricultural production, either in high input, high value crops or agro-processing, again benefiting from capital advantage over many local producers. Our evidence does indicate that the average capital intensity of foreign investments has increased over time, suggesting that the availability of employment opportunities per dollar invested is diminishing, but that a significant proportion of foreign investment continues to compete directly in the production lines dominated by local producers. Such investment thus has the potential to have a market displacement effect. One ameliorating consideration in this area is evidence that the study period has seen a general trend of continued extensification in production area, which could indicate that foreign investment may be playing a supporting role in bringing more agricultural land into production, which might otherwise be un- or underutilized.

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<sup>49</sup> GRZ, *Research Paper on Provincial Gross Domestic Product*, 2017, Lusaka

<sup>50</sup> See Development Outcomes 6 and 7 in GRZ, *National Development Plan 2017-21*, 2017, Lusaka

In Chapter 5, we identified that foreign investment in agriculture then Northern Rhodesia was drawn principally from the United Kingdom, South Africa and to a lesser extent Southern Rhodesia, and that this investment was heavily concentrated along the line of rail in a centrally-located development corridor stretching from the Copperbelt in the north to Livingstone in the south, this later significantly aided by government policies regarding land alienation. In this chapter, our assessment of the modern experience shows a recurring pattern in these elements, reflecting a spatial path dependence in the location of foreign investments in agriculture along the line of rail and a significant colonial heritage to the origins of those investments, with a comprehensive bias towards the United Kingdom, South Africa and Zimbabwe. What these findings mean for future agricultural development in Zambia will form the focus of Chapter 8.





# 8. The Foreign Factor in Agricultural Development

## Introduction

At the commencement of this study, we set out to answer three research questions in supporting our exploration of the foreign factor in Zambia's agricultural development. These questions were:

- How has foreign investment in agriculture impacted the development of the Zambian agriculture sector?
- Does the role of foreign investment in Zambian agriculture conform to received theoretical wisdom?
- Are there reoccurring patterns of foreign investment behavior in Zambian agriculture from the colonial era to present day?

In identifying these three questions, we also foreshadowed a more general discussion regarding the implications our findings have on the debate surrounding future agricultural development in Zambia.

Using an analytical framework derived from relevant economic and development theory, we have assessed the impact of foreign investment in the history of Zambian agriculture, focusing on two periods of strong institutional openness to foreign investment, and the intervening period of limited foreign investment and significant state intervention. In establishing the analytical framework, we identified the various channels through which foreign investment in agriculture is anticipated to influence local agriculture actors, and the factors which mediate the extent of that influence. Subsequently, we hypothesized expected outcomes for the two study periods and assessed the extent to which available evidence supported those expectations.

Below, we look to summarize the key findings from our empirical assessment of the influence of foreign investment in Zambia's agricultural development, and how this has impacted local agricultural actors. In the wake of these key findings, we look at the development of the agricultural sector in reflection to three major factors in the early Northern Rhodesian economy, and seek to untangle their respective influences on local agricultural actors. Following this assessment, we consider what

this might mean for setting future agricultural policy in Zambia through two distinct lenses. We conclude by commenting on areas in which the research within the current study may be extended.

## History and Agriculture in Zambia - Key Findings

In responding to our first research question, our assessment of Zambia's agricultural development over more than 90 years reflects the extent to which foreign investment has impacted the sector. From the initial decision to open the country to settler agriculture through to modern legislative frameworks to facilitate increased foreign direct investments, there has been a foreign factor within the Zambian agriculture sector. While the relative importance of foreign investment in Zambia's commercial agriculture production has clearly diminished since the colonial era, foreign investors continue to dominate production in some export-oriented sub-sectors.

As we assess the extent to which the Zambian experience has conformed with received theoretical wisdom, it is relevant to again consider the key elements of our analytical framework as depicted in Figure 2.2. Here, we anticipated that foreign investors in agriculture would seek to establish themselves from a locational perspective where productivity is high, where social overhead capital (infrastructure) is high and where costs are low. Our evidence shows that the Zambian experience accords with these expectations and this pattern has persisted over time. This is discussed further below. Furthermore, independent of the role of foreign investment in agriculture, the evidence considered in this study demonstrates that Zambia's African farmers have consistently and effectively responded to price incentives, and varied production in response to these, eschewing the concept of the target income theory. Similarly, African farmers have taken advantage of market opportunities where possible to increase incomes. In considering the interaction with foreign investment in agriculture, our assessment of available evidence has demonstrated the importance of mediating factors of spatial proximity and absorptive capacity in the ability of local agricultural actors to benefit from spillovers and opportunities presented by the presence of foreign investment in agriculture.

In two critical ways, the evidence presented in our study enables us to answer our third research question in the affirmative, as there appear to be critical elements of continuity from the colonial to the present day. Firstly, and as touched on above, there exists a spatial concentration of modern foreign investment in Zambian agriculture, which replicates patterns that developed during the colonial era. As anticipated by our analytical framework, this spatial concentration aligns with areas of strong agricultural productivity (as evidenced by soil quality and freedom from tsetse fly), high quality infrastructure (first in the form of railway proximity and

later major roads), and population concentration creating internal markets for production. Here, a combination of natural factor endowments and the exogenous supply of critical infrastructure combined to create a corridor of development and operate as a centrifugal force for foreign investment in agriculture. Such concentration increased during the colonial period and remains evident in foreign investment patterns today.

Secondly, there is an evident colonial heritage in the origins of foreign investment in Zambian agriculture, with key sources of investment from the colonial era (United Kingdom, South Africa and Zimbabwe) continuing to dominate investment in the modern period. Our analysis of foreign investment evidence across the entire Zambian economy between 1992 and 2016 indicated that this colonial heritage in the concentration of investor origin in the agriculture sector is not replicated across the wider economy. Similarly, our brief comparative study involving similar foreign investment data from Uganda and Mozambique suggests that the pattern of colonial heritage identified for Zambian agriculture may play out more broadly. The United Kingdom has played a disproportionate role in the sector when compared to the wider Zambian economy, while the roles of South Africa and Zimbabwe as investment origin countries are also marked. The more difficult question is why the pattern that exists within agriculture is more pronounced than in other sectors of the Zambian economy. Common official language, common civilization or culture (and its corollary cultural distance) and common legal heritage have long been considered as potential contributory factors in panel regressions seeking to assess causal determinants of foreign investment, but these factors are static across industrial sectors. It would appear that something else is driving this colonial heritage in the agriculture sector. While pronounced, our analysis of changes over time with respect to investor origin in the modern period (restricted as it is to Zambia and Uganda), suggests that the colonial heritage in agricultural investments may be fading, albeit slowly. Only time will determine the extent to which this observed relation of colonial heritage continues to have lasting effects, as the temporal distance from the colonial era lengthens.

In combination, these key findings have implications for the possible policy consequences of our study and for future research in this area.

## **A Counterfactual Past**

Our analysis of Zambia's agricultural history has demonstrated a number of key factors that have shaped the sector's development. Immediately above, we have highlighted the ongoing influence of major colonial players in modern foreign investment in Zambian agriculture and the concentration of colonial and modern foreign investment in the development corridor surrounding the north-south railway, constructed to support the copper industry.

In the wake of these findings, it is relevant to consider what our understanding of Zambia's agricultural development tells us about how local agriculture may have evolved in the absence of these three key factors:

- the copper industry
- the railway
- settler agriculture

While the history of these three key factors are significantly interlinked, they are not entirely interdependent. As outlined in Chapter 5, the decision by colonial authorities to open Northern Rhodesia to settler agriculture was a conscious and not uncontested one, as was the concomitant decision to alienate specific lands for this purpose. Similarly, it must be remembered that the railway was in its conception destined to link the Katanga mining region of the Belgian Congo with BSAC interests south of the Zambezi, and is therefore exclusive from the development of the Zambian copper industry which came to dominate the Northern Rhodesia economy from the 1930s onwards. It is therefore possible to separate these three key factors in a counterfactual consideration of their impact on local African agricultural development.

While copper discoveries changed the Northern Rhodesian economy beyond recognition, the path for the African population had arguably already been set, at least in the minds of the territory's administrators. In a similar way to the then resource poor Bechuanaland, British interests saw the Northern Rhodesian population as a labor reserve for mining and agricultural interests to the south, in Southern Rhodesia and South Africa, while a considerable number earned wages working the Katanga mines to the north, driven by taxation requirements which drew the Africans of Northern Rhodesia into the monetary economy long before the exploitation of copper deposits within the territory. Despite this, the rise of the Copperbelt mines had a dual beneficial effect upon local agriculture. Firstly, the mines provided a potential market for agricultural production in a situation where previous agricultural trade was limited by the long distances to foreign markets. Secondly, mining operations closer to home provided Africans the opportunity to combine mining work with more time on their own indigenous farming lands than was possible with mining work elsewhere. This was particularly the case in the years before the urbanization of the mining areas and the stabilization of mining populations. Ultimately, it is difficult to argue that the Zambian copper industry is to blame for the inherited structure of Zambian agriculture.

Similarly, it would be hard to argue that the railway (in and of itself) had a detrimental effect on African agriculture. Rather, in its early years the railway brought new market opportunities for local farmers to service those working with or along the line of rail. As discussed in Chapter 1, by dint of engineering and cost efficiency the railway traversed some of the territory's prime agricultural land, making the transaction costs of accessing the wider markets provided by the railway

lower than may otherwise have been the case. The local producers of the Tonga plateau in particular, who had already established relatively efficient permanent agricultural systems, can be readily identified as potential beneficiaries of the coming of the railway. Similarly, the Lozi people of Barotseland, with its strong traditional cattle culture, could be seen as potential winners from a railway that could reduce the time and effort required to access distant markets.

Ultimately however, it was the decision to introduce settler agriculture which likely played the largest part in the shaping of the history and modern structure of the Zambian agricultural sector. In its absence, there would have existed significant added incentives for local producers to increase production for the expanding local market. The decision by colonial authorities that there was insufficient capacity amongst the local population was never proven, and the subsequent alienation of productive land close to the line of rail meant that it the theory was never able to be put to the test. What we do know from our analysis in Chapter 5 is that local producers did respond when (albeit limited) market opportunities arose in the 1930s, to the extent that colonial authorities were forced by settler interests to distort the market against them. We have also identified that the arrival of settler agriculture brought a range of knowledge, techniques and capital accumulation opportunities that enabled local producers to improve the quality and quantity of their output. What remains uncertain is whether the opening of increased market opportunities may have provided sufficient stimulus to such improvement had settler agriculture not been a factor in the colony. The territory already had established and functioning agriculture structures of the Tonga people of the southern reaches of the colony, as well as the cattle rearing traditions of the Lozi in Barotseland. This tends to suggest that given the opportunity to do so, perhaps in conjunction with imports from the already burgeoning Southern Rhodesian agriculture sector, a locally-dominated agricultural sector could have serviced Northern Rhodesia, particularly if supported with the type of government investment devoted to settler agriculture in the pre-independence period.

## Two Lenses on Policy for Targeting Development

From a locational perspective, foreign investment in Zambian agriculture matches our theoretical expectations – investors seek out the best available farming land that with a combination of appropriate infrastructure can lower transport costs in linking to national and international markets. As discussed above, there exists since the colonial era a spatial concentration of foreign agricultural investment in the line of rail development corridor. We believe that this presents the Zambian government with two alternative and competing policy opportunities; one that seeks to increase

foreign investment and the other which seeks to restrict it to within specified parameters.

Should the government wish to increase foreign investment in agriculture, it might do so by focusing its efforts in existing areas of high agricultural productivity, rather than its current country-wide approach articulated most clearly in its Farm Block development model and maize input subsidy programs. This form of focused investment is rarely politically expedient in the type of democratic electoral system currently extant in Zambia, without significant capacity to sell the wider benefits. The electoral challenge of such targeted policy is significant, particularly in a country where almost 60 percent of the population continue to reside in rural areas. Yet in a capital constrained environment, it is vital and economically rational to undertake such a targeted approach, banking on a trickle-down effect on the remainder of the economy. The alternative to such a targeted investment approach based on location is to limit foreign investments to those that address the specific needs of Zambia's rural population. To consider what these needs may be, we can reinterpret our analytical framework from its specified investor-focus to one which has at its center the local agricultural population. Both alternative approaches are considered below.

### **‘Picking Winners’ – Locational Specificity**

From an institutional perspective, the experience of the Zambian agriculture sector has been a long-term example of the trickle-down economic theory. In its earliest incarnation, African employees were expected to learn from laboring on settler farms, with a view to returning to their villages with knowledge of improved agricultural techniques and perhaps some limited capital upon which to call. In the post-war period, this gave way to targeting African producers with the potential to make the leap into greater commercialization in locations in close proximity to settler agriculture. Most recently, it has been evident in the successful concentration of medium-sized farmers in their response to government incentives and fertilizer subsidies. The process of targeting limited government resources for agriculture was advocated as recently as 2013 by the World Bank's chosen research team on the prospects of an African Green Revolution. Otsuka et al (2013) encourage governments to focus on those areas already best placed to succeed:

Given...the high cost of fertilizer for most African farmers, the transition to more intensive farming may initially be restricted to bread basket areas with good agricultural potential and ready access to markets.

The final phrase of the above quote captures the second policy implication, again drawn from the analytical framework. A focus on areas of high agricultural

productivity, while a necessary condition for drawing foreign investment in agriculture, is in itself insufficient. This must be incorporated with ready access to markets, be they national or international. Beyond the immediate vicinity of population centers, ready access relies on low transport costs and concomitantly, quality transport infrastructure.

Based on the findings of this study, we proffer that the government could focus its agricultural and infrastructural development attention on Eastern Province, creating an east-west development corridor to match the existing centrally placed north-south corridor between the Copperbelt and Lusaka. Such attention is likely to come at the expense of alternative rural development initiatives in the other five peripheral (non-line-of-rail) provinces of Luapula, Murchinga, Northern, Northwestern, and Western. In Chapter 5, we identified the early key role of Eastern Province as a center for settler farming, including the principal role tobacco exports played in the early financial viability of the territory. The decline of this area as center for commercial agriculture was also charted, when faced with significant infrastructural barriers to market access that combined with poor management practices to lead to a decline in tobacco farming.

In the most recent census in 2010, Eastern Province was the country's third most populous province (representing 10.6% of the country's total) and exhibited the third highest population density (at 31 persons per square km, almost double the national average). Despite this, the province accounted for less than 5.5% of the country's GDP in both 2014 and 2015, the only years for which provincial figures are available<sup>51</sup>, while over 87 percent of its population live in rural areas and 70 percent meet the Government definition of living in poverty<sup>52</sup>.

At the same time however, Eastern Province represented the third highest contributor to agricultural GDP in both 2014 and 2015, while being the country's largest maize producer<sup>53</sup> (despite having one of the lowest maize yield rates of all provinces). Eastern Province also accounts for approximately 60 percent of the country's cotton production and the overwhelming majority of burley tobacco production<sup>54</sup>. Both textiles and tobacco industries are among the ten subsectors identified in the Seventh National Development Plan (2017-21) as potential quick win areas for the acceleration of job creation<sup>55</sup>.

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<sup>51</sup> GRZ, *Research Paper on Provincial Gross Domestic Product*, Central Statistics Office, Lusaka, 2017

<sup>52</sup> GRZ, *Living Conditions Monitoring Survey*, Central Statistics Office, Lusaka, 2015

<sup>53</sup> GRZ, *Research Paper on Provincial Gross Domestic Product*, Central Statistics Office, Lusaka, 2017

<sup>54</sup> Zambia Data Portal, Agriculture Statistics, May 2016

<sup>55</sup> See Annex II in GRZ, National Development Plan 2017-21, 2017, Lusaka

Map 1.2 is demonstrative of the province's agricultural potential, and yet as indicated in Figure 7.9, Eastern Province was targeted for only 1.7% of the total value of foreign investments in the 25 years to 2016. At this point, it is pertinent to note that even this tiny figure is almost equivalent to the combined 1.74% of the total value of foreign investments linked to Murchinga, Northern, Northwestern and Western provinces.

Better integrating Eastern Province into the national and regional economy presents the prospect of increasing agricultural marketing opportunities and attracting productivity enhancing foreign investment. Such an approach must coalesce around infrastructure improvement, and it is relevant to note the current government focus on the Nacala Corridor, which in its totality links Lusaka to the Mozambique port of Nacala via Malawi. A deep water port, Nacala provides the most direct link from Zambia to the Indian Ocean, but access to it as an alternative to Dar-es-Salaam in Tanzania or other southern African ports has been limited by poor quality road infrastructure. This has been the basis of improvement activities for the past 10 years, supported by international donors and the African Development Bank (African Development Bank 2010), and the completion in 2014 of a 24km rail connection between Chipata and the Malawian rail network.

Perhaps more importantly, recent efforts were engaged in establishing a rail corridor between in Nacala and significant coal mining activities in landlocked northwest Mozambican province of Tete (via Malawi). The new railway was inaugurated in 2017. Zambia is anticipated to leverage off these investments, and in 2017 the government announced the construction of a new 389km greenfield railway line linking Chipata in Eastern Province with Serenje in Central Province, which would connect the Zambia's existing north-south development corridor with Nacala railway operations in Malawi. China Civil Engineering Construction Corporation has been engaged by the government to construct the new line<sup>56</sup>, reminiscent of the significant role Chinese engineering capacity played in the construction of the TAZARA rail link in the 1970s.

Notwithstanding the significant opportunity to support agricultural development and encourage foreign investment in Eastern Province, a key feature of the Chipata-Serenje rail proposal is that it is not ostensibly an agricultural development project. Completion of the rail link will provide an alternative link to Indian Ocean ports that is at least 500km shorter than competing lines, making the project one of significance to mining operators and manufacturers seeking to export, particularly to Asian markets. This has the potential to support the government's efforts in focusing development efforts on this region, given the mutual benefit to be derived for urban consumers and industrialists in the existing north-south development corridor. The current regional environment present a significant opportunity for

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<sup>56</sup> GRZ, *Environmental Impact for the Chipata-Petauke-Serenje Railway Line*, Ministry of Transport and Communication, Lusaka, 2017



Zambia to reorient its development path through the addition of an eastern axis. Zambia enjoys good political relations with its neighbours and Southern Africa is enjoying a sustained period of peace. Meanwhile, the majority of investment to finalise the Nacala corridor has occurred in Mozambique and Malawi, and is already in place with the backing of international donors and the African Development Bank.

Beyond the usual caution that must be associated with the political announcements of major infrastructure projects in Sub-Saharan Africa, where the actuality of development often fails to match the vision of the announcement, is the previously cited research by Berger and Enflo (2015), which highlighted the relatively smaller returns that latter wave infrastructure developments create compared to initial sunk investments, and the seeming path dependent nature of urban development in the African context expressed by Jedwab and Moradi (2016). To this end, it is reasonable to reflect upon the limited consequential agricultural development that flowed from the completion of the TAZARA rail link in the 1970s, though the agricultural potential of the area traversed is arguably less than that presented by Eastern Province.

### **‘Inverting the Pyramid’ – Reimagining the Analytical Framework**

In developing our analytical framework for the study in chapter 2, and as graphically represented in Figure 2.2, we identified three ways in which local agricultural actors, and regional communities, may benefit from foreign investment in agriculture:

- *knowledge spillovers* (demonstration effects, labor mobility, competition effects)
- *access spillovers* (export capacity, supply opportunities, improved infrastructure, production-chain possibilities)
- *employment opportunities* (directly or via associated production and consumption linkages).

While foreign investments are often touted as being beneficial because of the employment opportunities they may create, a Government policy setting that expressly focuses investment approvals on the demonstrated delivery of spillovers to the local economy would be novel in modern African agriculture.

In some respects, such an approach would mirror the technology transfer policies adopted to significant success during East Asian industrialization latter half of last century, though the market access and labor cost-savings that drove large corporations to agree to such policies in East Asia are not replicable in the modern African context, particularly in the agricultural sector. While likely to be more palatable to the Zambian electorate than the spatial concentration proposals outlined above, such an approach is unlikely to garner favor with international investors in an era of highly mobile capital. Ultimately, an ambition by the Zambian government

to target foreign investment in agriculture by tightly specifying local flow-on effects is likely to result in a diminishing of investment as investors shift capital to less controlled environments.

## Extending the Research

It is hoped that the findings of the study will be of interest for policy makers and researchers in all less developed countries that have or are experiencing foreign investment in the agriculture sector. The single country case study approach adopted has provided scope to present a detailed analysis of the role played by foreign investment in the development of Zambian agriculture in a long-run perspective. It does not however, provide the opportunity to make general statements about the phenomena identified in the Sub-Saharan or the broader developing country context. As previously acknowledged, this is a significant limitation in the study method. Looked at in a different light, the findings obtained using the chosen method provide a road map to take further research in this field in two directions.

Firstly, the study has clearly demonstrated that the agriculture sector in Zambia has experienced a divergent pattern of foreign investment in modern times to that of the Zambian economy more broadly. This pattern was also clearly demonstrated to exist in a brief comparative analysis undertaken using data from Uganda and Mozambique. This analysis presented evidence of a pronounced role played by former colonial powers and regional hegemony in agricultural investments in all three countries, a pattern not replicated across other sectors of the economies. Extending this research to further African countries, data permitting, would provide an opportunity to examine whether the divergent patterns of foreign investment in agriculture evident in the three countries considered are seen more widely in the developing country context, and particularly in Sub-Saharan Africa.

Secondly, taking the divergent investment patterns seen in agriculture described above as a point of departure, a further opportunity to extend research in this area would be to replicate routinely used economy-wide cross country regressions of foreign investment determinants with a focus on bilateral agricultural investment only. Data permitting, such analyses will enable an assessment as to whether the drivers for foreign investment seen at the economy-wide level are shared by agriculture, or whether these are different, as the evidence presented in our study might suggest.

## Concluding Remarks

As of June 2017, Zambia remains classified by the United Nations and one of the world's 47 Least Developed Countries<sup>57</sup>. For the country to progress from its current position, Zambia requires a significant agricultural development, a point acknowledged by the government in the Seventh National Development Plan (2017-21). Without such development, the Zambian economy's continued transition towards a service-based economy risks resulting in the type of low productivity underemployment identified by Lewis (1954) more than 60 years ago. In a capital constrained environment, the opportunity for Zambia to benefit from foreign investment in the agriculture sector is evident. Our study, grounded in economic theory and an analysis of evidence regarding the role of foreign investment in the country's agricultural development, suggests that given current settings and in the absence of the type of major structural break proposed earlier in this chapter, foreign investment will continue to coalesce around the existing north-south development corridor. In light of the evidence presented around the importance of spatial proximity to the success of the impact channels within our analytical framework, such an outcome is unlikely to stimulate or support the extent of additional development required in the sector. In such a situation, the government risks resorting to a continuation of inefficient agricultural subsidy policies that, though adequate in supporting short-term livelihood outcomes, have had little effect in transforming the agricultural sector.

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<sup>57</sup> United Nations, *World Economic Situation and Prospects 2018*, New York, 2018



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# Appendix

## Data Cleansing

Steps taken to refine *Zambia – All Industries – All Years (2017) Data Set*:

1. Full Data Set (All Industries, All Investors, All Years) N=5217
2. Remove those observations in which the sole origin of investments is Zambian, as well as those with no investor origin information. Where there exists a joint venture in which Zambian is listed first, flip investor origin to list Foreign Investor first. Refined Data Set for All Industries, All Years N=4124
3. Cleanse Manufacturing Subsector listings where over-writes occur. For example: TobaccoCrop Farming to Crop Farming (for Universal Grain Ltd), productsDairy Farming to Dairy Farming (for Dairy Gold Ltd). N=183
4. Clean Agriculture Subsector listings where over-writes occur. For example, FarmingCrop Farming to Crop Farming, TobaccoPoultry to Poultry (for Hybrid Poultry (Z) Ltd). N=6
5. Transfer Agro-Processing investments from Manufacturing Agriculture(M) (N=55) to join those Agro-Processing investments already listed in the Agriculture sector (N=9)
6. Transfer following from Manufacturing to Agriculture, with the reference Agriculture(M):
  - 1x Beef Processing
  - 2x Biofuel Production
  - 4x Cotton Ginnery
  - 6x Crop Farming
  - 3x Dairy Farming
  - 1x Mixed Farming
  - 1x Production of Biofuels
  - 1x Seed Production
  - 1x Stock Feed Production

- 1x Sugar Factory
7. Transfer following from Manufacturing to Transport, with the reference Transport(M):
    - 1x Cargo Haulage
  8. Transfer following from Agriculture to Manufacturing, with the reference Manufacturing(A):
    - 1x Non-metallic mineral
    - 2x Food, Beverage and
  9. Transfer following from Services to Agriculture, with the reference Agriculture(S):
    - 1x Agro-Processing
    - 1x Biofuel Production
- 

Steps taken to refine *Uganda – All Industries – All Years (2017) Data Set*:

1. Full Data Set (All Industries, All Investors, All Years) N=6474
2. Remove those observations in which the origin of investment is Uganda (that is, Country = Uganda) N=2485, of which N=448 are in Agriculture
3. Refined Foreign Investment All Industries, All Years N=3989
4. Transfer from Manufacturing to Agric, Hunt, Forest & Fish(M) N=140
5. Transfer from Agric, Hunt, Forest & Fish to Manufacturing(A) N=17
6. Transfer from Agric, Hunt, Forest & Fish to Transport, Storage and Comm(A) N=1
7. Transfer from Transport, Storage and Comms to Agric, Hunt, Forest & Fish(T) N=1

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    - 1x Biofuel Production
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# Foreign Investment in Agricultural Development

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This study grounds a highly charged debate on agriculture in developing countries within economic theory, by establishing a structured analytical framework for considering the potential role of foreign investment in supporting agricultural development. The analytical framework developed is then applied to assess the impact of foreign investment in agriculture in the case of Zambia. The study considers long term impacts of foreign investment in agriculture, at all times seeking to balance the need for historical context with the theoretical underpinnings of the analytical framework. To do this, the study compares the colonial administration of Northern Rhodesia (1924-1964) and the modern multi-party democracy era (1992-2016) in Zambia, two periods of broad openness to foreign investment, while also assessing the post-independence era of the first and second republics (1965-1991). In doing so, the study considers how foreign investment has impacted the development of Zambian agriculture, considers whether the Zambian experience conforms to received theoretical wisdom, and assesses the extent to which there exist reoccurring patterns of foreign investment behavior from the colonial era to the present day.



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