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Understanding Socio-economic and  
Environmental Impacts of Large Scale Land  
Acquisitions in Zambia: a case study of  
Nansanga farm block



Andrew Chilombo

Submitted for the Degree of Doctor of Philosophy  
School of Geosciences  
The University of Edinburgh

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## Declaration

In submission for the degree of Doctor of Philosophy (PhD), I declare that this thesis is entirely my own work, except where acknowledged and or referenced, and that this work has not been submitted anywhere else in whole or in part for any degree or professional qualification.

A handwritten signature in black ink, appearing to read 'Andrew Chilombo', written in a cursive style.

Andrew Chilombo

September 2019

# *To my family*

*for the belief, support and unwavering prayers*

## **Abstract**

The surge in large-scale land acquisitions (LSLAs) in the global south has captured the attention of activists, development practitioners, policy makers and academics. Whilst proponents of LSLAs speak of opportunities to provide food security, biofuels, eco-tourism etc., opponents have mainly been concerned with the fate of local communities. A growing number of studies show that local communities can (potentially) suffer from land dispossession and involuntary displacements, environmental degradation, diminished local food security and sovereignty, casualisation of job opportunities and curtailed access to water resources. But there is more to LSLAs than these starkly opposing claims; LSLAs can be lengthy and complex operations, cancelled, slowed down or reshaped by diverse, socio-cultural, political and biophysical landscapes in which they unfold.

The polarised claims about LSLA deals are based on political, socio-economic and environmental (SEE) dimensions and footprints of the phenomenon. In light of the polarised claims and the socio-cultural, political and biophysical landscapes in which LSLA deals unfold, the aim of this thesis is to understand the SEE impacts of LSLA deals in Zambia, taking Nansanga farm block as a case study.

Nansanga farm block is part of the government of Zambia's 2002 parliamentary decree agricultural program to establish nine farm blocks in each of the then nine provinces. Nansanga farm block, established among the Lala people in Senior Chief Muchinda, is the most developed of the planned nine farm blocks. The farm block is established on 155 000 ha of wet miombo woodland in central province. The land tenure had to be converted from customary to leasehold to pave the way for investments by urbanites and foreigners.

Understanding SEE impacts of LSLAs has been marred by methodological and epistemological challenges. These challenges are linked to the evolution of LSLA deals; they are punctuated with cases of scaling down production levels, cancellations, and abandonments or transformations of business investment models. Investors can change, for example, from production of biofuels to food crops or mining. Such changes trigger different intended and non-intended consequences. In addition, LSLAs are an incipient phenomenon whose impacts are difficult to grasp without (reliable) baseline information on the affected areas and communities. In the absence of baselines, studies to assess short to medium term outcomes are difficult to interpret.

Taking Nansanga farm block as a case study contributes to the post 2013 LSLA research agenda that has called for a shift in attention from quantifying 'grabbed' hectares of land and naming 'land grabbers' to learning about the processes and impacts of land deals where they happen. Thus, context-specific understandings of SEE impacts become important to assess vulnerabilities to external influences, as well as benefits and costs of LSLA deals in communities where they unfold.

To understand the SEE impacts at community level, I used mixed methods. Ethnographically, I engaged with communities in Nansanga as 'experts' of their own experience of the farm block in their environment. I learned from them. To understand the SEE impacts, the methods were largely informed by rural participatory appraisal approaches. The empirical data presented in this thesis, are therefore, 'co-produced knowledge' with community members.

In terms of structure, the thesis is divided into four general parts: setting thesis stage and study site (Chapters 1 – 3); literature review (Chapter 4); empirical chapters (Chapters 5 – 7); and the synthesis and conclusion (Chapter 8). The thesis presents results on four aspects of

LSLAs. First, it proposes a conceptual framework to improve our understanding of LSLAs (Chapter 4). Second, the thesis presents results on the role of formal and informal institutions in shaping LSLA deals and their outcomes (Chapter 5). Third, in Chapter 6, I present results on the political ecology of LSLA deals in limbo of development. Fourth, Chapter 7 is focused on understanding how communities cope with impacts of LSLA deals in *limbo of development*. In Chapter 8, I synthesise the key findings from the thesis before concluding with a reflection on how the findings relate to the broader scholarship on LSLAs, the general agrarian and development questions that the findings raise.

Overall, the thesis has contributed to understanding the SEE impacts of LSLA deals in *limbo of development* in a country that is a target for LSLAs. In the absence of baselines, the thesis has looked at the biophysical and socio-cultural uses of the miombo woodland where Nansanga farm block has been established, thereby developing an ecological and socio-cultural perspective and boundary that highlights a research path for understanding impacts later in Nansanga. The thesis has also looked at institutional environment of Zambia as a host country, the political ecology of 'failed' LSLA deals and how affected communities cope with unfulfilled promises of LSLA deals.



## **Lay summary (English)**

In most sub-Saharan African countries, rural communities depend on land for their agriculture, fuelwood, wild fruits, building materials, traditional medicines and traditional practices, among other things. Land is also a mark of identity. Zambia is not an exception. When somebody says they are Zambian or American, it is because there is a land somewhere called Zambia or America, respectively. In Zambia land is divided into customary land and state land. This division was done during colonialism for the benefit of colonial masters. State land is managed by the government through the Commissioner of Lands at the Ministry of Lands and Natural Resources. Customary land is managed by traditional chiefs. State land is a lot smaller than customary land though the exact sizes are not known. At independence, state land was 6% and what we now call customary land was 94%. However, research now suggests that customary land has reduced in size to about 51-54% of the total size of the country because the government continues converting customary land for development projects.

Zambia has a lot natural resources that include land, water and minerals. Mining is the most important economic activity. Many people in rural areas are engaged in agriculture as peasant farmers. The government of Zambia has been trying to grow the economy of the country by investing in the agriculture sector by attracting investors to invest in agriculture, taking advantage of land, water and the youthful population of the country. In 2002 the government decided to establish commercial farms in each province on customary land to help develop rural areas, create jobs to reduce rural-urban migration, and to ensure food security. One of them is called Nansanga farm block. To establish farm blocks, customary land was converted to state land, and the

government took charge of land administration. This has been an example of large scale land acquisition by people with power and money, getting land from poor rural people. These people called investors, are either foreigners or Zambians. When they get land from rural people, they plant crops for export. Some investors grow plants to produce fuel for vehicles, and others buy land and then resell it later when the price of land goes up. When this happens, there can be socio-economic advantages and disadvantages for rural people. The environment can also be disturbed.

In this thesis, I have taken Nansanga farm block about 155 000 hectares in central Zambia to study the socio-economic and environmental advantages and disadvantages of the farm block. Between 2016 and 2018, I travelled to Nansanga three times to talk and live with community members to understand the socio-economic and environmental advantages and disadvantages. From the findings, the government converted customary land, and sold it people who promised to invest, however the government has failed to complete the farm block infrastructure, and the investors have not invested anything. Tobacco production and manganese mining are the most important economic activities that are creating employment for the local people, on one hand, but also leading to deforestation on the other. Local communities are also leaving production of food crops to work in the mines and tobacco production, risking famine because the money they are paid is not enough to supplement purchase of food. Manganese mining is also leading to landlessness because some people are selling their land to the mining companies. Finally, the government of Zambia does not have the capacity and resources to manage large scale land acquisitions, and the approach of farm blocks needs to be changed because farm blocks are

more likely to reinforce socio-economic and environmental problems in rural areas rather than improving them.

## Lay summary (Bemba)

Ifyalo ifingi ifyabela mwisamba Iya Afilika fyalishukila mushili nangu impanga shakulimamo. Nakuba impanga shine ishi shilapela abantu inkuni, ifisabo fya kulya, ifyakukulila amayanda, amalalo, ukupanga imiti yakundapila amalwele nemiti yakubomfya mumikalile nafimbipo. Icalo ca Zambia naco cine cabafye nga ifyalo fimbi mwisamba Iya Afilika mukubomfiwa kwa mpanga. Mukulundapofye, umushili waba cishibilo ca bantu bekalamo.

Elyo umuntu asosa ati mwina Zambia nangu mwina America, ici cipilibula ukuti kwaliba impanga iyitwa Zambia nangula America, uko uyo muntu atatuka. Mu Zambia impanga yaakanishiwa pabili, impanga ya shamfumu elyo ne ya buteko. Ukwakanya kwachitilwe na basungu ilyofwe baletaka ichi calo kale pakuti balesangamo ubukumu bwa makwebo. Impanga yabuteko itungululwa na kabungwe kabuteko akalolesha pa mushili nefilengwa na Lesa (Ministry of lands and Natural Resources). Elyo impanga imbi itungululya nangu ilolekeshiwa ne shamfumu, sha cifyalilwa. Impanga shabuteko shinono mubukulu. Impanga shasha mfumu nangula tashaishibikwa bwino ubukulu bwashiko shena kwena shikalamba ukucila impanga sha buteko. Pakupoka ubuntungwa, impanga yabu teko yalifye Mutanda paa mwanda (6%), lelo impanga yashamfumu yali amakumi pabula naine (94%) pampanga yonse iya calo. Nangu cabe fyo mukupitakwanshita caisalanga ukuti impanga yasha mfumu yaliya ilecepelako mubukulu kuti yabafye amakumi yasano na kamo nokufika limbi pa makumi yasano na cine (51% to 54%) pa calo cha Zambia. Icalenga ifi mulandu wakuti ubuteko bwalikonkanyapo ukubulako impanga ya shamfumu nokuicita impaga yabuteko ilyo ubuteko bulececeta ukutwala ubuyantanshi mu mpanga ya shamfumu.

Zambia yalikhwata ubukumu ubwingi ifilinga umushili, amenshi, ulubwe ulwingi elyo nefilengwa na Lesa. Ukufukulula ulubwe emulimo uukalamba uupakamishya icalo. Abantu abekala mumishi baba mumulimo wabulimi. Elo banonofye. Ubuteko bwa calo ca Zambia bulesha ukwimya icalo pa mulu, muma kwebo ukupitila mu bulimi. Eco ubuteko bulafwaya abakubika indalama mubulimi. Bucita ifi ukucetekela ukubofya umushili, amenshi elo fye misepela ya calo pakufuntula ubuyantashi bwa calo. Mu 2002 ubuteko bwatendeke ukubika amabala ayakalamba muli cila muputule wa calo ca Zambia mu mpanga shaba shamfumu pakuti mwingaba ubuyantashi, mumishi ukubikamo ishanchito kumisepele, ukulima ifyakulya ifingi. Nansanga farm block e ncende baba lilepo ukufuntula mubulimi. Ubuteko ebwaleleleleshapo ukuti baipange incende yabulimi. Nakuba iyi ncende yafumine kushamfumu. Ici cali cilangililako cakupokolola impanga kubekala calo ba mu Nansanga, ababusu bene bene ku bantu ba amaka ne cuma. Aba bantu ni bashibukwebo, limo ni bamwinsa elyo limo bena Zambia. Bakabila ukubomfya impanga mubulimi bwafisabo fyakushitisha kunse ya chalo, nangu bapangamo amafuta yaba motoka. Elyo bambi bena basungafye impanga pakuti baiseshitisha panshita imbi ilyo imitengo yakushitisha yanina. Ifi fitwala kubukumu na mafya mubwikashi bwa bekala calo, elyo ne mpanga ilalufyanishiwa.

Muli aya masambililo yamuli ici ci tabo, nabulapo Nansanga farm block iyakula 155,000 Hectares iyaikalila pa kati ka calo ca Zambia, pakuti tu sambililepo imikalile yabu yantashi, ne mimonekele yancende. Tulefwaya twishibibe ifisuma ne fibi ifyatumbuka muli ili bala. Pakati ka 2016 na 2018 naile kuli ii ncende pa miku itatu nokuya ikala na bantu nokulalaanda nabo pafya buyantashi elyo namafya bashingwana nayo. Mufyasangilwemo, icakubalilapo, ubuteko kwasendele impanga iikalamba saana nokushitisha kuli bashimakwebo bakubikamo indalama

mubulimi, lelo ubuteko bwalifililwe ukubikamo ifisolobelo ififwaikwa, ici calengele bashimakwebo ukukana bikamo indalama nelyo fimo. Ubulimi bwa fwaka nokwimba ilibwe lwa Manganese, e ncito shikalamba abantu bashintililapo. Kulubali lumbi ici citwala kubonaushi bwa miti yampanga. Abekala mushi balebomba imilimo yakwimba ilibwe nokubombelela muma bala yafwaka. Ici cileleta isakamika palwa cipowe, elyo no kushala ukwabula impanga pamulandu wakuti abekala mushi baleshitisha impanga shabo kubemba ilibwe. Na impanga yakulimamo ileya ilecepelakofye kumulandu wa kushitisha ku tubungwe twa mikoti. Mukulekelesha, ubuteko bwa calo ca Zambia tabwakwa ubulamba na ifisolobelo fya ku panga amabala ayakalamba ayakumine kubuyantanshi bwa calo ne mikalile ya bantu. Nakuba aya mabala yakalamba kuti yakushishakofye amafya ya bantu abacetekela pa mpanga mu bwikashi bwabo.

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If this were a journey, it could only rightly be dubbed, 'Abrahamic,' inspired by a rare leap of faith. I choose to call it an evolutionary process that has accidentally led to a PhD. Yes, an accident because it is like any other life eventuality without any transcendental, hereafter eternal abode. Who thought this was within my realm of possibilities? Time measures motion of bodies, but it is also the crucible in which life events are moulded, and out of which they all cease to be – perhaps the defining measure of Being and Nothingness. During my PhD evolutionally process, as in every other, I needed to adapt to continue the pursuit of my intellectual revolution. Yes, revolution because it appears to me that evolution is revolutionary. I have adapted to the insights and guidance of my supervisors, Dr. Dan van der Horst and Dr. Casey M. Ryan. I acknowledge and thank them for their support through the process. I remain highly indebted to Dr. Janet Fisher as my advisor and supervisor. I thank her for her availability to listen to my lull steps in the valleys and hills of this evolutionary process. I acknowledge the advisory role and support of Dr. Samantha Staddon in the last months of this evolutionally process. I also thank Dr. Pritchard Rosemary for the insights and encouragements.

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give way to something else, at that particular time in a particular way. This PhD process that began 3.5 years ago at the University of Edinburgh has just done that.

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## **1. General Introduction**

This chapter sets the stage of this thesis. I introduce large scale land acquisitions (LSLAs) by giving the bigger picture of the phenomenon. I therefore start the chapter with a brief overview of the phenomenon. In Section 1.1 I highlight that LSLAs are not unique to the contemporary time, however there are features that distinguish them from historical accounts (see Roudart & Mazoyer, 2015). Section 1.1 also introduces LSLAs in sub-Saharan Africa. In Section 1.2 I give an overview of LSLAs in Zambia, situating the phenomenon within the evolution of land tenure and agricultural development in the country. In this section, I have also highlighted that agricultural development and associated policies are a colonial legacy of land administration in the country. In Section 1.3, I have introduced Nansanga farm block, the case study of this thesis. In Sections 1.4 and 1.5, I have introduced the questions of property rights and labour, respectively, as they are related to LSLAs. In Section 1.6 I have introduced the politics of LSLAs; questioning them as development schemes as well as the competing visions among stakeholders. In Section 1.7, I have introduced the relevance of understanding the socio-economic and environmental impacts of LSLAs. This section identifies research gaps that have informed the research aims of this thesis. I then introduce the conceptual and theoretical frameworks in Section 1.8 before summarising the research aims and thesis overview in Section 1.9.

## 1.1 Large scale land acquisitions: a brief overview

Most countries in the developing world are agrarian societies, and the agriculture sector is seen as an important economic sector that contributes to development and poverty alleviation. In sub Saharan Africa, the agriculture sector is estimated to account for more than 30% of the Gross Domestic Product (Shepard, 2012). It is estimated that 70% of the 1.2 billion people who live below the poverty datum line, 90% are in Asia and Africa, and are directly or indirectly involved in agricultural activities for their living (Diao *et al.*, 2010; Kennedy *et al.*, 2013; Thirtle *et al.*, 2003). Christiaensen *et al.* (2011) note that the Asian Green Revolution in the 1970s and 1980s transformed the traditional methods of farming through science and technology. The Green Revolution demonstrated the potential of agriculture as a growth sector to shape development (Diao *et al.*, 2010). This potential however, lost its appeal following the failure of many agricultural programs, plummeting food prices and other primary commodities, and the attraction towards the flourishing export-led manufacturing industry in East Asia (Christiaensen *et al.*, 2011).

In Africa there is political momentum that has been built to hasten growth in agriculture to realise its full potential in contributing to national economies. For example, the Heads of State established the Comprehensive African Agricultural Development Program (CAADP). The program reinforced calls to allocate 10% of national budgets to agriculture sector and ensure at least 6% growth in the sector (Govere *et al.*, 2006; Kennedy *et al.*, 2013). However, despite attempts to improve the agriculture sector, agricultural revolution and productivity have failed, and most African countries still lag behind (Glover, 1989;

Diao *et al.*, 2010). According to Deininger (2011), Africa needs to overcome challenges of technology, infrastructure and institutions to establish a comparative advantage in agricultural production and ensure benefits to existing producers and countries. On the international scene, the United Nations adopted 17 goals in 2015 to define the institution's development goals. Goal number 2 is specifically dedicated to ending hunger, achieving food security, improving nutrition and promoting sustainable agriculture.<sup>1</sup>

The convergence of global factors, namely; food security, financial investments, biofuels, among others have led to large scale land acquisitions (LSLAs) (see German *et al.*, 2013; Schoneveld, 2013). These global factors have drawn new attention to land, its uses and value (Li, 2014). While debates persist about the role of agriculture in economic development (Christiaensen *et al.*, 2011), the contemporary wave of LSLAs has raised genuine concerns among policy makers, development practitioners and researchers regarding the costs and benefits. Debates about LSLAs have focused on the socio-economic and environmental benefits and costs of the phenomenon in host countries (Hall & Scoones, 2011). While policymakers and development practitioners generally support LSLAs to promote investments in agriculture to spur development (Messerli *et al.*, 2014), non-governmental organisations generally characterise the phenomenon as shady, speculative, transnational in character, and involve contested lands without any formal regulations (Borras & Franco, 2012). LSLAs have thus become an important development policy topic (see Locher & Sulle, 2014; Gekker & Schäfer, 2016; Wolford *et al.*, 2013).

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<sup>1</sup> Sustainable Development Goals of the United Nations:  
<https://sustainabledevelopment.un.org/?menu=1300>

LSLAs are supported because they are perceived as a mechanism for development through generating employment and jobs, providing access to markets and technology for local producers, improving local or national tax revenue, and facilitating knowledge and technology transfer (see Deininger, 2011; German *et al.*, 2011; Kleemann & Thiele, 2015; Hufe & Heuermann, 2017). On the other hand, LSLAs are criticised on the grounds that the phenomenon leads to social differentiation, inequalities and landlessness (see Chimhowu & Woodhouse, 2006; Robertson & Pinstrip-Andersen, 2010; Zoomers, 2010; Ali *et al.*, 2014). Additionally, LSLAs entail ‘enclosing commons (mainly land and water), dispossessing peasants and indigenous peoples, and ruining the environment (Borras & Franco, 2012 p34),’ thereby raising food security concerns for local communities (De Schutter, 2011). LSLAs are referred to as ‘land grabs’ (Abbink, 2011) to the extent that they involve ‘taking possession of and/or controlling a scale of land for commercial/industrial agricultural production that is disproportionate in size in comparison to the average land holding in a region (FIAN, 2010 p8).’

LSLAs may be on the increase (Deininger, 2011) despite polarised views as countries in sub-Saharan Africa continue shaping policies to attract land based investments (Hall, 2010). Besides mostly cited food security, biofuels and financial investments, land is also acquired for speculative reasons thought to be part of investor investment strategy (Taylor & Bending, 2009). For example, while the European Union and the USA’s energy policies are often cited among drivers of LSLAs (see Cristina *et al.*, 2012; German *et al.*, 2013; Scheidel & Sorman, 2012) or food global markets (see FIAN, 2010; Rulli & D’Odorico, 2014), Taylor & Bending (2009) indicate that at local level, rural communities may sell or lease out their land for speculative reasons. These include: lack of

capital; policy environment that advantages commercial producers; market manipulation in the supply chain; lack of access to information that compromises their negotiating capacities and skills; and ‘arm-twisting’ that entails intimidation, false promises and misinformation.

The implementation of LSLAs is characterised by cancellations, scaling down or abandonments for various reasons (see Cotula *et al.*, 2011; Edelman, 2013; Schoneveld, 2017). In some cases, LSLA deals and their implementation are too incipient to enable any meaningful assessments of socio-economic and environmental impacts (German *et al.*, 2011). Thus, a comprehensive understanding of LSLAs remains elusive to social science research (Borras *et al.*, 2011), and Oya (2013b) observes that researchers in LSLAs tend to present anecdotal evidence as actual impacts.

LSLAs are prevalent in resource-rich developing countries (Robertson & Pinstrop-Andersen, 2010). However, Schoneveld (2011) notes that governance and availability of agro-ecologically suitable agricultural land are not necessarily correlated with LSLAs in sub-Saharan Africa. Generally, there is a positive association of weak governance institutions, resource availability and LSLAs in host countries (see Deininger & Byerlee, 2012; Lay & Nolte, 2017).

LSLAs are not a new phenomenon (FIAN, 2010; Deininger, 2011). However, the contemporary wave of LSLAs is specific in some ways. According to Roudart & Mazoyer (2015), these ways are: (i) geopolitically, LSLAs are now unfolding worldwide, in virtual defiance of national borders rather than happening in national or colonial territories under one state control; (ii) governments in host countries are facilitating LSLAs through liberalisation of public policies, particularly agricultural policies in host countries; (iii) governments have played a considerable role as land



brokers/intermediaries but also acquiring land themselves; (iv) development institutions – the International Monetary Fund, the World Bank Group, the Organisation for Economic Corporation and Development and the World Trade Organisation are playing a big role in promoting LSLAs by pushing developing countries to put in place liberal economic policies; and (v) as resources are transferred to the most productive investors from the least productive smallholder farmers, the most productive are having access to global market shares to the detriment of the least productive ones. Given the active role of host governments, the contemporary form of LSLAs does not involve physical coercion such as wars (Robertson & Pinstруп-Andersen, 2010). On the contrary, LSLAs now involve agreements in form of verbal or written contracts between land custodians and the investing entity (see German *et al.*, 2011; Scheidel & Sorman, 2012; Abbink, 2011). In some cases, companies agree directly with local authorities (Nolte, 2013). How the contracts are drafted, the conditions they contain and compliance to those conditions is a separate issue from the fact that there is a mutual agreement and understanding between the parties involved.

In the colonial Africa, local populations were displaced and made to work for white settlers against their will, and without any negotiations. In Zambia, the fertile land along the line of rail from Livingstone to Ndola and beyond to the Katangan region was reserved exclusively for the use of European settlers (Smith & Wood, 1984). In South Africa, the 1913 Land Law was enacted to foster the economic interests of the white settler population at the expense of black people who were only allocated pitiful sizes of arable land (Ochonu, 2013). In Zimbabwe, the Land Apportionment Act of 1930 'led to a land allocation system that divided land along racial lines; preserving the best land in the colony for white

settlers while denying permanent and secure tenure to Africans living in urban areas (Shutt, 1997 p560).’

In the Sudan, the British sought to maintain their military strategic position to gain control over Egypt, the upper Nile, and the Red Sea route to India, and to support the failing textile industry and employment rate in Britain. They therefore, appropriated large swaths of land and used cheaply available labour to establish and stimulate the expansion of the Gezira Scheme (Barnett & Abdelkarim, 1991). In Kenya, the colonial government made the Kikuyu and Abaluhya people work on settlers’ farms as squatters to maintain the level of required production as white settlers’ agricultural activities crumbled following the Great Depression (Anderson & Throup, 1985). In Nigeria, Mbakwe (2015) asserts that the economic exploitation of resources of the Igbo hinterland in the country was the prime *raison d’être* of colonialism in the country. According to Ochonu (2013), land dispossession was to the exclusive white export production, and white farmers monopolized cash crops and ensured labour enslavement of the displaced and land-dispossessed African farmers. In these historical accounts of LSLAs, agriculture was about labour and land as resources for socio-economic prosperity of a class of people, to the socio-economic exclusion and disadvantage of another, the local communities.

As in colonial times, Africa is still viewed as a continent of abundant labour and land; none of which poses any constraint for agricultural production (Jayne *et al.*, 2014). For example, only 48 million (or 6.85%) of the 700 million of the Guinea Savannah zone is being cropped (World Bank, 2009). Additionally, though ‘non-cultivated area suitable for rainfed cultivation is highest in Africa [...], sub-Saharan Africa

realises only 20% of potential production, offering large potential for increasing yields (Deininger & Byerlee, 2012 p709).'

More than 60% of the population in sub-Saharan Africa is involved in agriculture as their socio-economic primary activity (Shepard, 2012), and therefore, there is a general consensus that agricultural growth remains pivotal to the economic development of the continent (Argwings-Kodhek *et al*, 2002). As a result, there is a growing population of smallholder farmers in rural communities, affluent urbanites investing in rural areas, foreign companies and national governments, leading to competition for land and water (Jayne *et al.*, 2014).

In 2009 the World Bank published '*Awakening Africa's Sleeping Giant: Prospects for Commercial Agriculture in the Guinea Savannah Zone and Beyond.*' In this publication, Mozambique, Nigeria and Zambia have been hailed as countries in sub-Saharan Africa with enormous potential to establish themselves as agricultural economies to compete on regional and international markets as did the Cerrado region in Brazil and the North Eastern region of Thailand. In the publication, the World Bank notes that 'opportunities abound for farmers in Africa to regain international competitiveness, especially in light of projected stronger demand in world markets for agricultural commodities over the long term (World Bank, 2009 px).'

Thus, Deininger (2011) puts Zambia among countries such as the Democratic Republic of the Congo, Mozambique, Sudan and Tanzania with suitable land and high yield gap. With ~68% arable cropland (Jayne *et al.*, 2014), Zambia is counted among primary targets for LSLAs in sub Saharan Africa (Schoneveld, 2011; German *et al.*, 2013). The country is seen to have potential to participate in the global markets for agricultural commodities over the long term (World Bank, 2009).

In this section, I have given a general overview of LSLAs highlighting them as a development strategy in host countries, and that they are not unique to the contemporary time though they show some distinguishing features. In the next section, I will zoom in on Zambia to highlight how land tenure and agricultural development are two sides of the same coin, embedded and inherited from the colonial administration.

## **1.2 Evolution of land tenure and agricultural development in Zambia: a brief overview**

The colonial systems in Africa recognised labour and land as crucial factors of production that they mobilized through commoditisation to satiate their economic interests (Ochonu, 2013). Zambia has a bifurcated land tenure system that was inherited from colonial land administration (Adams, 2003; Smith, 2004). This colonial system characterises scales of production in the agriculture sector. Commercial farms are concentrated along the line of rail, and peasant farmers in rural areas on customary lands (Malambo, 2014). Less fertile lands were left for local Zambian farmers with no infrastructural development or access to extension services to boost production (Smith & Wood, 1984).

Under the British governor, Zambian land was divided into crown land and reserve native land in 1928 (Malambo, 2014; Ng'ombe *et al*, 2012). Crown land was reserved for European settlements and mining along a narrow strip of about 32 to 48 km on either side of the railway line from Livingstone to the Copperbelt, including small parcels of land near Chipata, Mbala, Mkushi, Mumbwa, and Mwinilunga (ed. Roth & Smith, 1995). Later in 1947 the Native Trust Order was passed that birthed trust land (Ng'ombe *et al.*, 2014). Trust land was in the order of 40.5 million

hectares of previously unassigned land, forest and game land, and unutilised crown land that was given to local people (ed. Roth & Smith, 1995). Crown land was 6% and reserve native and trust land both totalled up to 94% (Adams, 2003).

Compared to Malawi and Zimbabwe that were under the same British colonial administration, Zambia fared the worst in agricultural development. According to Bratton (1980), smallholder farmers in Zambia were incapable of collective effort to demand the colonial administration and parastatal agencies for transfer of resources, and better reforms in the administration to accelerate rural development. Instead, the colonial administration demonstrated opposition and lack of enthusiasm to support black Zambian farmers, including thwarting their efforts to increase their production (Bratton, 1980; Good, 1990). This neglect was reflected in the kind of policies that negatively affected agricultural production in rural communities. The migration of the male population from rural areas to work in the mines to afford to pay taxes which they couldn't from agricultural produce sales, eventually stagnated rural socio-economic development (Bratton, 1980). In general, African agricultural production systems were looked down upon and discouraged for fear that Africans would be able to pay taxes without migrating to work in the mines that were evidently lucrative for Europeans than agriculture (Smith & Wood, 1984).

However, the Tongas in southern Zambia emerged above subsistent farmers as small-scale farmers after fighting the oppressive colonial agricultural policies (Kanduzza, 1991). They (Tongas) acquired ploughs and other implements in order to expand family labour and to increase productivity, a practice that enabled them to rely on their farming for cash and avoided working in the mines (Kanduzza, 1991). Owing to

lack of infrastructure in peasant areas, and marketing boards that discriminated against peasant products, the colonial state forced increasing numbers of men to work for low wages in the copper mines and line of rail estates (Mwanza, 1992). This resulted to the creation of a class of peasant farmers. According to Smith & Wood (1984), by independence in 1964 three different systems of production had emerged in Zambia: subsistence; small-scale local Zambians; and large scale European commercial farming. This classification of farmers was reinforced by production and marketing policy that was typically based on maize, tobacco and pastoral products which were produced by commercial farmers, while there was no policy consideration for millet and other food crops such as cassava that were grown nationwide by subsistent farmers (Kanduza, 1991). To date, maize is referred to as a political crop in Zambia. Thus, land dispossession was to the exclusive white export-led production as white farmers monopolized cash crops and ensured labour enslavement of displaced and land-dispossessed local farmers (Ochonu, 2013).

After independence crown land became state land, while reserve native and trust land remained as such till the 1995 Lands Act that combined them into customary land (Ng'ombe *et al.*, 2012). With the momentum of the Land Acquisition Act of 1970 that sought to facilitate what was then known as 'zambianisation' program, the first republican government promulgated the 1975 Land (Conversion of Titles) Act that halted freehold tenure system (Ng'ombe *et al.*, 2014). In conformity with the nationalisation program, the 1975 Land (Conversion of Titles) Act introduced important measures into the land administration. These measures included vesting all land in the President of Zambia who would hold it in perpetuity on behalf of the Zambian people. Additional

measures were that freehold commercial farmlands be converted to state land as 100-year leases, and sale of land be prohibited thereby halting the operation of land markets (Adams, 2003; Malambo, 2014; Ng'ombe *et al.*, 2014).

The prohibition of land sales by the 1975 Land (Conversion of Titles) Act was realised as a huge hindrance to the free operation of land market, and this resulted in highly exaggerated property values that did not incentivise property investment (Ng'ombe *et al.*, 2014). Thus, the second republican government repealed the Land Act 1975 in 1995. The Lands Act 1995 merged native reserve and trust lands into customary land and provided for its conversion to leasehold, and established lands tribunal and land development fund (Adams, 2003; Malambo, 2014; Ng'ombe *et al.*, 2014).

The provision to convert land to leasehold to pave way for land-based investments (Nolte, 2014) was controversially debated as it created fears among stakeholders that with the Zambian dysfunctional and under-funded government institutions (Adams, 2003; Brown, 2005), there would be cases of land dispossession from local people, and the authority of chiefs would also be curtailed (Ng'ombe *et al.*, 2014). To address this concern, the Lands Act 1995 included that the President 'shall not alienate any land situated in a district or an area where land is held under customary tenure without taking into consideration the local customary law on land tenure ... [and] without consulting the chief and the local authority in the area in which the land to be alienated is situated ... (GRZ, 1995 p271).' The latest Lands Act 2015, as contained in the new Constitution of Zambia that was assented to by the President on 5 January, 2016, maintains that all land in Zambia shall vest absolutely in the President and shall be held by him in perpetuity for and on behalf of

the people of Zambia. According to the Constitution of Zambia (Amendment) Act, (2015), the President shall not alienate customary land:

- without taking into consideration the local customary law on land tenure which is not in conflict with this Act;
- without consulting the chief and the local authority in the area in which the land to be alienated is situated, and in the case of a game management area, and the Director of National Parks and Wildlife Service, who shall identify the piece of land to be alienated;
- without consulting any other person or body whose interest might be affected by the grant; and
- if an applicant for a leasehold title has obtained the prior approval of the chief and the local authority within whose area the land is situated.

Once land is leased, the lessee is not allowed to transfer the lease as sublease, mortgage the land or subdividing it without written approval from the President. If request for transfer is granted, an assessment of what is called an 'unexhausted value of improvement' is carried out to ascertain the property transfer tax of 5% which must be paid by the lessee (Bruce *et al.*, 1995).

Building on this section that has highlighted the evolution of land tenure and how that has shaped agricultural evolution in Zambia, the next section presents the case study, Nansanga farm block. The case study puts into perspective elements that have been highlighted in section 1.2



### 1.3 Case study: Nansanga farm block

In 2002 the General Republic of Zambia (GRZ) decreed the establishment of nine farm blocks across the country. That is, one in each of the then 9 administrative provinces (**Table 1.1**). Zambia now has 10 provinces. The government was then formed by the Movement for Multiparty Democracy, and the President was the late Levy Patrick Mwanawasa. The objectives of these farm blocks were:

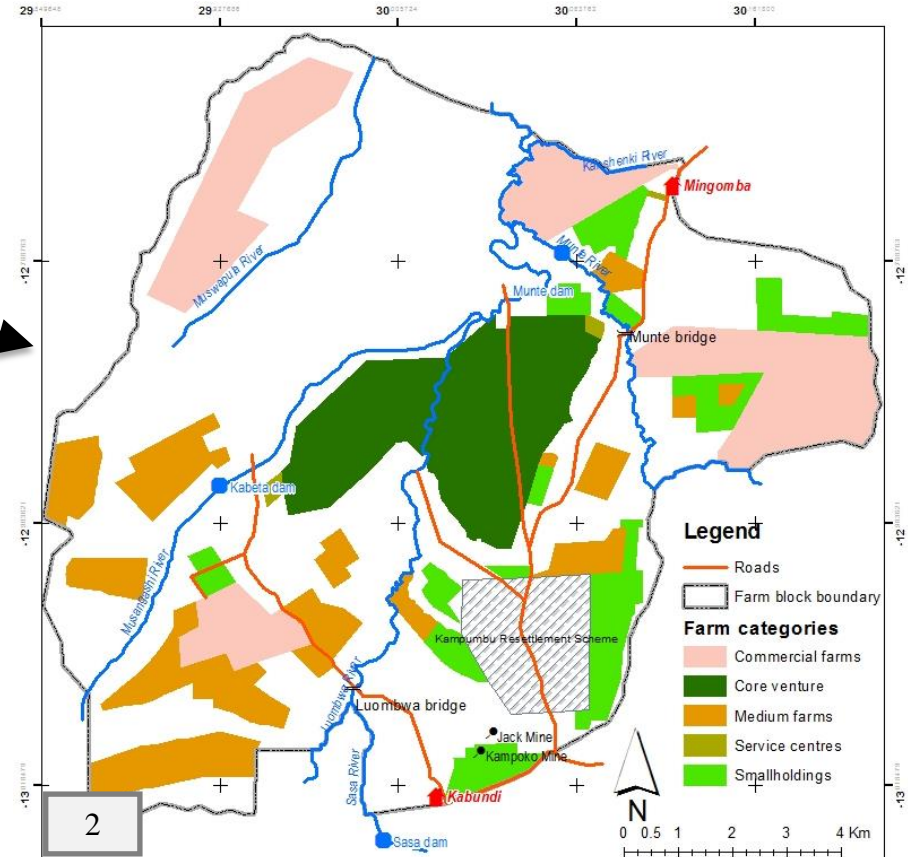
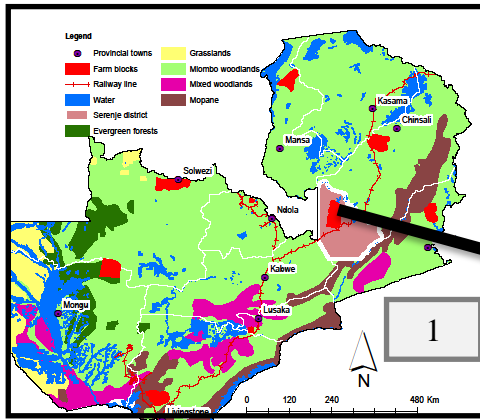
- To commercialise agricultural land and exploit its full potential in order to attain economic diversification and growth.
- To enhance food security for the nation and for export.
- To open up undeveloped rural areas, reduce poverty and minimize rural to urban migration (GRZ, 2005).

**1 - Table 1.1** Summary of farm blocks under the 2002 parliamentary decree

Farm block	Size (ha)	District	Province
Nansanga	155,000	Serenje	Central
Kalumangwe	100,000	Kaoma	Western
Luena	100,000	Kawambwa	Luapula
Manshya	147,750	Mpika	Northern
Solwezi	100,000	Solwezi	Northwestern
Simango	100,000	Kazungula	Southern
Luwanyama	100,000	Lufwanyama	Copperbelt
Chongwe	65,000	Chongwe	Lusaka
Mwase- Mphangwe	100,000	Lundazi	Eastern
Total number of ha	967,750		

Source: GRZ, (2005)

Nansanga Farm Block showing demarcation of different farms



1 - Figure 1.1 Study site

(1) Zambia's dominant vegetation cover where farm blocks (red patches) have been planned; (2) location of Nansanga with Mingomba and Kabundi; (3) undeveloped farm marked as private property; (4) collapsed Munte dam in Mingomba; (5) Mushroom - *Ubukungwa* (*Termitomyces titanicus*) and the insert is *tente* (*Amanita zambiana*).

Source: Author's creation based on field data (2017), GRZ (2005), Ryan *et al.* (2016) and data from <http://www.diva-gis.org/gdata> (accessed 05/08/2018). Pictures taken by A. Chilombo in Nansanga

One of the reasons attributed to poor performance of the agriculture sector in Africa is poor infrastructure, technology and institutions (see Deininger (2011)). GRZ identified poor infrastructure in rural areas as a limiting factor in increasing attractiveness of agricultural investments. In the farm block program therefore, GRZ planned to construct roads, bridges, boreholes, schools, health facilities, dams as well as pulling electricity into the farm blocks (GRZ, 2005). Given the limited resources, the implementation of the farm block program was in phases, and Nansanga, Kalumangwe and Luena were prioritised (additional information in Chapter 5 of this thesis).

The farm block program was modelled on contract farming where farmers of smallholdings, medium and commercial farms would produce crops to sell to an agro-business entity in the core venture of the farm block (see **Figure 1.1** above). The agro-business entity in the core venture would then export crop in sub-region and overseas (GRZ, 2005), thus linking producers to outside markets.

Nansanga farm block was selected as a case study to understand the SEE impacts of an LSLA deal in limbo development because it was the most advanced in terms of infrastructure development, demarcation of plots and issuance of title deeds to potential investors. Infrastructure development in Nansanga was concentrated in three community areas: Mingomba in the north; Kabundi in the south; and Kabeta in the west.

The study was carried out among the Lala people of Mingomba and Kabundi. Historically, people lived in large settlements in Kanshinke, north of current day Mingomba that got its name from the now locally extinct *mingomba* birds (hornbill, scientific name *Bucerotidae*).

Traditionally, umugomba (singular) is a sign of good omen. Land was allocated according to clans, particularly the wasp, goat, rain, elephant and warthog. In 1973 the government forced communities to regroup near passable roads to facilitate agricultural extension services. However, lack of water, disputes over land and witchcraft forced people to return to Kanshinke. Years later, the Senior Chief Muchinda began allocating land to households again in Mingomba. Households were settled apart from one another. Currently, the community area is sub-divided into 16 subsections: Mingomba; Nkanshinke; Mukomansala; Kabumbu; Chikande; Kamembe; Kansanka; Bwande; Chimfunkwe; Kamwala; Chibwamwandu; Natumbula; Nkulumashiba; Mape; Munwa; and Mulembo, with a total population of ~650 households/~3 900 people. This number of people was an approximation based on registered households in the books of the *Chilolo*, advisors to the Senior Chief.

Kabundi, on the other hand, was the first palace of Senior Chief Muchinda years before 1960. Given the presence of the palace, Kabundi was established as a sub-district when Serenje town was established as the main district town in 1940. A health post, local court and school were established, rare as these were in those days. It is currently subdivided into 17 subsections: Mpandwa; Muchinda; Luombwa; Sasa; Bwilowe I; Bwilowe II; Mpopo; Kabundi; Chishitu; Kalengo; Bwansa; Nkonde; Chilongoma; Mbulwe; Teketekel; Teketekell; and Shosho. It has an estimated population of ~465 households/~2 790 people. As in Mingomba, this number was an approximation based on registered households.

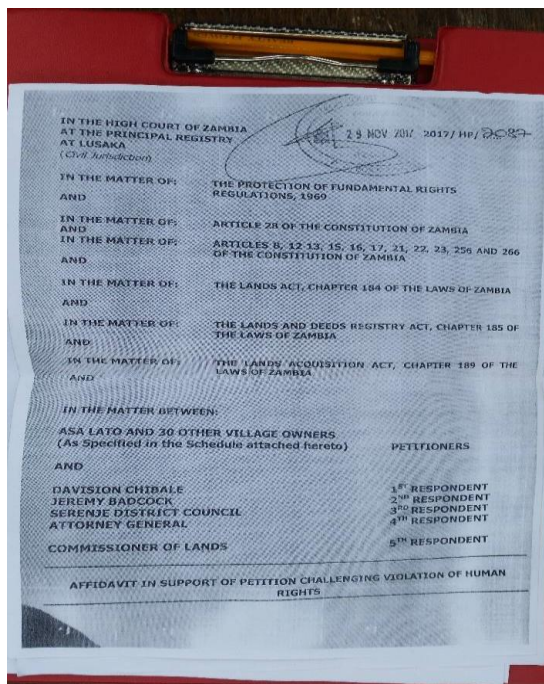
Among the Lala people, the successor to the throne is always a man and comes from the Nyendwa clan that initially settled in Kambili near the source of Bwande river. This area is a sacred burial place for the Senior Chief Muchinda. The successor takes up Chief Muchinda, as their new name. Both Muchinda and Kabundi have had infrastructure from Nansanga farm block development program. The developed pieces of infrastructure include dams, roads and bridges. They also both have had cases of involuntary resettlements.

Nansanga is isolated from the economic centres and formal administrative centres. The local economy has largely been cashless, till the recent past with the infrastructure development for Nansanga farm block. Small-scale agriculture and collection of seasonal non-wood forest products constitute the main sources of livelihoods of communities (More details on community characteristics are in the Chapter 7 of this thesis).

There are 30 households with threats of displacement between Bwande and Munte rivers following a 2 202 ha land deal by a businessman named Jeremy Baddock with government officials. At the time of the fieldwork, the case was still in court. The community land contestation was supported by the Human Rights Watch. There are also additional households that are still in what were designated as service centres of the farm block.

Section 1.3 has presented the case study. The section has highlighted the socio-economic dynamics and the general development path of the Nansanga farm block that has created contestations over land by different interest groups. To the extent that land tenure conversion gives new meanings to land by new users with markers of ownership (e.g

title deeds, beacons) (Li, 2014), the question of property rights is relevant to LSLAs. Highlighting the property rights dimension is relevant because LSLAs entail the transfer of resources from current users to others, and this transfer often happens between parties of unequal socio-economic conditions and social relations such the rural poor and landowners with different levels of access to power (Peters, 2013). This is particularly the case for Zambia where LSLAs are likely to take place on customary land that is governed by informal institutions, and inhabited by rural communities far from the sphere of political influence and power. Section 1.4 highlights the property rights dimensions of LSLAs.



A photocopy of a summons for the court case between Bwande community members and Jeremy Badock and government officials

## **1.4 The property rights dimension of large scale land acquisitions**

The emergence and evolution of property rights to land have been shaped by human population growth and the emergency of land markets that have led to increased demand for land and eventual land scarcity (Toulmin, 2009). Quoting Sjaastad & Bromley (2000), Deininger & Feder (2009) define property rights as formal social conventions that allow individuals or groups to lay a 'claim to a benefit or income stream that the state will agree to protect through the assignment of duty to others who may covet, or somehow interfere with, the benefit stream.' Land scarcity in the face of population growth has encouraged acquiring land rights that have improved management options of land as a resource (Binswanger *et al.*, 1993). Efforts to map target countries for LSLAs have pointed out poor implementation of land policies, including the safe-guarding of property rights of rural communities to land influences investor choices (see Arezki *et al.*, 2015; Deininger, 2011; Thaler, 2013).

At the core of property rights claims to land is what land is to different stakeholders. Based on Li (2014), land means different things to different people, and so its uses and meanings change and can be disputed; land has presence and location and has diverse array of affordances; and finally, land has devices of inscriptions such as title deeds, trees, ancestral graves, maps that are used to assemble it for different actors. These three elements influence the contestations around land as a resource. For example, views are divergent regarding registration and titling of customary land to legalise it and strengthen

communities' property rights to it. These elements are embedded in state power of which property rights is a central form as well as an effect (Parenti, 2015). With good governance as a caveat, Deininger & Feder (2009) indicate that there is 'enhancement of tenure security through land registration with benefits manifesting themselves in higher levels of investment and productivity and a reduced need to defend land rights.' On the other hand, Toulmin (2009) indicates that though formalisation of land rights in countries such as Thailand, Brazil, Peru, Indonesia and Honduras has led to increased value in land, increased investments, and access to credit, such results in sub-Saharan Africa are not guaranteed. Sjaastad & Bromley (1997) have also argued that indigenous land rights are likely to provide more investment incentives than freehold. Such outcomes suggest that land registration is an important and necessary step though not sufficient to ensure that property rights of communities to land are strengthened to avoid land dispossession, involuntary displacements and other land related conflicts.

Besides advantaging people of influence and lack of gender-sensitive inclusion that disadvantages women, titling land does not account for important 'safety-net' rights such as gathering wild foods. Chimhowu & Woodhouse (2006) note that land titling promotes land markets that make it easy for communities to sell their land in hard times, leading to social differentiation and landlessness. In addition, Deininger & Feder (2009) argue that good governance for consistent legal and institutional framework, broad access to information, and competent and impartial institutions are important for strengthened land rights. However, as Deininger (2011) noted, LSLA target countries such as Zambia have



weak land governance, lack capacities to handle large scale investments, and demonstrate inconsistency with national development priorities as well as resource conflicts. Given the poor land governance in Zambia in the wake of LSLAs (Nolte, 2014), people's rights to customary land as their livelihood resource cannot be guaranteed.

Like in the rest of contemporary Africa, Zambia's customary land is a colonial legacy that was established for political and administrative control (Chimhowu & Woodhouse, 2006). Zambia has a complex bundle of rights that define the relationship between its people and the environment. On the first level, land tenure is bifurcated into customary and statutory land. The former is under traditional leadership and the latter is governed by state institutions. The second level is that land in Zambia cannot constitutionally be owned (Zambia Lands Act, 2015). The occupant can only have the usufruct rights. The third level of complexity is that the right to land as a resource does not automatically grant the same rights to the use of forests and any endowments below two meters in the soil. These levels define the boundaries of the human-land nexus, spelling out the bundles of property rights regarding access and use.

In Zambia customary land is not a valid case of an *open access resource*. This is because it is under specified traditional leadership with spatial extent, with due constitutional recognition. It is also allocated to community members by traditional leaders. It is a *property* where communities are 'co-equal in their rights to use the resource (Lawry, 1989 p405).' For example, areas such as dambos cannot be owned by one person in Nansanga to allow animal grazing for every community member. Rural poverty levels in Zambia are high, and therefore,

communities are financially challenged to develop customary land. Poverty is also linked to people's lack of appropriate technologies for increasing production, and lack of access to markets. Consequently, in some places, customary land is 'idle,' while in others, the levels of production per unit area are low. Though customary land is constitutionally recognized as a 'non-state' alternative to ensure equity and access to land by the rural poor, it has no value in financial markets as it cannot be used as collateral (Chimhowu & Woodhouse, 2006). To ensure security of investments, customary land is converted to leaseholds. The investments that prompt the conversion of customary land are justified as being done in interest of the public. These include sanitary improvements, establishing new or extending existing township, construction of airports, railway or roads, hydro-electric or other electricity generation (Zambia Lands Act, 2015). Therefore, as Toulmin (2009) confirms, claims to customary land rights in Zambia as in the rest of Africa are protected only in the absence of powerful interests, including state interests.

The implementation of the guidance provided for in the constitution to expropriate land in public interest has impacts on the actual administration of customary land by traditional leaders. The government is obliged to compensate an individual or communities when they are relocated, compensation based on the value of development on the land. The compensation is not based on the market value of the land, but on the labour applied to it for any development on it (Sjaastad & Bromley, 1997). For other land acquisitions involving communities, the level of compensation is an outcome of negotiation among the people involved,

that is, the investor and communities. Power therefore, is a factor in determining the 'value of rights' to land and the level of compensation. Rural communities with no or little political influence are on customary land with tenurial rights that do not guarantee security or access to financial services. Urban communities closer to the centre of political powers are usually on titled land with guaranteed security, and property can be collateralised, with property rights to land well specified and enforced (Sjaastad & Bromley, 1997). In South Africa, Benjaminsen & Sjaastad (2008) found that formal titles to land are generally restricted to commercial farms of white farmers. To the extent that power relationships influence land titling (Meinzen-Dick *et al.*, 1997), in the context of LSLA, power among stakeholders influences the distributional socio-economic impacts of LSLAs within communities and at national level.

The question of property rights in LSLAs revolves around access or lack thereof to land which, together with labour, are perceived as 'surpluses' (Li, 2011). As surpluses in one area, they can be exploited for capital accumulation to quench the socio-economic malaise in another area (Baglioni & Gibbon, 2013). The next section briefly discusses the question of labour as it relates to LSLAs.

## **1.5 The question of labour in large scale land acquisitions**

The question of labour is important to understand the scale of socio-economic and environmental impacts of LSLA deals. Because this thesis focuses on an LSLA deal in limbo of development, there was little

opportunity to delve into the question of labour from the farm block program itself. It has however, been discussed in tobacco production and manganese mining, the two socio-economic activities that have flourished in the absence of a functional farm block program (Chapter 6). In this section, I briefly review the question of labour with regards to the LSLA debate in general.

Job creation is among the reasons cited for promoting LSLAs, however direct welfare effects of participating as wage labourers are more uncertain (Herrmann, 2017). The logic is that LSLA deals create jobs, and since large farms are more apt to use monetised labour (Adjognon *et al.*, 2017), labourers have relatively more money to spare and to spend on the health, education of their children and other material things. This eventually contributes to lowering poverty levels. In a World Bank report, Deininger *et al.*, (2011 p38) indicate that, 'employment generation is often a key avenue for local people to benefit from outside investment [...] In many developing economies, the ability of the agricultural sector to absorb labour and provide gainful employment provides a key safety net.' In Zambia the achievement of the third objective of the farm block program, 'to open up undeveloped rural areas, reduce poverty and minimize rural to urban migration (GRZ, 2005),' is anchored in job creation in rural areas.

However, job creation through LSLA deals has highly been criticised. First, LSLA deals are implemented on customary or traditional lands inhabited by the rural poor with low levels of education. Therefore, qualified labour to operate machines or read instructions regarding the use of chemicals is not available, forcing investors to employ labourers

from outside the region of investment (Kleemann & Thiele, 2015). Second, linked to lack of skilled labour, communities are more likely to be casually employed only during peak farming periods such as harvesting or weeding, working as labourers without a role in managing production (Lavers, 2012). This has two impacts: since manual weeding and harvesting are not technical skills, the payments are too low to make any meaningful difference in the socio-economic conditions of labourers; and since they are casual labourers with low payments, being employed in an LSLA deal is not possibly a key safety net (see Herrmann, 2017). Third, LSLA deals sometimes fail, are abandoned or the business investment model is changed for various reasons (see Edelman, 2013; Messerli *et al.*, 2014; Locher, 2015). However, even in cases where production succeeds, Li (2011) argues that employment or compensation for land to contribute to poverty reduction is not an investor's concern. Fourth, LSLA deals (can) lead to labour-flight, where labourers spend time working for low wages abandoning their own farms. This further deepens their socio-economic vulnerable contexts. Fifth, labour needs depend on the type of production and the crops being produced. Capital-intensive industrial agriculture will need less labour compared to less mechanised production models (Deininger *et al.*, 2011). Therefore, the production model (determined by the investor for their objective) will determine the level of jobs that will be created, and whether the labour regime will favour local community members or others from outside the region of investment. (For a detailed discussion about the question of labour in LSLA deals, see Li (2011)).

As has already been noted, labour availability attracts investments in land. The provision of labour is seen as a development outcome of LSLAs. That is, an LSLA deal that provides employment to local people is more likely to be said to have brought development to the local area than a deal that does not offer jobs. This is defining the *developmentality* of an LSLA deal in terms of job-creation. What if an LSLA deal creates jobs for some but leads to deracination of other community members? What if the deal leads to land degradation or environmental pollution but it has led to the construction of schools, health centres and roads? In reflecting on these questions, in the next section, I introduce competing visions and contestations around land that is perceived as a factor of production, a resource for capital accumulation, but also as a territory for assertion of power (Parenti, 2015) that shapes the sense of ownership and social belonging. In the next section therefore, I shed light on the socio-economic and political claims supporting and opposing the *developmentality* of LSLA deals.

## **1.6 Are LSLAs development schemes in Africa? Questioning competing visions**

In this section, I bring to light the political economy of LSLA deals as development schemes. I shed light on competing visions, aspirations and imaginaries that are consequently produced as different actors interact around land as a resource. The contemporary wave of LSLAs has been triggered by a convergence of global crises regarding finance, food,

environment and energy (Borras & Franco, 2012). The wave of LSLAs is therefore, a response to crises of global scope using local resources in the global south. In this regard, the LSLAs are linked to neoliberal capitalism that is in search of new sources of accumulation (Baglioni & Gibbon, 2013) 'in natural resource-rich but finance poor' countries (Chilombo *et al.*, 2019). To illustrate if LSLAs are development schemes and to question competing visions around land through a political economy lens, it is critical to highlight the role of the state and mechanisms used to engage with other actors in land deals. The state has the power to make territory and land accessible, legible, knowable and useable (Parenti, 2015) by different actors.

Despite the multiple global crises (food, energy, environment and finance) fuelling LSLAs, White *et al.* (2012) observe that the significant proportion of LSLA deals are for agricultural production. This fits well within the development agenda of most developing countries that seek to use agriculture for development (see World Bank, 2009). Using its political legitimacy and economic capacity (Parenti, 2015), the state devises mechanisms of delivering on its development promises through agricultural production. In the context of LSLAs, the state is a land broker, facilitating access to land (Baglioni & Gibbon, 2013; Roudart & Mazoyer, 2015) by land seekers (more details in Chapter 5). According to Shepard (2012), land seekers include sovereign wealth funds, state-owned enterprises, government-to-government deals and private sector deals such as agribusiness and agrifood companies, biofuel-developers, and increasingly, private institutional investors. Land deals involving nationals are equally common. For example, Hilhorst *et al.* (2011) report that 95%

of the land deals in Benin, Burkina Faso and Niger involved nationals of those countries.

Quoting Davies (2011), Shepard (2012) reports on two types of investments: the low-risk direct land investments involving the purchasing and renting of land on an established operator; and second, the high-risk purchasing and controlling of stake in an agricultural company with the view to increasing its value (although, agribusiness investments can, and do, involve the acquisition of land resources as well). How does land galvanise the state, domestic and foreign actors into playing their role in the contemporary wave of LSLAs? What visions or contestations do they have around land? How does that contribute to assembling LSLAs as development schemes in sub-Saharan Africa?

In responding to the questions above, I will focus on the Public-Private Partnerships (PPPs) as they are related to type one of investments in land – specifically, collaborations between a government agency and a private corporation. There is a multiplicity of definitions of PPPs. Spielman & von Grebmer (2006 p292) define PPPs as ‘any joint effort between public and private entities in which each contributes to planning, commits resources, shares risks and benefits, and conducts activities to accomplish a *mutual objective*.’ Brinkerhoff & Brinkerhoff (2011 p4) define PPPs as ‘a cross-sectoral collaboration with the following features [...]: jointly determined goals; collaborative and consensus-based decision making; synergistic interactions among partners; trust-based and informal as well as formalized relationships; non-hierarchical and horizontal structures and processes; and shared accountability for outcomes and results.’ The actors involved bring



competence and commitment to the table to synergise in ways that the value of the created partnership becomes more than the sum of actors acting singly (Brinkerhoff & Brinkerhoff, 2011; Ferroni & Castle, 2011). According to Brinkerhoff & Brinkerhoff (2011), individual actors choose to partner for one or more of the following reasons: to enhance efficiency and effectiveness through a reliance on comparative advantages, a rational division of labour, and resource mobilisation; to provide the multi-actor, integrated resources and solutions required by the scope and nature of the problems being addressed; to move from a no-win situation among multiple actors to a compromise and potential *win-win situation*, in response to collective action problems or the need for conflict resolution; and to open decision-making processes to promote a broader operationalisation of the *public good*. In addition, Poulton & Macartney (2012) note that transaction costs and the associated risks constrain the private sector activity in African agricultural markets, and through PPPs, the public sector shoulders some of the costs and risks.

In PPPs the public sector provides a favourable institutional environment, while the private sector brings its considerable expertise in product development and deployment (Ferroni & Castle, 2011) so that they collaborate to promote economic growth and poverty reduction (Brinkerhoff & Brinkerhoff, 2011). In the partnership the state seeks to align the incentives facing private sector actors with public policy goals (Poulton & Macartney, 2012). PPPs are formed in response to diverse *societal concerns* (Brinkerhoff & Brinkerhoff, 2011; Spielman & von Grebmer, 2006), and therefore take different forms, and each of them is unique, and an experiment having to deal with a new mixture of partners,

needs, technologies, goals and intended beneficiaries (Ferroni & Castle, 2011). Despite the apparent *altruistic goal* to promote economic growth and poverty reduction, the success record of agricultural-related PPPs is low. Spielman & von Grebmer (2006) attribute the failure to fundamentally different incentive structures; prohibitive costs, both direct and indirect; mutually negative perceptions between the sectors; and high levels of competition and risk associated with valuable assets and resources. In an economy like Zambia, quoting Chitundu *et al.* (2006), Poulton & Macartney (2012) note that mistrust between the public sector and the private sector is not uncommon, and this hinders good collaboration and execution of activities in a partnership.

Within the context of LSLAs, and building on the role of the state in PPPs, the state delivers land as a resource to the accumulation process by the private sector by creating property regimes, physical infrastructure, and scientific knowledge (Parenti, 2015) in an effort to make it more productive. Land in Nansanga is a typical example where the property regime was altered with the conversion of tenure, and the government developed some infrastructure to facilitate the operations of the private sector by lowering their costs in infrastructure development. In this way, the state put in place a regime that excluded and distinguished legitimate (those who bought land) from illegitimate uses and users (the Lala people of the area who occupied and used the land), and inscribed boundaries through devices such as fences, title deeds, laws, zones, regulations, landmarks and storylines (Li, 2014). In this way, the state *territorialised* Nansanga within chiefdom Muchinda as an agricultural enclave to have its own structures to enable production of crops, value addition and

export to regional and overseas markets. In this way, capital's relationship with Nansanga land and associated resources was also a relationship with the state, and mediated through the state (Parenti, 2015). Thus, Nansanga farm block would be connected to regional and overseas capital though physically, socially and economically isolated (Symons, 2016) from chiefdom Muchinda in which the farm block would be operating.

PPPs as a collaborative arrangement to respond to societal crises (e.g food, finance, environment and energy) for public good (Poulton & Macartney, 2012) raises ideological and operational concerns. In the contemporary wave of LSLAs, there is a willing seller and willing buyer of land, and many other players particularly multinational financial institutions playing their role to encourage policy changes in host countries to facilitate private sector investments (Shepard, 2012). States need to promote development to benefit rural communities and the national economy through investments in land, but lack capital and only have limited expertise. The private sector has capital and expertise to apply to land to grow their profits. Therefore, a PPP between the state and a private company is ideologically premised on divergent objectives. The private sector will only enter into a partnership contract with a public agency if doing so contributes to improving their profits, because as Poulton & Macartney (2012 p99) note, 'the private sector [in land deals] ultimately seeks to maximise profits.' Quoting Mathis (2008), Shepard (2012 p719) observes that 'the primary objective of public and private companies is to increase shareholder value, not to increase employment, which is a public policy of government concern'. Based on this ideological

difference, implementing a PPP contract is likely to face challenges – normatively, the private sector perceives state agencies as slow, inefficient, ineffective and resistant to change (Brinkerhoff & Brinkerhoff, 2011; Spielman & von Grebmer, 2006), elements that they seek to improve to maximise their profits (Poulton & Macartney, 2012).

In the PPP arrangement, communities work the land as labourers for capital accumulation by the private sector. The provision of labour is a mark of what the state and the private sector term *development*, a public good for which the state partners with the private sector. For the state, land is for socio-economic development of national territories. For the private sector, land is for capital accumulation. For local communities, land and associated resources are ‘a pharmacy, a supermarket, a building supply store, and a grazing resource, providing consumption goods not otherwise easily available (Deweese *et al.*, 2010 p.61).’ Based on these different ideological understandings of land by the state, the private sector and communities, a *public good* (which can be called *development*) through PPPs in LSLA is likely to mean different things. This leads to two important questions: for whose *development* are LSLAs meant, and who is responsible? Second, given the different ideologies of partners in LSLA PPPs, and inherent mutual mistrusts, is a *win-win-win* situation possible? Critics of LSLA are concerned that PPPs are more a mechanism for enlarging private profits and squandering public resources with no improvement in service delivery (Poulton & Macartney, 2012). Looking at the example of the case of Jeremy Baddock and the community in Bwande presented in section 1.3, it is possible that the investor (Jeremy Baddock) has been attempting to ‘grab’ land from

community members with the support of some government officials. In this case, community members are less likely to care about the *development* of the area through a PPP between Jeremy Baddock and the government. There is already mistrust. Another factor in LSLA PPPs is information asymmetry concerning the value of land. Governments in host countries willingly lease land for negligible amounts without an understanding of the opportunity costs and the benefits the leaseholder will retain or the long-term effects of a third party's use of the land (Shepard, 2012). This is particularly the case if the land in question is customary land and the investing entity has to deal directly with local communities with modest levels of education (if any) and isolated from market forces.

In this section I have shed light on the different meanings of land as a resource for the state, the private sector and local communities, the primary land users. Based on the different meanings, I have brought to the fore the inherent challenges of using PPPs as organisational structures for LSLAs under the guise of pursuing *public goods* to respond to food, energy, environment and finances - global societal crises. The state has the legitimacy to define what land is and how it will be used through conversion of land tenure. However, technical expertise (including information about the value of land) and the financial stamina of the private sector give them (the private sector) more influence in determining the kind of *development* that can come from LSLA PPPs – a *development* motivated by profit maximisation, with social ramifications of their investments on communities being a secondary or tertiary consideration (Shepard, 2012). The profits are part of global capital

systems that are isolated from the local physical, social and economic environments that produce them. As capital is locally accumulated for global systems, this is not only a process of isolation, but it is also a process that has socio-economic and environmental footprints. In the next section, I highlight why it is important to understand the socio-economic and environmental impacts of LSLAs.

### **1.7 Why understand the socio-economic and environmental impacts of LSLAs?**

Socio-economic and environmental (SEE) impacts are at the core of LSLA debates (see De Schutter, 2011). For a country like Zambia that is targeted for LSLAs (Schoneveld, 2011; German *et al.*, 2013), but also has been seeking to use commercial agriculture for rural development (GRZ, 2005), understanding the extent of LSLAs in terms of both their benefits and costs is important. Understanding the SEE impacts of LSLAs also helps to situate the debatable role of agriculture in the economic development of developing countries (Christiaensen *et al.*, 2011). LSLAs are a dynamic phenomenon. Because a comprehensive understanding of LSLAs remains elusive to social science (Borras *et al.*, 2011), LSLAs remain poorly documented (Anseeuw *et al.*, 2013), exacerbated by the secretive manner in which LSLA deals are conducted (German *et al.*, 2014; Hall, 2011). Therefore, advancing research in understanding the SEE impacts of LSLAs still remains important to contribute to the research challenges of the phenomenon, to generate knowledge to

inform and guide policy making about land based investments, and inform political discussions at different geographic policy spaces (see Chapter 4).

Studies and analyses that have endeavoured to understand the phenomenon at global level have generated evidence on the global dynamics that underpin LSLAs, such as land global markets, global financial uncertainties, biofuels and the spike in food prices of 2007/2008. Studies that have looked at the phenomenon at regional or continental level have done so with a geopolitical lens that categorises the global north as 'resource poor, financial haves' and the global south as 'resource rich, financial have-nots.' Studies that have come down to national level have endeavoured to understand the evolution of LSLA by looking at countries as case studies; comparing and contrasting institutional frameworks and the need for these countries to improve their economies through agriculture. They have also generated data that point to the land rights implications, and the role of governments in the contemporary wave of LSLAs.

In these levels of analysis, the common caveat is reliability of data. Little research attention has been paid to community level studies such as that of Osabuohien (2014) to understand SEE impacts as LSLAs unfold. Case studies that systematically aim at understanding LSLAs using participatory research approach are also uncommon. Yet, these would provide concrete evidence on the SEE impacts on rural communities. In Zambia, studies that have reported on LSLA have in isolation focused on biofuels (Schoneveld, 2013); participatory processes of rural communities (Kuntashula *et al.*, 2014); and land tenure and

governance issues (Nolte, 2014; Sjöstedt, 2011) and institutional failures (Manda *et al.*, 2019). Community level investigations might have limited value in generalising findings to national, regional or global scale (Messerli *et al.*, 2014) however, they are building blocks of investigative research on LSLAs. This micro-level investigation, through case studies, permits a more detailed understanding of socio-ecological contexts that allows to ground evidential claims in concrete cases where LSLA deals are unfolding. Zambia, a country that is a target of LSLAs has chronic shortage of evidence on the *processes* (on the *why*, *what* and *how*) and impacts (*what* and *why*) of LSLAs as they unfold on the ground.

As LSLA research develops, it is recognised that micro-processes at local levels and how they interact with wider dynamics, shape LSLA outcomes (McCarthy, 2010). However, the interplay between domestic institutional dynamics and agricultural investment inflows from LSLAs are usually studied in isolation Schoneveld (2017). Cotula *et al.* (2014 p905) note that ‘the full implications of the new wave of land deals can only be assessed if the deals are examined not in isolation, but within the wider political and economic projects they form part of.’ Bridging the gap and situating micro-processes within broader institutional dynamics as well as wider political and economic projects calls for a conceptual framework to guide that research endeavour.

Assessments of LSLAs outcomes are incomplete on environmental aspects (Cotula *et al.*, 2014), showing a ‘considerable lack of information about environmental impacts and even more so about systemic effects on socio-ecological systems (Messerli *et al.*, 2013 p529).’ This is partly due to the ‘land marginality’ narrative around land



targeted for LSLAs. Although the meaning of the term is not clear (Nalepa & Bauer, 2012), the identification of so called marginal lands for LSLA deals is based on assumptions and perceptions rather than evidence (German *et al.*, 2013). This calls for an understanding of context-specific environmental characteristics of land targeted for LSLAs to assess the marginality of land.

Academic debate continues regarding the general role of institutional policies and frameworks in attracting investments (taken advantage of by corporate actors) or drive away investment (fear of investment insecurity), and how these policies (re)shape LSLA outcomes in host countries in particular. While Deininger & Byerlee (2012) and Lay & Nolte (2017) note a positive relationship between weak land governance in host countries and the level of LSLA deals, De Schutter (2011) indicates that host countries fix the 'governance gaps' to attract investments. Schoneveld (2011) also notes that incentives that investors receive from host countries are more important than governance and availability of agro-ecologically suitable agricultural land. This calls for a more nuanced understanding of a host country's institutional policies and how they shape LSLA outcomes.

LSLA research recognises that there are many LSLA deals that have failed in terms of having been cancelled, scaled down or simply abandoned for various reasons (see Cotula *et al.*, 2011; Schoneveld, 2017; Hufe & Heuermann, 2017). This is despite favourable policy environments. Little attention is paid to understanding the 'aftermath' of failed LSLA deals. However, understanding *what* happens and *why* is relevant to the broader discussion about the socio-economic and

environmental costs and benefits of LSLAs. In the same vein, little attention is paid to understanding how communities cope with LSLA as they unfold in different socio-economic and biophysical conditions, particularly when the LSLA deals have either stalled, or have been abandoned or completely cancelled.

This section has broadly highlighted LSLA research gaps and discussions to which my research work contributes in this thesis. I have pointed out aspects of socio-economic and environmental footprints of LSLAs that LSLA research has yet to comprehensively respond. In the next section, I highlight the conceptual and theoretical frameworks for this thesis to guide the understanding of the SEE impacts of an LSLA deal in limbo of development in Zambia.

## **1.8 Conceptual and theoretical frameworks**

This section presents conceptual and theoretical frameworks upon which the understanding of SEE impacts have been drawn, and through which the same impacts have been understood, respectively. In Section 1.8.1 sustainable livelihood and socio-ecological system frameworks are presented before presenting the political ecology, multi-level governance and access theories in Section 1.8.2.

### **1.8.1 Sustainable livelihood and socio-ecological system frameworks**

Sustainable livelihoods have increasingly gained importance in the discourses of rural development, poverty reduction and management of the environment (Scoones, 1998). Studies of rural development have used the sustainable livelihood framework to understand rural incomes based on community livelihood assets (Ma *et al.*, 2018). According to Scoones (1998 p5), 'a livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living.' On the other hand, a socio-ecological system framework is an ecological system intricately linked with and affected by one or more social systems (Anderies *et al.*, 2004 p3). It has four components: resource users, resource itself, infrastructure providers, and infrastructure itself (Anderies *et al.*, 2004).

To understand the SEE impacts of an LSLA deal in *limbo of development*, this research project draws upon sustainable livelihood and socio-ecological system frameworks. Both are linked to the Millennium Ecosystem Assessment (Millennium Ecosystem Assessment, 2005) which makes a compelling case that explicitly links human wellbeing to services provided by ecosystems. These are categorised as supporting services, regulating services, provisioning services and cultural services (Fisher *et al.*, 2009; Nkonya *et al.*, 2011). With each of the services contributing to a number of constituents of human well-being, the link between ecosystem services and human wellbeing underscores the multi-functional and interconnected character of the natural as well as the

social environment of rural communities (Baker *et al.*, 2013). As Adger (2006 p347) states, 'there is a clear link between social and ecological resilience, particularly for social groups or communities that are dependent on ecological and environmental resources for their livelihoods.'

Miombo woodland where Nansanga farm block has been established is an agro-ecosystem that generates services that underpin rural livelihoods and people's socio-economic wellbeing. The sustainability of these livelihoods that are dependent on the provision of ecosystem services is influenced by factors such as land use change and governance mechanisms in place, among others. This is relevant for understanding the socio-economic impacts of land use change, particularly because agriculture is responsible for the declining levels of vegetation cover and ecosystem services in production landscapes, thereby affecting rural livelihoods (Nkonya *et al.*, 2011).

There are different components in a socio-ecological system that are interconnected (Grove, 2009). For this research project, the ecological component constitutes resource stocks and flows from the miombo woodland that underpin rural livelihoods, particularly resources that they harvest for either domestic use, income generation or both (see Chapters 3 and 7). The social component represents the institutional regimes that determine people's usufruct rights to resources that in turn shape their general wellbeing. The social component characterises the communities' intentionally invested resources in miombo woodlands and institutional infrastructure that determine their livelihoods and coping mechanisms from diverse internal and external disturbances (Anderies *et*

*al.*, 2004) (see Chapter 5 on the role of informal institutions). In the sustainable livelihood framework, this is represented by policies, institutions and processes that either enable or hinder access to resources or assets to devise livelihood strategies for either poor or improved livelihoods (Allison & Horemans, 2006), depending on the assets that determine access to the policies, institutions and processes. By institutions we mean traditional behaviours and rules and norms that govern rural communities (such as customary land tenure) and formal institutions (such as state land tenure) that establish regimes of property rights for access and non-access to natural resources (Adger, 2000).

These two frameworks are complimentary, and using both of them improves the understanding of the SEE impacts of LSLA. In using these frameworks, the first assumption is that the farm block is an external disturbance that introduces changes to the socio-ecological environment of rural communities in Nansanga. These changes include a new land governance regime from customary tenure (traditional authority without taxes) to leasehold (state administration with taxes) that changes access rights to resources at both spatial and temporal scales. Other changes include infrastructure development, new non-agricultural employment opportunities and migration, among others. If community members are not able to benefit from these new changes, the changes are perceived as external shocks in the community context that is already socio-economically vulnerable.

The second assumption is that before the establishment of the farm block, the miombo woodland resources that constitute livelihoods were sustainable. According to Scoones (1998 p5), 'a livelihood is

sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base.’ The farm block disrupts the ‘safe consumption space’ of the miombo woodland resources, and this alters the community-miombo woodland nexus or interaction. While processes, institutions and policies influence livelihood strategies, access to processes, institutions and policies are shaped by the asset portfolio: natural, financial, physical, human, capital and traditional ecological knowledge that Olsson *et al.*, (2004 p76) define as, ‘a cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment.’

This section has presented the conceptual frameworks upon which this research has drawn to understand the SEE impacts of an LSLA deal that is in limbo of development. It has drawn on the sustainable livelihood framework as well as the socio-ecological system framework because they are complimentary to each other rather than contradictory. I have drawn on their similarities rather than their differences. The next Section 1.6.2 highlights the theoretical frameworks through which the understanding of SEE impacts has been done for this research work. Political ecology, multi-level governance, social theory and access theories are presented.

## 1.8.2 Theoretical frameworks

### 1.8.2.1 Theoretical framework: political ecology

This research work was informed by political ecology as the overall underlying theoretical framework to understand the SEE impacts of an LSLA program in limbo of development. Political ecology is an empirical and research-based exploration that seeks to understand and explain linkages in the condition and change of the social-environment nexus, with explicit consideration of relations of power among actors (Robins, 2004). It owes its genesis to political economy and ecological analysis. While political economy calls for a strengthened link between distribution of power and productive activity, ecological analysis is concerned with the broader vision of bio-environmental relationships (Greenberg & Park, 1994). Political ecology is concerned with understanding access to, and control over natural resources, particularly as a source of livelihoods, including the costs of environmental destruction (Escobar, 2006). It is used based on three assumptions: there are costs and benefits that come with change in the social-environment nexus that are unequally distributed; the unequal environmental distribution inevitably reinforces or reduces existing social and economic inequalities; and the reinforced or reduced social and economic inequalities alter power relations among actors (Bryant & Bailey, 2004).

According to Messerli *et al.* (2013), investigating the impacts of LSLA, including its direct and underlying driving forces draws on different disciplines and approaches predominantly political economy, political

ecology, and agrarian change. Political ecology, for example, is particularly appropriate given the role of state institutions in the contemporary wave of LSLA. The role of the state is one of the features of contemporary wave of LSLA distinguishing it from the historical accounts and experiences of the phenomenon (see Roudart & Mazoyer, 2015). Wolford *et al.* (2013) indicate that states have been partners in land deals, including relaxing performance requirements on LSLA deals (De Schutter, 2011). State institutions have deliberately promulgated policies to boost LSLAs, and have been in the forefront in exploiting weak governance structures in an attempt to mediate access to land (Wolford *et al.*, 2013). There is also a multi-faceted expression of state power that creates violence in some cases of land deals. In Zambia there have been various cases where political *cadres* of incumbent governments unlawfully allocate land without being prosecuted. They do so as a way of 'rewarding' themselves for supporting a political party to power. As expected, violence often ensues. Three factors are relevant to the understanding of the role of the state in the context of LSLAs. According to Wolford *et al.* (2013), these are:

- The physical environment is characterised and presented in ways that shape land deals. For example, Nansanga area was advertised as an area with soils suitable for crop production, and has rivers for irrigation that offer huge agricultural potential. Nansanga is also found in the third ecological zone with abundant annual rainfall of ~1 200 mm;



- LSLAs highlight expressions of different forms of power and institutions (such as the state over leases and state land, and traditional authority over customary land), and how these different forms shape access to land and labour, income or capital, technology, and rights. For example, Nansanga farmland was customary land under the administrative authority of the Senior Chief Muchinda. It was being administered following the cultural norms of the Lala people. To have the right of access and use of this land, traditionally, one would need to be Lala, or receive exceptional permission from the Senior Chief, or the land tenure is converted to leasehold through formal institutions (refer to Chapter 5 of the thesis); and
- LSLA has triggered the emergence of inner workings of states and other power dynamics as demonstrated by business entities, urbanites, people in the diaspora and other political elites who have contributed to shaping new understandings and articulations of territory, sovereignty, authority and subjects. In Zambia, the Lands Act 1995 created land markets that put an economic value on land (Nolte, 2014). The buying of previous customary land by urbanites or elites and business entities has created socio-economic enclaves in rural areas, creating groups of stakeholders in land with different access and exercise of power as they access and use resources. Nawrotzki *et al.*, (2014) note that urban-rural migrants have more financial,

physical, human, and social capital assets than non-migrants, including levels of education. Therefore, the exercise of power of new comers leading to threats of and actual evictions have spurred conflict over the use of land and forest resources that underpin rural livelihoods (Deligiannis, 2012), because the establishment of Nansanga farm block on previously held customary land is by definition a 'transformation of resource use as resource exploitation shifts from one type of human-nature relationships to another type (Deligiannis, 2012 p85).'

The co-existence of a bifurcated land tenure system in Zambia (customary land and state land tenure systems) presents a dynamic of power play that is of interest to the political ecology of land deals in the country. Political ecology thus, provides a nuanced and necessary perspective on the relationship between formal (state institutions) and informal institutions (traditional institutions) in land deals (Wolford *et al.*, 2013) (refer to Chapter 5 of the thesis). Political ecology also sheds light on competing uses of land, including the use of forest resources that underpin rural livelihoods (Deligiannis, 2012) (refer to Chapters 3 and 7 of the thesis). These are reflected in the understanding of meanings, definitions, and identities of rural resources and environment as they are culturally constructed by community members as primary users for their own livelihoods (Wolford *et al.*, 2013).

LSLAs involve a broad range of actors with different interests at different multiple scales. Critics of LSLAs point to their potential negative

ecological impacts that undermine livelihoods and wellbeing of affected rural communities (for example, see mentions of negative impacts in Anseeuw *et al.*, 2012; Cristina *et al.*, 2012; Daley & Pallas, 2013; German *et al.*, 2011). Among actors, there is a constantly shifting dialectic in characterising interactions between society and land-based resources; within classes and groups within society itself (Robins, 2004). Political ecology represents a multidisciplinary approach to society-environment relations in a manner that 'seeks to understand how local resource use and perception are mediated by a combination of regional biophysical characteristics and processes, and the discursive-material manifestations of power that operate across geographic scales (Offen, 2004 p22).' As a theory, political ecology is concerned 'with the relationship between people and their environments in the broader context of the state and economy (Wolford *et al.*, 2013 p194).' By analysing the social forms of access and control of resources, including the environment and livelihoods, political ecology seeks to understand the complex relations between society and nature (Peet & Watts, 1996).

Political ecology has been used in various similar case studies to explore the human-environment interaction. For example, Gillon (2010) uses political ecology to analyse the environmental fix centred on biofuel production as a socio-ecological project. Ariza *et al.*, (2010) reveal a discrepancy between field results and policies that promoted the production of jatropha in India using political ecology. Billon (2001) analyses how armed conflict are related to the geography and political economy of natural resources and the power dynamics that they generate. Baba (2014) also uses political ecology as a lens to understand

environmental management and resource control in oil-rich Niger Delta region of Nigeria.

### **1.8.2.2 Multi-level governance theory**

Quoting Benz (2006), Newig & Fritsch (2009 p199) define multi-level governance (MLG) theory as ‘political structures and processes that transgress the borders of administrative jurisdictions, aiming to cope with interdependencies in societal development and political decision-making which exist among territorial units.’ Governance is here understood as processes of interactions among actors, acting at their respective administrative tiers with an authoritative claim to their role within a given policy network (Eckerberg & Joas, 2004); ensuring a shift in political power from higher to lower levels in a coordinated way (Karpouzoglou *et al.*, 2016). In these interactions therefore, non-state actors are part of decision processes at different levels of governance (Newig & Fritsch, 2009). The different tiers of actors involved reflect the ‘division of labour’ among them in the policy processes (Zürn, 2012). These non-state actors include voluntary associations, civil society organizations, expert committees, among others with special purpose jurisdictions (Piattoni, 2009). Given the wide array of actors with different interests, there is a complex interplay among them that MLG seeks to grasp (Zürn, 2012).

With a bifurcated land tenure system, this study discerned three levels of land governance in Zambia: the macro level; the meso level; and the micro level, represented by the President through the Commissioner of Lands, the district councils; and the micro level represented by

traditional authorities, respectively. The government of Zambia recognises roles of other actors, including the national development coordinating committee, cluster advisory groups, provincial development coordinating committees, district development coordinating committees, non-governmental organisations, civil society organisations, faith-based organisations and the ordinary Zambians (GRZ, 2017). All these influence policy formulation and implementation.

During policy formulation exercises, the government of Zambia undertakes stakeholder consultations. In the presence of the Minister of Lands, on February 28, 2018, traditional Chiefs walked out of the validation workshop to adopt the amended National Lands Policy.<sup>2</sup> The chiefs cited lack of adequate consultations in the draft of the Policy. This reflected the level of stake, responsibility and right in the land policy that traditional authorities think they have. They are part of the multi-level land governance structures in Zambia.

Various policies in Zambia have been promulgated to promote LSLAs which have triggered polarized views about LSLAs in Zambia by different actors. This reflects the actors' perceived role in the policy processes that shape resource governance. In this way, there is a 'shared common but differentiated responsibilities' towards resource governance at different administrative levels.

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<sup>2</sup> House of Chiefs Reject Draft National Land Policy and Walk out of Meeting, Lusaka Times, March 1, 2018 <https://www.lusakatimes.com/2018/03/01/house-chiefs-reject-draft-national-land-policy-walk-meeting/>

### 1.8.2.3 Access theory

Access theory refers to the ‘bundle or web of powers, including property that enables actors to gain, control, and maintain access to things in which they have or perceive a stake and derive benefits from them (Narh *et al.* 2016 p4).’ This defines the ‘*ability* to derive benefits from things (Ribot & Peluso, 2009 p153).’ This *ability* is broader than ‘the bundle of rights’ in scope because it includes benefits from intangible (such as aesthetic or cultural values) and material objects (such as medicinal plants or wild fruits from a natural forest).

Access theory thus defined is appropriate to understanding community loss of both monetary and non-monetary benefits from their environments. Though the loss can be nuanced depending on factors such as levels of compensation, asset portfolio of affected households and emerging opportunities, among others, ‘the values extracted through expropriation are not restituted adequately through compensation alone (Cernea, 2008 p117).’ In LSLA deals community members assume a different set of roles vis-à-vis resources and assets that underpin their livelihoods. This leads to the alteration in access relations, and depending on an individual’s or group’s position and power within various social relationships (Ribot & Peluso, 2009), some are advantaged and others are made worse off. For example, as noted by Katz-Lavigne (2016), because of the socio-cultural norms and gendered patterns of resource access, women are made worse off compared to men in terms of compensations levels that do not reflect women’s specific contributions to livelihoods.

Anti-LSLA campaigns have repeatedly expressed negative impacts of commercial agriculture on rural communities. Literature on LSLA has mentioned potential and actual impacts of LSLA linked to loss of access to resources that underpin livelihoods of rural communities. Communities sometimes lose land, but also their off-farm income sources when they are displaced for road, dam or any other development program (Cernea, 1997). In Zambia, reports such as 'Forced to Leave: Commercial Farming and Displacement in Zambia'<sup>3</sup> have shed light on the gravity of LSLAs and concomitant socio-economic impacts on rural communities. Experiences of 'displacements without replacements' have reinforced arguments against LSLAs. This is because as communities are displaced or face threats to be displaced, the levels of compensations are symbolic, and sometimes, they are not compensated at all. If this is the case in both short and long terms, affected communities are made worse off due to loss of access to resources and other assets that define their livelihoods. When displaced, communities become what Zoomers (2010) refers to as 'foreignised,' as their land is commoditised as a private asset for socio-economic development programs.

Access theory is particularly relevant to the understanding of socio-economic impacts that ensue from LSLA deals. This is because LSLA deals constitute enclaving of land to the exclusion of other users, particularly rural communities. For the case of Nansanga, the LSLA deal led to the enclaving of customary land for use by investors to the

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<sup>3</sup> 'Forced to Leave: Commercial Farming and Displacement in Zambia,' Human Rights Watch Report. Retrieved on 24/12/2018 from: <https://www.hrw.org/report/2017/10/25/forced-leave/commercial-farming-and-displacement-zambia>

exclusion of the Lala people. Some are still living with threats of eviction while others have their cases in the courts of law. Nansanga has therefore become a space of contestation, accumulation and extraction, inclusion and exclusion (Symons, 2016) as communities seek to assert their *perceived bundles* of access rights to the area.

## **1.9 Aims and overview of the thesis**

### **1.9.1 Aims of the thesis**

Against the background as highlighted in the previous sections, and following from the knowledge gaps in the understanding of LSLAs as detailed in Section 1.7, the aims of this thesis can be summarised as follows:

1. To understand the biophysical characteristics and socio-cultural uses of the miombo woodland where the Nansanga farm block has been established;
2. To propose a conceptual framework to enable a more comprehensive understanding of the socio-economic and environmental impacts of LSLA deals;
3. To understand the role of formal and informal institutions in LSLAs and how these institutions shape LSLA deals and their outcomes;
4. To understand how LSLA deals in limbo of development (re)shape and are (re)shaped by different socio-economic and biophysical landscapes in which they unfold in order to improve



the understanding of the political ecology of failed or stalled LSLA deals; and

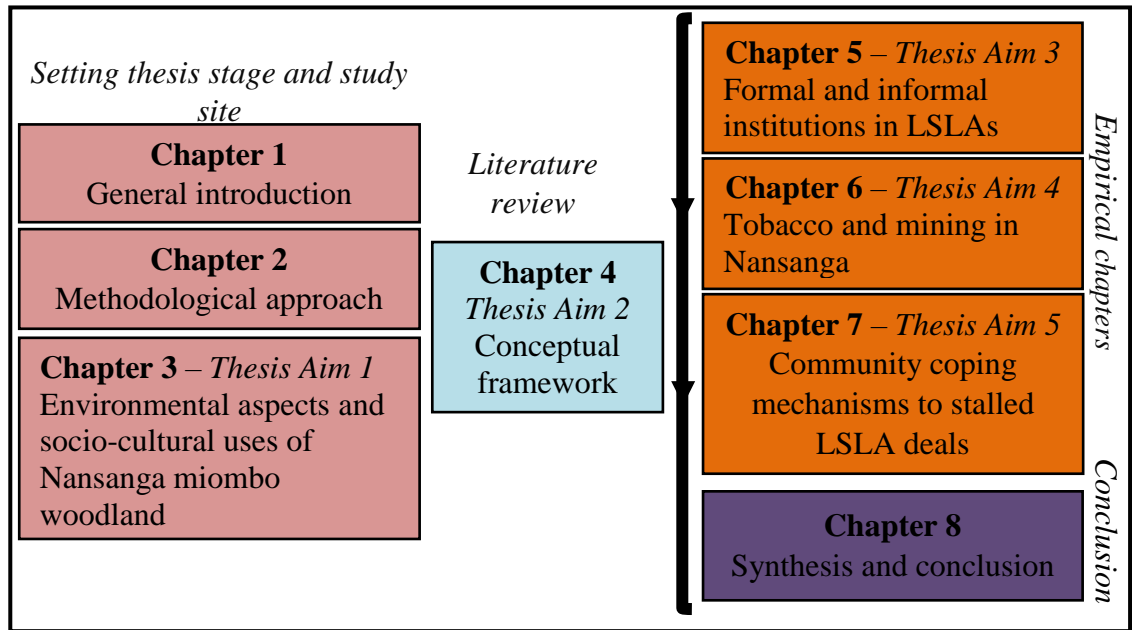
5. To understand the coping mechanism of communities in LSLA deals in limbo of development.

### **1.9.2 Overview of the thesis**

In this chapter, I have given an introduction to LSLAs. I have given a brief overview of LSLAs in general. I have given a brief overview of the evolution of land tenure and the development of agriculture in Zambia. I have also presented the property rights dimensions of LSLAs before highlighting the importance of understanding the SEE impacts of LSLAs. I have introduced the conceptual and theoretical frameworks for the thesis before stating the aims. In this section, I highlight the overview of the thesis that I have written as individual chapters.

Chapter 2 is dedicated to the methodological approach that I used to carry out the research that led to this thesis. Chapter 2 therefore gives a detailed description and explanation of what happened in the field during data collection. Chapters 3 to 7 are each stand-alone chapters, written in the format of scientific papers, using the third person plural (we) rather than the first person singular (I). Chapter 4 on the conceptual framework was developed from literature review though its application is complemented by fieldwork data. In an attempt to make them stand alone yet linked, Chapters 3, 5, 6 and 7 unavoidably contain some overlaps and repetitions particularly in the method and introduction sections. The chapters were developed from the same methodological approaches that I used to collect data in the field. However, efforts have been made to

minimise repetitions. In this regard, Chapter 2 gives a general introduction to the methodological approach, and each of the chapters has its own methods section that details the relevant approaches used.



2 - Figure 1.2 The structure of chapters in the thesis

The thesis is structured in 4 broad sections: setting thesis stage and study site (chapters 1 – 3); literature review (chapter 4); empirical chapters (chapters 5 – 7); and conclusion (chapter 8). The chapters are structured as depicted in **Figure 1.2** above.

### Chapter 2: Methodological Approaches to the Study of Impacts of Large Scale Land Acquisitions

Large scale land acquisitions (LSLAs) are not a new phenomenon (Deininger, 2011; Margulis *et al.*, 2013). For a historical and

contemporary account of LSLAs, see Roudart & Mazoyer (2015). Notwithstanding the long history of LSLAs, understanding their SEE impacts has been elusive to social science research (Cotula *et al.*, 2014). To this end, case studies have been proposed to improve our understanding of SEE impacts of LSLAs to inform debates ‘about the future role of agriculture and food production in times of climate change, biodiversity loss, scarcity of fossil fuel (Messerli *et al.*, 2013 p.534).’ In this chapter, I introduce the relevance of qualitative case-study design, highlighting the importance of a single mixed methods case study to ask the ‘*how, why and what*’ questions in exploratory and explanatory research. I delve into participatory rural appraisal methods for co-production of knowledge about an LSLA deal that is in limbo of development and about which little is known. Finally, in this chapter, I have highlighted my positionality and reflexivity as well as the ethical considerations.

### **Chapter 3: Understanding the Biophysical Characteristics and Socio-cultural uses of Land Targeted for Large Scale Land Acquisitions: Case of the Nansanga Farm Block in Zambia**

Efforts to understand impacts of LSLAs show a ‘considerable lack of information about environmental impacts and even more so about systemic effects on socio-ecological systems (Messerli *et al.*, 2013 p529).’ This is partly attributed to the fact that lands targeted for LSLA deals are often referred to as ‘marginal lands,’ a term without a precise meaning (Nalepa & Bauer, 2012). Most LSLAs happen in ‘black boxes

(Nolte, 2014), and their evolution is characterised by lack of (reliable) of baseline data, scaling down, cancellations, abandonments or transformations of business investment models (German *et al.*, 2011; Cotula *et al.*, 2014). The identification of 'marginal lands' for LSLA deals is based on assumptions and perceptions rather than evidence (German *et al.*, 2013). The aim of Chapter 4 is to quantitatively establish the context-specific environmental characteristics of Nansanga farm block and socio-cultural uses of the miombo woodland where the farm block has been used. The assessment is informed by forest surveys that were conducted on 44 x 0.25 ha randomly sampled plots in two out of three communities that benefited from infrastructure development during the establishment of the farm block. Overall, the results show that Nansanga has been established on a structurally complex, diverse ecosystem, on land that has socio-cultural and economic value to communities. This chapter contributes to challenging the 'marginal land' narrative, and contributes to developing an ecological and socio-cultural perspective and boundary that marks a research path for understanding impacts later in Nansanga.

#### **Chapter 4: A Conceptual Framework for Improving the Understanding of Large Scale Land Acquisitions**

LSLA research agenda is transitioning from the 'making sense' phase (Edelman *et al.*, 2013) to another phase focused on learning about *processes* and *impacts* of land deals. The agenda is transitioning from verifying 'the number of land deals and their acreage, the names of the 'grabbers', their nationality, and what to count or not to count (Oya, 2013

p505).’ As LSLA research develops in this direction, developing conceptual frameworks that improve our understanding of processes and impacts becomes a scholarly imperative. In addition, conceptual frameworks are important to enable a comprehensive understanding of LSLAs as they unfold in different socio-economic and biophysical landscapes. In these landscapes, LSLAs have been studied in isolation from local, national, regional and global socio-economic and political dynamics of which they are part (Cotula *et al.*, 2014). The aim of Chapter 3 is to propose a conceptual framework for improving our understanding of SEE impacts of LSLAs at different policy and geographic levels. Literature has been reviewed on the methodological and epistemological challenges that have rendered elusive a comprehensive understanding of LSLAs. In addition, focus group discussions were done in Nansanga farm block, a Zambian government-led LSLA program to complement reviewed literature. The framework is applied to the farm block. The interviews were therefore done to qualitatively contribute to the understanding of positive and adverse lived experiences of community members following the LSLA program. Without claiming to be a panacea for challenges of researching LSLAs, the framework makes a compelling case for a mix of methodological approaches that simultaneously consider context specific micro level processes and how they are linked to broader, higher policy and geographic level spaces and contexts. The framework points to the danger of researching cases of LSLAs in isolation from their drivers/causes and effects/impacts at different policy and geographic levels.

## **Chapter 5: The Role of Formal and Informal Institutions in (re)Shaping Large Scale Land Acquisitions Deals and their Outcomes in Zambia: Lessons from the Nansanga farm block**

As LSLAs evolve and get (re)shaped by diverse biophysical, socio-cultural and institutional policy landscapes in which they unfold, their socio-economic and environmental footprints have increasingly received scholarly attention, and have lately gained importance in development policy. LSLA empirical research has focused on customary property regimes, the role of the state, elite capture and power imbalances, and land alienation processes, and little is known about the interplay between domestic policy processes and institutional dynamics and LSLA outcomes. As a result, scholarly debate continues about the role of institutional policies and frameworks in either attracting investments or driving them away in general, and how LSLA outcomes are (re)shaped, in particular. Drawing on sampled policy documents in Zambia, key informant interviews within Nansanga farm block, and government departments, investors, and civil society stakeholders, the aim of Chapter 5 is to explore how land governance in Zambia interplays with LSLA deals and LSLA outcomes. Previous studies on LSLAs in Zambia (see Nolte, 2014; Manda *et al.*, 2019) ably report on the ‘governance gap’ of land in the country. They however, do not go far enough to unravel the causes of this ‘governance gap’ of LSLA, and what factors account for positive and negative outcomes of LSLA deals.

## **Chapter 6: 'When the Cat is Away, the Mice will Play:' The Political Ecology of Tobacco Production and Manganese Mining in Nansanga Farm Block in Zambia**

The failure of LSLAs in research has been recognised, however few attempts have been made to frame within host country specifics an understanding of what happens when both state policy and implementation of land deals fail. Linked to Chapter 5 which explores the role of formal and informal institutions in LSLAs deals and their outcomes, the aim of Chapter 6 is to explore the emergence of other economic players when policies and the implementation of LSLAs deals fail after being facilitated by the state. The chapter is informed by key informant interviews with tobacco producers within Nansanga, and employees working for a leaf company, Tombwe Processing Limited. Key interviews were also conducted with foremen at two manganese open pit mines in Nansanga and government officials in the Ministries of Lands and Agriculture, and Zambia Environmental Management Agency. The chapter focuses on the political ecology of tobacco production and manganese mining in an area that was initially designated for the production of food crops. Schoneveld (2017) attributes the failure of LSLAs deals to conflicts of interests, overlapping and competing roles and mandates, lack of community collective action, lack of alternative local development prospects, investor failure to integrate affected communities and use of incompatible business models. In this chapter, I have indicated that even if the implementation of the LSLA deal through the farm block has failed, new economic players, tobacco Leaf Company and manganese open mining companies have emerged on the scene to

foreignise and neo-liberalise local resources in terms of land and labour (Zoomers, 2010; Chimhowu, 2018) for the benefit of entities with financial stamina and access to power.

### **Chapter 7: Livelihoods on Traditional Land in a Development Limbo: How Local Communities Fare in the Nansanga Farm Block, Zambia's Commercial Farming Program**

As LSLAs unfold in diverse biophysical, socio-cultural and political landscapes, understanding the SEE impacts is at the centre of LSLA research agenda (De Schutter, 2011). However, as noted in Chapter 4, factors such as cancellations, lack of baselines and change of investment business models make the understanding of SEE impacts more difficult. Locher & Sulle (2015) note that when projects fail, investors abandon projects or transform investment models. However, how local communities cope with changing conditions as LSLA deals are being implemented is still under-studied. The aim of this chapter is to explore coping mechanisms of local communities in Nansanga farm block that is in *limbo of development*. Participatory rural appraisal methods were used in two communities out of three that received development programs during the establishment of Nansanga farm block. Overall, the findings suggest that for most households, asset portfolios are too lean to adequately enable them to cope with the SEE impacts of an LSLA deal that is in *limbo of development*. Nansanga is an LSLA in a development limbo in that the government is unable to allocate any resources to complete the development of the farm block, the state-funded infrastructure that includes dams and irrigation canal has crumbled.



Private investors have not moved in the farm block to develop the land they bought, and the government has not forfeited the land for failure to develop it, contrary to the provisions in the title deeds.

## **Chapter 8: Synthesis and conclusion**

In this chapter, I have given a synthesis of the findings of the preceding chapters. I have contextualised this case study within the broader LSLA research agenda reflecting on the process of doing this thesis, the findings and the limitations.

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## 2. Methodological Approaches to the Study of Impacts of Large Scale Land Acquisitions

### 2.1 Introduction

This chapter is a reflection on the methodological approaches that underpinned this research work. Researching large scale land acquisition (LSLA) deals has posed methodological and epistemological challenges to social science research. The challenges are related to limited access of information (Cotula *et al.*, 2014), as land deals often happen in 'black boxes' (Nolte, 2014b). The challenges are also related to the incipience of LSLA deals (Borras, 2010), and the fact that LSLA deals are sometimes cancelled, scaled down, abandoned or investment models get changed (Locher & Sulle, 2014).

In an attempt to address some of these challenges, LSLA researchers have increasingly promoted case studies to improve the understanding of socio-economic and environmental (SEE) impacts that are at the core of LSLA debates. Case studies offer more grounded evidence that can inform debates 'about the future role of agriculture and food production in times of climate change, biodiversity loss, scarcity of fossil fuel (Messerli *et al.*, 2013 p.534).' According to Oya (2013 p1535), research on LSLAs has to pay attention to 'the characterisation of a multifaceted and multi-caused phenomenon where context specificity is very important' in order to reduce anecdotal claims that take potential for actual impacts of LSLA on rural livelihoods. Edelman (2013 p498) proposes cases studies as 'they are likely and unavoidably the main means through which scholars and activists can reliably understand what has occurred and what is occurring on the

ground and to establish baselines for measuring subsequent impacts.’ Scoones *et al.* (2013) also support participatory action research in which those involved and affected by land deals are part of knowledge generation and building rather than being replaced by researchers.

Against this background, this research work used a case study. The case study was informed by a mix of research methods. It used participatory rural appraisal methods to qualitatively explore the socio-economic impacts. It also used forestry survey methods to quantitatively assess the environmental characteristics of land targeted for an LSLA deal. The study took Nansanga farm block, a government of Zambia (GRZ)-led LSLA program for commercialisation of customary land for agricultural development, food production, minimisation of rural-urban migration and general rural development (GRZ, 2005). Nansanga farm block, in central province of Zambia, was selected from among nine farm blocks decreed by GRZ in 2002 (GRZ, 2005) because it was the most advanced in terms of infrastructure development and allocation of parcels of land to would-be investors.

I went for fieldwork 3 times: September 2016 – January 2017; October 2017– January 2018; and March 2018 - June 2018. The fieldwork showed that Nansanga was in *limbo of development*: developed infrastructure had begun falling apart; there was lack of financial resources to complete infrastructure development; there was lack of policy guidance from the government regarding the running of the farm block and future development; and there was emergence of other socio-economic activities, notably tobacco production and manganese mining. Tobacco and mining were not part of the initial conception of the farm block program.

Cotula *et al.* (2014) indicate that there are many failed and cancelled land deals in host countries, and Oya (2013b) suggests that there are consequences relevant to classic agrarian questions for evaluating impacts of failed land deals. These questions include whether LSLAs are an agriculture-based accumulation of global capital or speculation on land (Oya, 2013c). LSLA deals in *limbo of development* show a mismatch between plans and reality in terms of implementation. For such LSLA deals, Oya (2013b) argues that the debates about impacts of LSLAs become reduced to the negative impact of a speculative rush for land on material realities of land access and livelihood.

This chapter is organised as follows: first, a brief review of the research design of a qualitative case study is presented in Section 2.2. The section puts into perspective the rationale for choosing a case study and a mixed methodological approach to qualitatively and quantitatively understand the SEE impacts of a land deal that is in *limbo of development*. The section also reflects on the limits of doing qualitative case studies in terms of generalising results to wider populations. Second, the experience in the field is presented in Section 2.3. Third, research methods are presented in Section 2.4. In this section all the methodological approaches that were used for this study have been detailed. In Section 2.5, positionality and reflexivity are presented, reflecting on how I carried out the research in Nansanga farm block. Finally, Section 2.6 on ethical consideration is presented.



## **2.2 Qualitative case-study design and methodological approach**

In this section, a brief review of qualitative case-study is presented, distinguishing it from other methods. Sampling strategy is also presented. A study can be informed by either quantitative methods, qualitative methods or a mix of these. As research strategies, these methods can take the form of either single case study or multiple-case studies (Cooper, 2003). This particular study was informed by a mix of qualitative and quantitative single case study. According to Fetters *et al.* (2013 p2135), 'the nature of the research question drives the choice of methods.' The decision to use qualitative methods was influenced by the aims of the research and the specific research objectives and questions that need to be answered (Ritchie & Lewis, 2014) rather than by the mere methodological preferences of the researcher (Marshall, 1996). Creswell *et al.* (2014) characterise mixed research methods as a methodological approach that uses rigorous quantitative research and rigorous qualitative research. The quantitative dimension assesses the magnitude and frequency of constructs, while the qualitative dimension explores the meaning and understanding of constructs of a phenomenon. Mixed methods research also focuses on research questions that call for real-life contextual understandings, multi-level perspectives, and cultural influences (Creswell *et al.*, 2014). Thus, mixed method research draws 'upon the strengths of both quantitative and qualitative approaches and provides an innovative approach for addressing contemporary issues (Fetters *et al.*, 2013 p2135).' Citing O'Cathain *et al.* (2010), Fetters *et al.* (2013 p2135) assert that:

‘...qualitative data can be used to assess the validity of quantitative findings. Quantitative data can also be used to help generate the qualitative sample or explain findings from the qualitative data. Qualitative inquiry can inform development or refinement of quantitative instruments or interventions, or generate hypotheses in the qualitative component for testing in the quantitative component.’

The fieldwork was carried out in three phases: the first two (September 2016 – January 2017 and October 2017– January 2018) were qualitative, and the last one (March 2018 – June 2018) was both qualitative and quantitative. Based on the research aims, a qualitative inquiry was prioritised over quantitative methods. The point of interface, that is, the point where we mixed the research methods (Creswell *et al.*, 2014) was during the forest surveys and collection of data from tobacco growers and the manganese mining companies. Thus, the first fieldwork experience served to qualitatively gather contextual data that informed research design and research objectives. The second fieldwork experience was the main one that was used to collect qualitative data. We used the third phase of fieldwork (March 2018 - June 2018) to simultaneously collect both quantitative and qualitative data. This sequence ensured that quantitative data explained findings from qualitative data, and on the other hand, qualitative data assessed the validity of quantitative findings (Fetters *et al.*, 2013).

Based on Yin (2003), the choice of a mixed approach was premised on three fundamentals: i) the aims of the research or the questions posed; ii) the extent of control an investigator has over actual behavioural events; and iii) the degree of focus on contemporary as opposed to historical events. In this respect, Yin (2003 p13) defines a case study as ‘an empirical inquiry that investigates a contemporary

phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.'

To understand the socio-economic and environmental (SEE) impacts of LSLA deals in Zambia, the study merged an explanatory inquiry with an exploratory one by asking the analytical *why* and *how* questions and the analytical *what* questions, respectively. The *what* questions offered propositions for further investigation into the LSLAs (Yin, 2003). The merge of the explanatory *why*, *how* and the exploratory *what* approaches in this study provided illumination and understanding of the humanistic and socio-economically complex phenomena (Marshall, 1996) such as LSLA deals. The *why*, *how* and *what* questions 'deal with operational links needing to be traced over time, rather than mere frequencies or incidence (Yin, 2003 p6).' The qualitative dimension of this study, as Cassell & Symon (2004) suggest, offered the possibility to understand LSLA deals with the researchers putting themselves in the shoes of the interviewee to understand *how* and *why* they hold the perspective that they do. While the *what* questions in this study constituted the substance (the impacts), the *how* and *why* constituted the form (Yin, 2003), that is, the *impacts* and *processes* of LSLA deals, respectively.

The qualitative dimension of the study called for an interviewing approach that ensured that the questions were focused on *processes* of land acquisitions and probing the lived experiences of the people of the processes. Interviewing also ensured that the questions reflected relevance to the sequence of actions according to the world view of the interviewees (Cassell & Symon, 2004) who are the affected community members. As a single mixed methods case study asking the *how*, *why* and *what* questions, the study included elements of exploratory,

descriptive and explanatory research. This mix helped to gain an understanding into the SEE impacts of LSLA in Nansanga from affected communities themselves, and from technical measurements of a selected number of environmental parameters.

The contemporary wave of LSLAs has got its own idiosyncrasies that distinguish it from other past experiences of the phenomenon (see Roudart & Mazoyer (2015). Food security, biofuel production, financial investments and carbon markets, among others underpin the current wave of LSLAs. These are all contemporary development issues, as opposed to historical events. Stakeholders who are involved in LSLA can be reached. This offers an opportunity to interact with community members as well as other stakeholders in a manner that allows for an interactive co-production of knowledge and learning about the phenomenon under study.

As a researcher, I learned about the impacts of Nansanga farm block, an example of an LSLA 'from the horse's mouth.' Through interviews with community members and other stakeholders, interviewees had an opportunity to reflect and share their thoughts about the Nansanga LSLA deal with me as both an outsider and researcher (Cassell & Symon, 2004). Nansanga farm block is there today, it is a 'now' event. It does not belong to the past that would need the use of primary and secondary documents, cultural and physical artifacts as source of evidence (Yin, 2003) to learn about it. These remain useful and are complemented by the opportunity for the researcher to directly observe the impacts of the phenomenon on the community and interview community members on the phenomenon (Yin, 2003). This contemporary nature of the topic of study justifies the use of a single case study design with a mixed method approach.

Additionally, the mixed method research approach was important because the SEE impacts could not successfully be understood by either qualitative or quantitative approaches in isolation. The choice of a mixed method research was rationalised by the theoretical lens through which LSLA as a socio-economic and environmental issue on rural livelihoods was studied. Political ecology theoretical framework was used to understand the distribution of SEE impacts of LSLA deals that are (re)shaped and mediated by asymmetrical access to power and resources by different interest groups (including rural communities in Nansanga, policy makers, investors). Political ecology is the template (see Yin, 2003) with which empirical results of this study on the SEE impacts of LSLA on Nansanga were compared. The phenomenon under study required a qualitative research approach that allowed interviewees to describe and interpret it as they experience it (Cassell & Symon, 2004), but also a quantitative approach to understand the magnitude of impacts that could not be captured through people's experiences of the phenomenon. Thus, the mixed approach enabled the possibility to investigate and retain the holistic and meaningful characteristics (Yin, 2003) of Nansanga as a real-life event and its level of gravity. Results from a case study like this one are useful for both generating and testing of hypotheses (Flyvbjerg, 2016), and for contributing to meta-analyses of *processes* and *impacts* of LSLAs.

Qualitative case-study research has been criticised for different reasons. According to Yin (2003), case studies are criticised for lack of rigour, little basis for scientific generalisation of results, and that they take too long and result in massive, unreadable documents. Qualitative case-study research uses a naturalistic approach that seeks to understand phenomena in context-specific settings such as LSLA in

Nansanga where the researcher does not attempt to manipulate the phenomenon of interest (Yin, 2003; Golafshani, 2003; Marshall, 1996). During the research process, the researcher makes no attempt to make claims about the interviewee's experiences of the phenomenon under study (Cassell & Symon, 2004). Since it is context specific, it does not offer opportunity for generalisation of research results (Thomas & Harden, 2008). It speaks to specific time and specific group of research participants. To this criticism, Yin (2003) responds that case studies that embrace qualitative research do not represent 'samples' that lead to statistical generalisations about their samples based on empirically collected data. However, case studies are generalisable to theoretical propositions rather than to populations or universes. The mode of generalisation for qualitative research is making analytic generalisations. In qualitative research, studying whole populations is rarely practical, efficient or ethical (Marshall, 1996).

The second criticism levelled against qualitative case-study research concerns the researcher's subjectivity and arbitrary judgements without hard facts of the phenomenon under study (Flyvbjerg, 2016; Malterud, 2001). As qualitative research aims to explore socially grounded human issues, it remains inductive and holistic, iterative and flexible in approach, and the researcher is an integral part of the research process (Marshall, 1996). This is reinforced by the fact that the relationship between the researcher and interviewer is important when conducting interviews in qualitative research (Cassell & Symon, 2004; Golafshani, 2003). According to Cassell & Symon (2004 p11), in qualitative research, the 'interviewee is seen as a 'participant' in the research, actively shaping the course of the interview rather than passively responding to the interviewer's pre-set questions.'

The 'subjectivity and arbitrary judgements' critique is surmountable through triangulation methods to achieve quality and transferability of research results in qualitative research (Tobergte & Curtis, 2013). Data triangulation methods to achieve quality and transferability are to qualitative research as validity and reliability are to quantitative research to rationalise statistical generalisation and replication (Yin, 2003). In qualitative research indirect assurance methods of trustworthiness of results are used for assessing quality outcomes, and transferability of results as a measure of utility of results (Marshall, 1996).

Reliability in quantitative research relates to 'purpose of explaining' causal relationships between variables, while in qualitative research, the concept relates to the purpose of 'generating understanding' of the phenomenon under study (Golafshani, 2003). Marshall (1996) observes that the goal of qualitative research for an improved understanding of complex human issues is more important than generalisability of results. He adds that 'studying a random sample provides the best opportunity to generalise the results to the population but is not the most effective way of developing an understanding of complex issues relating to human behaviour (ibid, p523).' According to Malterud (2001 p483), qualitative research involves a 'systematic and reflective process for development of knowledge that can somehow be contested and shared, implying ambitions of transferability beyond the study setting.' In this regard, to give credence to the evidential claims of the results of this study, a mixed approach of qualitative and quantitative approaches were used to improve an understanding of the lived experiences of communities of Nansanga farm block.

The fore-going section has shed light on the rationale for using a mixed method approach for this study. It has highlighted the relevance of using a case study informed by qualitative and quantitative methodological approaches, premised on the research aims in Section 1.9. In the next section, some of the points raised in this section are reiterated to highlight the sampling strategy that was used in the study.

### **2.2.1 Sampling strategy**

Building on the previous section, this section focuses on the sampling strategies used for qualitative part of this study. Qualitative research helped to unpack meanings, to develop explanations or to generate ideas (Ritchie & Lewis, 2014 p82) about the SEE impacts of Nansanga farm block in *limbo of development*. This called for appropriate sampling techniques to enable the unpacking of meanings and develop explanations. Sampling was necessary because for a qualitative study as this one, it would not be possible to cover all households (Cassell & Symon, 2004).

Qualitative research does not concern itself with statistical representativeness because of small sample sizes and the non-use of probability sampling techniques (Murphy *et al.*, 1998). Probabilistic sampling methods in quantitative research are needed to allow for statistical generalisations which are neither appropriate nor the primary goal of qualitative case study research (Murphy *et al.*, 1998). For this reason, an appropriate sample size in qualitative research is one that ensures that research questions are adequately answered (Marshall, 1996). This is verifiable when in the research process, the researcher recognises data saturation for purposive sampling or theory saturation



when building theory in grounded theory. That is, there are no more new categories, themes or explanations emerging from the data being collected (Marshall, 1996).

Qualitative research is carried out in a single setting, or with a small sample of informants. Ritchie & Lewis (2014) indicate that as a rule of thumb, qualitative samples for a single study are usually below 50. In this way, qualitative research fails to meet the assumptions of the sample statistics upon which inferences can be made (Murphy *et al.*, 1998). In qualitative research, a researcher is more concerned with data richness (Higginbottom, 2004), and trades-off breadth for depth (Murphy *et al.*, 1998).

According to Ritchie & Lewis (2014), the twentieth century has seen the emergence of different traditional approaches to qualitative research. These are ethnography; phenomenology/ethnomethodology leading to conversation analysis, discourse analysis and protocol analysis; symbolic interactionism leading to grounded theory and ethogenics; constructivism and critical theory. Of these traditional approaches, Higginbottom (2004) indicates that phenomenology, grounded theory and ethnography are the predominant qualitative methodologies.

Phenomenology seeks to illuminate meaning and essence of given phenomena (Higginbottom, 2004). Grounded theory builds interpretative theories from emerging data and selecting a new sample to examine and elaborate on this theory (Marshall, 1996), and ethnography aims to understand 'the social world of people being studied through immersion in their community to produce detailed description of people, their culture and beliefs' (Ritchie & Lewis, 2014 p12). The choice of qualitative approaches is influenced by what a

researcher seeks to achieve, the knowledge being sought, and the choice needs to reflect the logic that underlines the proposed analysis (Murphy *et al.*, 1998).

Sampling is critical for both qualitative and quantitative research to justify and validate the application of research findings beyond the current or immediate context that is under study (Murphy *et al.*, 1998). Sampling strategies in qualitative research are determined by the qualitative methodology selected to carry research out. While in ethnographic methodology, the study sample should demonstrate membership of the phenomenon under study, grounded theory 'demands concurrent data collection and analysis, so that more individuals who display the characteristics that warrant further investigation can be recruited to the study as the research progresses and preliminary findings emerge (Higginbottom, 2004 p13).'

The sampling logic in quantitative research involves drawing a representative sample to be studied from an enumeration of an entire population, to justify inferential statistics (Cooper, 2003). In other terms, the results of the studied sample are generalised back to the total population from which the sample was drawn (Marshall, 1996). In study cases where the aim is to generalise empirical results to the wider population, the choice of sampling techniques remains critical (Cassell & Symon, 2004). This is not the case in qualitative research where the aim is to ensure that the results or hypothesis from the study can be applied in other settings (Malterud, 2001).

In qualitative research, representative sample is not desirable. According to Marshall (1996), representative sampling in qualitative research would be marred by sampling error and introduce bias. He adds that a representative sample requires that characteristics of the

unit of analysis in the whole population be known. Second, there is lack of evidence that values, beliefs and attitudes that form the core of qualitative investigation are normally distributed. Third, performing random sampling to get representative sample will not be useful in getting better informers with knowledge and information about the phenomenon under study. These factors make random sampling to get a representative sample counter-productive in efforts to carrying out qualitative research.

Probability sampling allows for statistical inference to estimate, within precise margins of error, the distribution of a phenomenon of interest in the universe from which the sample has been drawn (Murphy et al., 1998). This sampling strategy is appropriate to quantitative research. Non-random sampling on the other hand, is motivated by the need to provide information rich-data about a phenomenon under study (Higginbottom, 2004). Non-random strategies are therefore, appropriate to qualitative research. Higginbottom (2004 p15) indicates that the following 5 sampling strategies are commonly referred to in qualitative research:

1. Convenience (accidental) samples - participants who are readily available and easy to contact;
2. Purposive sample - participants who have specific characteristics or features;
3. Theoretical samples - a component of grounded theory, that enables new or emerging domains to be explored during the process of the research;
4. Selective sampling - the selection of cases prior to the conduct of research; and

5. Within case sampling - selection of participants within a specific group.

This research employed a mix of convenience and purposive sampling strategies. The research employed an ethnographic approach that seeks empirical generalisation rather than theoretical generation that is appropriate to grounded theory. The choice of convenience and purposive sampling strategies was on pragmatic grounds. As in Murphy *et al.*, (1998), the sampling decisions were made at two levels:

- Initial decision about the communities within Nansanga farm block that would be studied; and
- The decision about *what* and *whom* to study within such communities. This within-case sampling decisions reflected the different temporal patterns and the socio-economic contexts of community members within the selected communities in Nansanga farm block.

Based on the two points above, the sampling strategy employed ensured an inclusion of relevant households and community members within the farm block that offered the best possible opportunity for knowledge co-production and learning. The selected households and community members held characteristics expected or known to have relevance to the phenomenon under study (Ritchie & Lewis, 2014) which in this case was the establishment of Nansanga farm block. In this regard, the sampling:

- Served what Ritchie & Lewis (2014) refer to as ‘symbolic representation’ because the sample had to represent and symbolise characteristics or features of relevance to the subject matter under study; and
- Demonstrated enough diversity to allow for the identification and inclusion of the full range of factors or features that are associated with the establishment of Nansanga farm block. Diversity also enabled the investigation of the interdependence of the most relevant factors to the subject matter under study.

As Murphy *et al.* (1998) suggest, the sampling strategy for this qualitative research was directed towards empirical (albeit non-probabilistic) generalisation more than theoretical generalisation that is appropriate to grounded theory. To purposively sample and achieve desired empirical generalisation, Palys (2008) suggests to ‘think of a person or place or situation that has the largest potential for advancing your understanding and look there.’ To ensure symbolic representation and diversity, the following purposive selection criteria in **Table 2.1** below were the basis for sampling in Nansanga farm block.

**2 - Table 2.1** Purposive sampling selection criteria

Criteria	Justification
Demographic distribution	It was assumed that household clusters signal socio-economic cohesion. It was also practically easier to meet community members in more densely populated areas.
Wealth ranking	The assumption and hypothesis were that socio-economic status of households influence levels of access to resources, access to socio-economic opportunities, exercise of power

Criteria	Justification
	and strategies to cope with shocks.
Geographical location within the farm block	The assumption was that access to emerging opportunities within the farm block depends on where communities voluntarily or involuntarily live, and that this would reveal land access/loss, immigration/emigration and potential threats for eviction. In addition, if the household was near the main truck road and other infrastructure built during farm block establishment, the assumption was that they were impacted by the process.
Family unit composition/marital status	The assumption was that family composition and marital status (can) serve as strong safety nets, and (can) influence coping strategies and capacities of households. These criteria therefore brought in diversity but also key features relevant to the understanding of labour availability per household
Livelihood activity	This ensured the inclusion of community members who have been employed in the farm block establishment process, and those who have not to bring in diversity of perceptions about the socio-economic benefits. It was also hypothesised that non-agricultural based-livelihoods such as employment on others' farms is a coping strategy that (potentially) compensates for the loss of access to land, or simply emerges as an alternative livelihood strategy.
Gender	The assumption was that women and men have differential access to resources and socio-economic opportunities in rural areas.
Age	To ensure a balanced demographic representation in the sample.

The sampling design followed the stages below:

1. Definition of parent population: the parent population referred to the households of the community areas of Mingomba and Kabundi within Nansanga farm block. To increase the diversity to account for other factors relevant to the subject under investigation, households of non-Lalas who have immigrated to the farm block were also considered;

2. Sample frames: Sample frames can be existing lists or information sources. Our sample frame was based on outdated registers of households in the chiefdom from the village headmen. However, these were complemented by key informants appointed by the Senior Chief advisor, the *Chilolo*. As detailed above, the sample frame was based on: demographic distribution; wealth ranking; geographical location; family unit composition/marital status; livelihood activity; gender; and age. A combination of snowballing and community leaders for generating a sample frame enriched the diversity within the sample and helped to minimise bias that could easily be introduced through friendship and family links; and
3. Sample size: Since the primary interest is in the richness of data to be collected for empirical generation rather than theoretical or statistical generation, the sample size was not pre-determined. Questionnaires, key informant interviews and focus groups discussions were conducted until we realised that there were no more new emerging themes and additional information that would be collected from including additional interviewees.

The sampling strategy for the quantitative approach during the forest surveys is detailed in Chapter 3 on understanding the biophysical characteristics and the socio-cultural uses of the miombo woodland in Nansanga. Having laid the background of the case study approach, the

rest of this chapter focuses on the experience, how it happened in the field.

### **2.3 The experience in the field**

This section details the engagement with community members during data collection, a process that can best be referred to as 'data generation through learning.' The case study enabled to ask the *what*, *why*, and *how* questions to understand community experiences of an LSLA deal in *limbo of development*. The focus was on having an enriched understanding of experiences of the socio-economic and environmental (SEE) implications in Nansanga rather than generalising the findings to broader cases of LSLA deals. The 'data generation through learning' focused on transferability, that is, the application of the findings or certain aspects of them in other similar contexts if a similar research design is adopted by another researcher (Andres, 2012). Using multiple data collection sources, and taking the 'data generation through learning' from community members in their socio-cultural context (Yin, 2003) was in view to providing a more 'convincing and accurate' case study (Houghton *et al.*, 2013). Thus, efforts were made to ensure that the case study approach to understanding the SEE impacts of an LSLA deal in limbo of development stands the rigours of qualitative research assessment: credibility, dependability, confirmability and transferability (see Yin, 2003; Graneheim & Lundman, 2004; Ritchie & Lewis, 2014).



### 2.3.1 Engaging with community members

The research project sought to understand the SEE impacts of LSLAs in a rural area with customary land tenure. In other words, the research sought to learn about the SEE impacts as lived experiences of LSLAs of community members in Nansanga. The success of this data generation and learning experience and process in Nansanga partly depended on the level of engagement with community members in a participatory manner. This meant, as Scoones *et al.* (2013) suggest, supporting participatory action with community members experiencing impacts of LSLAs, generating knowledge about their own experiences, rather than giving them the informer's position. Whitfield (2014) indicates that contextualised histories, knowledges, politics, priorities, social interactions and trust shape how risks of development programs are constructed. These elements also shape how stakeholders or affected communities communicate their experiences among themselves but also to outsiders. Therefore, engaging with community members in an ethnographically and participatory approach was important.

During the three phases that I was doing fieldwork (September 2016 – January 2017; October 2017– January 2018; and March 2018 - June 2018), I was supported by three research assistants. Two were undergraduate students from the Copperbelt University, and one was a college teacher with a farm in Nansanga. That is, he was one of the people who had bought land in the farm block. During the first phase of fieldwork trip, an agricultural extension officer from the Ministry of Agriculture in Serenje, a district town within which Nansanga farm block is, supported me. He was also part of the government team that negotiated with the Senior Chief Muchinda for the conversion of part of

the chiefdom's land from customary land to leasehold. He was well known as he also was one of the recruiters for casual jobs during the demarcations. With him we drove throughout Nansanga farm block, and he introduced us to traditional authorities. Some of them vaguely remembered me because in 2011, I went to Nansanga farm block when I was collecting data for my MSc research project. In this respect, I was quite familiar with Nansanga. But having a known government staff with us helped to create trust that facilitated our engagement with the community (more in Section 2.6 on positionality and reflexivity).

The traditional authorities were the entry points to the communities in which we undertook this research. This was part of the cultural protocol. We were advised to take with us gifts for the traditional leaders because, culturally, you don't greet traditional leaders 'empty handed.' We lodged in Nansanga during the three field trips. We were hosted by families. The *Chilolos* and *Sulutani* (chief advisors and village heads, respectively) played the most critical role in organising our focus group discussions, key informant interviews, transect walks, resource mapping, community wealth ranking, transect walks and forestry surveys. The *Chilolo* in Mingomba and the *Sulutani* in Kabundi were part of the group of traditional botanists during the forestry surveys. In Nansanga, having traditional knowledge about the socio-ecological environment is a mark of not only age, but also experience which translates into wisdom. This is often summarised in two popular proverbs: 'a bearded mouth does not lie' and 'an elderly may miss a target with a throw of a stone, but never a word.' Thus, traditionally, a young person cannot hold a position of a *Chilolo* or *Sulutani*.

While the government staff introduced us to Nansanga and traditional authorities that helped to win people's acceptance,

cooperation and trust, the three research assistants helped with taking notes during interviews, in addition to the ones I was taking. Every evening, we compared and summarised notes of the day.



Introduction to community members by the government staff (left, November 2017) and traditional leaders (right, March 2018). Photo Y.Mulumbwa and M. Chiposa, respectively, Nansanga farm block.

During data collection about tobacco production and estimation of fuelwood consumption, the research assistants helped with weighing the logs as well as taking GPS points of tobacco farms and houses of tobacco producers. During forestry surveys, we were split into two groups. We had four traditional botanists in each community. One group comprised two traditional botanists and two research assistants, and the other comprised two traditional botanists, one research assistant and myself. Research assistants, including myself took measurements of tree diameters and heights, and recorded names of trees as traditional botanists named trees. Prior to fieldwork, the research assistants had a workshop with me during which I taught them about random sampling techniques, establishing sample plots, data collection, taking notes and use of research tools such as questionnaires in the field. I also taught

them how to use instruments for measuring tree diameters and tree heights (using tapes and Vertex IV and transponders, respectively).

In Nansanga, we were outsiders. Word had gone round that we were in Nansanga. During focus group discussions, the *Chilolo* or *Sulutani* introduced us to the groups of people that we were meant to speak to that the *Chilolo* or *Sulutani* had organised. As we began talking to them, it was evident that they were expecting us because there was always someone in the group who greeted us with, '*welcome our visitors, we have been briefed about you and your coming.*' For focus group discussions, the *Chilolo* or *Sulutani* targeted community members who had participated in infrastructure development, such as those who had casual jobs to clear bushes for road and dam construction or demarcation of parcels of land. They also included those who were threatened to be displaced, those whose land was partly taken away as well as those who were close to developed infrastructure, consistent with the criteria in Table 2.1.

For community wealth ranking, the *Chilolos* and *Sulutanis* used their registers, and with the help of three other community elders, ranked community members into low wealth class, medium wealth class and high wealth class households. This typology was wholly based on how community members perceive one another, and had no reference to formal national socio-economic surveys. Participants in focus group discussions as well as resource mapping comprised both men and women of different age groups and different wealth classes.

As the principal investigator, I led the asking of questions during focus group discussions. I speak the language of the Lala people, and therefore, the chances of being misunderstood or misunderstand the discussions were not linked to language translations. Unlike in most

cultures in Zambia, among the Lala people, women have a prominent role in resource access and management. While in most cultural settings, only men usually speak to strangers, among the Lala people, women freely join in the conversations, and lead in responding to questions. This was clarified by the assertion during one of the informal evening fire gatherings (see details in the section on specific approaches and methods) that in *'Lalaland, women rule.'* This is explained by the fact that Lalas have uxori-local marriages where the man who is marrying leaves his own relatives to go and live at the family of the wife. *'If a dog folds its tail between its legs and does not bark in a new place, what about a man?'* is a question that is used by, interestingly, both men and women to express a married man's position in Lalaland. That the man move to live among the people of his wife is an empowering strategy in favour of women. The man has to work hard to demonstrate his ability to take care of the wife and children in the presence of his in-laws. Failure to do so, or in case of gender based violence, the man gets expelled by the family of the wife, and is not allowed to take custody of any of the children. To further strengthen a woman's position in Lalaland, dowry does not exist unlike in other cultures in Zambia. This means that the family of the wife does not owe the family of the man anything. *'Men join wives' families empty-handed, and if they misbehave, they leave empty-handed,'* community members mentioned during one of the evening fire gatherings.

This section has detailed the ways in which communities were engaged and the level of support from the government official, research assistants and the traditional authorities. The section has highlighted the important role that trust played in engaging with community members in learning about the SEE impacts of the Nansanga farm block as

community members experienced it. Section 2.4 delves into the actual methods.

## **2.4 Research methods**

In this section, research methods have been presented. First, the theory of knowledge that underpinned the chosen research methods is presented. Second, participatory rural appraisal methods are presented before actual methods.

### **2.4.1 Knowledge co-production with communities as ‘experts’: Socio-political constructivism**

The methodological approaches in this thesis are supported by the socio-political constructivist theory of knowledge. Whitfield (2016 p7) succinctly summarises the tenets of the theory in the following three points:

- Scientific enquiry has limitations within a real world that is highly complex, and therefore uncertain and indeterminate;
- Knowledge is not produced independently of values, assumptions and framings that are shaped by social interactions within, and experiences of, the real world (including trust in industries and regulating bodies), and political motivations; and
- For these reasons, a multiplicity of knowledge bases can produce legitimate and insightful knowledge and narratives, although claims of objectivity should be taken with caution.

As introduced in **Chapter 1**, LSLA deals unfold in complex socio-economic, political and biophysical contexts. In terms of scope, the factors that drive them may be local, national, regional or global or a combination of these levels. Given the different levels of factors and actors, as argued in **Chapter 4** of the thesis, turning to different actors at different geographic and policy spaces can give more credence to knowledge produced about a phenomenon that is dynamic and involves multiple stakeholders or actors with different interests and narratives. Based on Whitfield (2016) as quoted from Leach *et al.* (2010), I am using the word 'narrative' to imply a storyline that encapsulates the different interests and motivations of stakeholders as they, with incomplete knowledge of the phenomenon, argue for or against LSLA deals. Narratives are developed and (re)shaped as LSLA deals evolve in different complex socio-economic, political and biophysical landscapes.

The experiences and meaning of the Nansanga farm block land deal and its SEE impacts can possibly be best explained by Nansanga community members themselves. In other words, the understanding of the experiences of the SEE impacts of establishing a farm block in Nansanga is possible by learning about how communities have defined the LSLA deal, the socio-economic meanings they have ascribed to the land deal and how they are able to distinguish the ex-ante from the ex-post of the farm block. This makes a case that 'evidence includes not only systematic scientific research, but also knowledge gained through experience, management practice and processes of reflexive social learning (Whitfield, 2012 p250).' The community knowledge founded on how they have lived and experienced the establishment of Nansanga farm block, is therefore neatly embedded in their socio-cultural

environment (Atwater, 1996). However, the new phenomenon *among them as Lala people in central Zambia* has been shaped by national, regional and global dynamics of which it is a part. From the perspective of socio-constructivism, each of these geographic scale represents decision points of social actors (Winner, 1993) in shaping LSLA deals (see Chapter 4).

Discussing how LSLA deals are shaped in Zambia needs to recognise the country's bifurcated land governance structure with its different social actors at different decision points (see Chapter 5). Additionally, land use and policy priorities that underpin land governance respond to the nation's development goals that in part are influenced by regional and global socio-economic and political dynamics. Given the existence of many social actors at different geographic and policy spaces (see Chapter 4), there is a contestation of narratives around the benefits and costs of LSLA deals. At national level, for example, the LSLA narrative by the government of Zambia is based on food security and rural development (GRZ, 2005). The narrative of the World Bank, as a development agency, is that LSLAs are required to position Zambia to compete in global markets of agricultural commodities (World Bank, 2009). The alternative and contradictory narrative of civil society organisations is that LSLAs in Zambia are leading to involuntary displacements (Human Rights Watch, 2017). Whose narrative counts among actors? Whose should be trusted, and why? How are these narratives constructed?

It was beyond the scope of this thesis to delve into how narratives around LSLA deals are socially constructed by different social actors at different geographic and policy spaces. However, it is important to recognise that there are different social actors in LSLA deals who are



differently positioned and command environmental goods and services from land that are useful to their well-being (Leach *et al.*, 1999). In this thesis, I interviewed different social actors as stakeholders in land governance in Zambia to understand the meanings that they have given to LSLA deals in the country, rather than how they construct the meanings (for a thorough understanding of how different knowledge bases and narratives of change are constructed and the mechanisms by which certain narratives win out over others in African agriculture, see Whitfield, 2016).

Knowledge co-production with communities about the SEE impacts of LSLA deals allowed me to 'theorise less and contextualise more (Whitfield, 2014)' the *impacts* and *processes* that led to them. In the next sections, participatory rural appraisal approaches are presented as they were used to engage with community members in Nansanga at individual, local and institutional levels. The participatory approaches were useful and insightful in learning from community members, recognising that contextualised knowledge of community members, 'non-experts,' developed and acquired through everyday experience of societal phenomena is an important source of information (Whitfield, 2014) about the SEE impacts of LSLA deals. In this process of knowledge co-production, I played the role of a learner, but also of a facilitator of my own learning by using structured methods, and asking appropriate questions to achieve the aims of the research work. As a learner and facilitator, I also played the role of making sense out of the community members' experiences of Nansanga farm block. I see this thesis as another role that I have played, as in it, I have packaged the knowledge I co-produced with community members as well as other stakeholders that were involved in providing information.

### **2.4.2 Participatory Rural Approaches for co-production of knowledge**

This section describes what participatory rural approaches are and how they were used to rationalise the choice for using them to understand the SEE impacts of Nansanga farm block.

Participatory rural appraisal (PRA) methods are a convergence of a number of research programs that are commonly used in participatory action research, agroecosystem analysis, applied anthropology, and farming systems (Campbell, 2001). They represent a set of approaches that offers a platform for rural communities to present, share and analyse their knowledge of life and conditions (Abbot, 1996). They have emerged and evolved especially among development practitioners (Chandra, 2010; Martin & Sherington, 1997) to 'enable local (rural or urban) people to express, enhance, share and analyse their knowledge of life and conditions, to plan and to act (Chambers, 1994 p1253).' The principal aim is to allow community members to represent and analyse information about their livelihoods or other issues, and make their own plans (Chandra, 2010).

PRA methods allow for a better understanding of the role of technology in complex rural systems. That is, they allow for an identification of particularly resource deficient members of the community; enable more rapid testing, uptake and diffusion of results; offer an opportunity for complementarity between formal research and informal technology development (Chandra, 2010) and enable researchers and development practitioners to learn by building on indigenous knowledge (Martin & Sherington, 1997). Within the development community, the promotion of participation is premised on

the understanding that involving people is critical to the success of development interventions (Chandra, 2010).

PRA methods are important when little is known about a phenomenon under study, and the phenomenon does not belong to the past (Campbell (2001). The choice of PRA methods for this study was based on two considerations: the establishment of farm block in the context of the contemporary LSLAs in Zambia is incipient and therefore, beyond the political and media rhetoric, very little is known about the nature and severity of SEE impacts on rural communities. Second, the research was carried out in an area where LSLA has happened, and therefore community members who have been impacted by LSLA are the same ones that were part of the participatory rural appraisal methods as they are related directly to the nature of the phenomenon being investigated. This enabled the involvement of community members as co-producers of knowledge about LSLAs. It gave community members the opportunity to reflect on their own experience and draw meaning from LSLAs to enhance the understanding of the impacts of the phenomenon on their socio-ecological system.

#### **2.4.2.1 Focus group discussions and key informant interviews**

According to Kitzinger (1995 p299), 'focus groups are a form of group interview that capitalises on communication between research participants in order to generate data.' With the support of traditional leaders (*Sulutani* and *Chilolos*), village headmen and Senior Chief advisors, respectively, groups of community members were convened in different areas for open-ended discussions on the impacts of establishing the farm block in Senior Chief Muchinda. With a

questionnaire guide, I brought up topics of relevance to the understanding of the SEE impacts of LSLAs in Muchinda chiefdom (Calder, 1977). As DiCicco-Bloom & Crabtree (2006) suggest, there was flexibility in following the planned topics to explore community members' interests, knowledge and themes as they emerged during the discussions. For example, tobacco growing was not initially part of the planned topics, however communities drifted into talking about it during the discussions. Focus group discussions revealed community level perceptions of the impacts of LSLAs in Nansanga, beyond individual household experiences of the phenomenon (Morgan, 2008). In this way, focus group discussions supported the understanding of the collective but diverse and divergent perceptions and opinions about the impacts of LSLAs beyond the perceptions of individuals (Chandra, 2010). Thus, focus group discussions helped to check expert opinions from key informants (Morgan, 2008).

Through the snowball sampling technique, the *Sulutanis* and *Chilolos* supported the identification of key informants. For an explorative and qualitative study like this, Faugier & Sargeant (1997) suggest that snowball sampling offers practical advantages for gathering data on a difficult-to-observe phenomenon like Nansanga farm block in limbo of development. The key selection criteria were their involvement in activities during the demarcation of parcels, community respect that they command as this benchmarked credibility of what they would say, and how long they have lived in the selected community areas. These fitted within the research criteria (Atkinson & Flint, 2004) as detailed in Table 2.1. Within the chiefdom, the mix of both focus group discussions and key informant interviews enabled 'greater depth from the latter and greater breadth from the former (Morgan, 2008 p134).' Outside the farm

block, by the same snowball sampling technique, key informant interviews were conducted with government and quasi government institutions, researchers, agri-business entities, civil society organisations and development practitioners. It is through snowball sampling that interviewees with expertise and first-hand information on the subject under study were efficiently identified and included in the study (Faugier & Sargeant, 1997; Kendall *et al.*, 2008).



A focus group discussion in Kabundi, Nansanga (Photo by M. Chiposa, March 2018).

To interview key informants outside Nansanga, the Ministry of Agriculture was first approached as the locator. During the interview, I was referred to two departments at the Ministry of Lands for additional information. The Ministry of Lands referred me to the Zambia Development Agency, then the Zambia Environmental Management Agency, then the Departments of Resettlement and Disaster Management at the Office of the Vice President. The process went on until data saturation was reached with stakeholders outside the chiefdom.

#### **2.4.2.2 Participatory resource mapping and transect walks**

Participatory resource mapping and transect walks served to identify and make resource maps to locate resources to which communities have and don't have access, and the relative distances to those resources. These include forests, dams, farms, villages, gaming areas, rivers, schools, health centres and main roads, among others that are linked to their livelihoods and wellbeing. As Chandra (2010) notes, information from participatory maps can lead to wealth or wellbeing ranking. Participatory resource mapping enabled an understanding of spatial distribution, control, responsibility and labour and use in both Mingomba and Kabundi, the two sampled communities.

The community members themselves drew the maps which revealed the community members' knowledge and understanding of community boundaries, developed infrastructure (trunk roads, dams, schools, health centres, and power station), rivers, forest areas, game reserve, fuel wood and medicinal plant extraction areas, sacred places such as Bwande. Senior Chief Muchinda who allowed for the land tenure conversion to establish Nansanga farm block has been buried at Bwande. Through interactive discussions, community members were able to establish the relative abundance of the forest-based livelihood sources from the year that land was demarcated to the time of the field work (more details are in chapter 7 dealing with coping mechanisms). The relative abundance or scarcity of resources such as specific tree species for fuelwood, traditional medicines, and tree species associated with mushrooms and caterpillars were indicated by a simple count of stones.

Participatory resource mapping and transect walks were guided by the *Chilolo* and *Sulutani* in Mingomba and Kabundi, respectively. They were supported by two other community members. The traditional authorities and the additional community members have the geographical knowledge of the area and community boundaries, and were able to offer an historical perspective to different socio-ecological features. Transect walks enabled the identification of household socio-economic assets, local practices, socio-ecological changes and emerging opportunities and problems. Thus, the participatory resource mapping and transect walks formed basis for geo-referencing features for Geographical Information System mapping which I carried out when I returned to Edinburgh.



Community resource mapping (Photo by A. Chilombo in Nansanga, January 2018).

#### 2.4.2.3 Participatory wealth ranking

One of the topical issues mooted in debates for and against LSLA concerns the poor and most vulnerable community members in areas

where LSLA deals take place. LSLAs come as an external force that (re)shapes the ways in which communities interact with their environment to positively or negatively impact livelihoods. Therefore, depending on the socio-economic status of a household, negative impacts of LSLAs (can) exacerbate livelihoods of households with low socio-economic status. In addition, LSLAs (can) shrink adaptive capacities of negatively affected households. Wealthier households are more likely to better cope with the corrosive impacts of LSLAs on socio-economic and ecological systems that support rural livelihoods. In this manner, the socio-economic status of communities can influence the response strategies of communities to LSLA.

Community wealth ranking was done to gain an understanding into the differential SEE impacts of Nansanga farm block on community members, and their asset portfolio for coping with the impacts. Community wealth ranking is a technique that has become a means of assessing relative socio-economic status in the context of applied research projects and development programs (Adams *et al.*, 1997) such as Nansanga farm block. This technique is useful in participatory research to identify and stratify community wealth and well-being according to community understanding of their own socio-economic environment (Chambers, 1994; Scoones, 1995). It is also useful in identifying locally important criteria for distinguishing households according to wealth, status and power. Based on those factors, households were stratified in sampled communities (Mearns *et al.*, 1992).

To carry out community wealth ranking in the field, the *Chilolo* and the *Sulutani*s (Senior Chief advisors and village heads, respectively)



supported the exercise. I explained to the *Chilolo* and *Sulutani* the reason for doing it in Nansanga. The *Chilolo* and *Sulutani* know all households, their heads, and have register books for households in their territories. The first stage was that *Chilolo* and *Sulutani* used the community register books to tick off households that could be sampled based on sampling criteria in **Table 2.1**. The second stage entailed the categorisation of sampled households into low wealth class, medium wealth class and high wealth class households. This categorisation was informed by the knowledge of the traditional authorities and three other community elders of households in both Mingomba and Kabundi. In this way, the process of ranking households was owned and shared by the people themselves in the community (Chambers, 1994b). The ‘selection committee’ was requested to discuss and together decided which household falls under which class. Based on this classification, the third stage involved the administration of household surveys to sampled households to determine the asset portfolios and their coping mechanisms to a farm block program in *limbo of development*. By way of data triangulation, the fourth stage involved a discussion with the wider community during focus group discussions to identify attributes or resource endowments that distinguish wealth classes.

Falling under the authority of one Senior Chief, Nansanga area is homogenous in terms of ethnic composition, population density, customary land allocation, and the area is a miombo woodland. In addition to these factors, households are generally within 5km along the main trunk roads, they go to the same schools and health facilities. Therefore, none of these factors introduced any differences into the wealth ranking exercise. This way of operationalizing community wealth

ranking has been widely used in local communities for development programs.

While at the global level countries are ranked as either developed, economies in transition or developing based on the gross domestic product, community wealth ranking is used in community development programs. To identify policy guidelines for external or public sector support for food security interventions in semi-arid zones of Kenya, Sutherland *et al.* (1999) used community wealth ranking. In a community-based health insurance program in Burkina Faso, Soares *et al.* (2010) used community wealth ranking to identify eligible community members to enrol into the benefit. In India, ActionAid has used community wealth ranking to identify the poorer with whom they have sought to work with (Chambers, 1994b).

The field application of community wealth ranking as one of the participatory rural appraisal methods is case-specific and context-sensitive where different factors influence communities' ability and level to participate in the process (Martin & Sherington, 1997). Besides this caveat which recognizes the case-specificity of community wealth ranking application, Chambers, (1994b) points to four dangers of the participatory rural appraisal methods in general. He indicates that participatory rural appraisal methods are 'vulnerable to discrediting by over-rapid promotion and adoption, followed by misuse, and by sticking on labels without substance (Chambers, 1994b p1441).' The second danger is rapidity which poses a risk of 'insensitivity to social context, and lack of commitment to compound errors.' The third danger consists in formalism that impedes innovation and creativity in the application of some of the participatory rural appraisal methods which are context-

sensitive. ‘Spontaneity is lost and spread slowed, stopped or reversed (Chambers, 1994b p1441).’ The last danger points to routinisation which overlooks or limits the use of the other options when applying the participatory rural appraisal methods.

The application of community wealth ranking also suffers the criticism that its data is too ‘subjective’ for any generalisable conclusions (Martin & Sherington, 1997). Despite these limitations of the method, community wealth ranking still holds promise in terms of revealing community level grounded socio-economic realities. By involving the local ‘selection committee,’ administration of household surveys and data triangulation through focus group discussions beyond individual household levels, this process offered a level of representation of the asset portfolio but also the coping strategies of households.

The number of focus group discussions, key informant interviews, and number of households in wealth ranking are summarised in **Table 2.2** below.

**3 - Table 2.2** Summary of interviews during the phases of fieldwork

Fieldwork	FGDs		KII			WRHs	
	Kab	Ming	Kab	Ming	ON	Kab	Ming
Fieldwork 1	4	4	6	7	4	-	-
Fieldwork 2	4	4	6	6	11	25	25
Fieldwork 3	5	5	8	8	3	-	-
Total	13	13	20	21	18	25	25

Where FGDs = Focus group discussions; KII = Key informant interviews; WRHs = wealth ranking households; Kab = Kabundi; Ming = Mingomba; and ON = Outside Nansanga.

**Table 2.3** below presents the categories of respondents and how they have been coded in the chapters. However, the table does not include household surveys (25 in Mingomba and 25 in Kabundi as shown in Table 2.2).

#### 4 - Table 2.3 Summary of respondents

Interview and place	FGDs		Key informant interviews (KIIs)									Description
	Ming	Kab	CSO	GRZ	QGRZ	DP	Inv	Ming	Kab	Mine foremen	Tobacco growers	
Mingomba	4	4					1	21			10	Respondent <sup>com</sup> , <i>inv,lt,tf</i>
Kabundi									20	4	7	Respondent <sup>com</sup> , <i>mm,tf</i>
Kabwe				1								Respondent <sup>grz</sup>
Serenje				1								Respondent <sup>grz</sup>
Lusaka			4	5	2	2	2					Respondent <sup>grz</sup> , <i>qgrz, cso, inv, dp &amp; rch</i>
Total	13	13	4	7	2	2	3	21	20	4	17	

Where superscripted FGDs is focus group discussions; CSO is civil society organisations; GRZ is government officials, QGRZ is officials from quasi government institutions; DP is development partners; Inv is investors; Com is community; Ming is Mingomba; and Kab is Kabundi.

The respondents have been anonymised. In this regard, the coding starts with the identity code, the number, the place of the interview and the date. For example, an interview in March 2018 with number 4 key informant in Kabundi, will be written as follows: K-KII # 4, Nansanga, March 2018. **Table 2.3** details the description of respondents.

## 5 - Table 2.4 Description of respondents

Respondent category	Description	Identity code
Respondent <sup>com</sup>	Community members in Mingomba and Kabundi community areas fulfilling sampling criteria in Table 2.1 - in/direct benefit from infrastructure development, threats of evictions, land dispossession.	M-KII ( <i>Mingombo KII</i> ) M-FGD ( <i>Mingomba FGD</i> ) K-KII ( <i>Kabundi KII</i> ) K-FGD ( <i>Kabundi FGD</i> )
Respondent <sup>te</sup>	This represents key informants working for the tobacco leaf company, Tombwe Processing Limited.	LT-KII
Respondent <sup>tr</sup>	This category specifically refers to key informants who are tobacco growers in Nansanga.	TF-KII
Respondent <sup>mm</sup>	This category refers to key informants working for the manganese open pit mines in Nansanga.	Mm-KII
Respondent <sup>grz</sup>	This category refers to government officials working in government departments that were part of the multi-sectoral sub-committee to establish the farm block program, including negotiating with the Senior Chief Muchinda in Nansanga. They also participated in land demarcations.	G-KII
Respondent <sup>cs0</sup>	This category refers to civil society organisations involved in land policy formulation, and work with communities in rural areas that are on customary land.	C-KII
Respondent <sup>qgrz</sup>	This category refers to respondents involved in promoting investments in Zambia, and or in ensuring the compliance of the implementation of LSLA deals in the country.	Qg-KII
Respondent <sup>dp</sup>	This category refers to development partners that work with and support the Zambian government through technical assistance and financial resources in form of grants or loans to implement development projects and policy formulation exercises.	Dp-KII
Respondent <sup>inv</sup>	This category refers to respondents that have invested in Nansanga and outside Nansanga through purchase of what was previously held customary land.	I-KII
Respondent <sup>rch</sup>	This category refers to researchers whose research areas include rural	Rch-KII

Respondent category	Description	Identity code
	development, agriculture and policy development.	

The information above is summarised in Table 2.4 below. In the empirical chapters, this table will be repeated in the methods section of each of the chapters for easy reading.

**6 - Table 2.5** Summary of categories of respondents

No.	Identity code	Respondent
1.	Mm-KII	Key informant mining company foreman
2.	TF-KII	Key informant tobacco farmer
3.	LT-KII	Key informant tobacco leaf company employee
4.	M-FGD	Focus group interviews in Mingomba
5.	M-KII	Key informant interview in Mingomba
6.	K-FGD	Focus group interview in Kabundi
7.	K-KII	Key informant interview in Kabundi
8.	C-KII	Civil society key informant interview in Lusaka
9.	G-KII	Government worker key informant interview in Lusaka
10.	Qg-KII	Quasi government worker key informant interview in Lusaka
11.	Dp-KII	Development practitioner key informant interview in Lusaka
12.	I-KII	Farmer developing their farm in Nansanga as an investor

**2.4.2.4 Seasonal calendar**

The seasonal calendar enabled an understanding of the distribution of the communities' access to resources during the three seasons in Zambia in the area: wet rainy season, cold season and hot dry season. It also allowed for an indication of the harvesting patterns, and which resources are solely harvested for consumption and those harvested for income generation. The average time analysis during the three seasons complemented the data in the seasonal calendar by indicating relative amount of time on socio-economic activities, revealing some degree of variations relative to prior and after the development of Nansanga.

The life of community members in Nansanga revolves around the use of land. Among the Lala people, a year has 13 months. The months have specific names that reflect the meanings, seasonal activities of rural communities and natural weather patterns, all of which are linked to their interaction with land and forests. For example, April is called *Shinde*. *Shinde* signifies 'abundance and left over.' It is the month of plenty during which rural communities can afford to eat and have left-overs in the pots that can be thrown away the following morning. Similarly, July is referred to as *Akapepo kakalamba*. *Akapepo kakalamba* refers to the time of the year when there is strong wind. The seasonal calendar was done during household surveys and focus group discussions. It showed the patterns of collection of forest products that constitute an important portion of the means of survival of community members.

The calendar revealed four patterns of collection of forest products: opportunistic collection; frequent collection; collection out of necessity; and seasonal collection (see **Chapter 7**). The calendar revealed how socio-economic activities have evolved, and what other livelihoods strategies have emerged following the conversion of land tenure that has reshaped people's access to some livelihood assets. As Chandra (2010) notes, the seasonal calendar offered an opportunity to gather additional information from community members about their livelihoods, needs, strengths, and emerging opportunities from the Nansanga farm block in *limbo of development* in a way that ensured collaborative data generation and learning.

#### **2.4.2.5 Estimation of woodfuel consumption in tobacco production**

The study was undertaken at the time when farmers were curing tobacco, which presented an opportunity to estimate the consumption of woodfuel. Tobacco producers are organised in cooperatives through which they receive material support and technical training from Tombwe Processing Limited, a leaf tobacco company. The adopted production model is an out-grower scheme.

To estimate woodfuel consumption in tobacco production, tobacco farmers were interviewed. With the support of the *Chilolo* and *Sulutani*, tobacco farmers were identified through snowballing sampling technique. Farmers were asked questions related to their production methods, scale of production, number of years that they have been producing and why they produce tobacco. They were asked about challenges and level of fuelwood consumption. A questionnaire was used. The GPS coordinates were taken at the middle of each tobacco farm and the household. Tobacco production is labour intensive, and therefore farms are close to houses. The distance between the farm and house of the producer gives an indication of the level of land clearing that has already taken place, but also the level of labour involved in bringing harvested leaves to the apatams for sorting before taking them to the barns for curing. From the barns, harvested leaves are brought back to the apatams for another sorting before they are made into bales. The further away the farm is, the more likely the case is that the farmer has been producing for more than one or two growing seasons. This is because they start closer to the houses and then expand outward from the house in subsequent years. Tobacco is not grown on the same plot



one or two years in a row. In Nansanga, for example, the rotation cycle is three to four years.

To estimate fuel consumption, the weighing method was used, however there are other different approaches. These include household recall surveys (Démurger & Fournier, 2011; Fox, 1984; Khuman *et al.*, 2011; Shyamsundar & Bandyopadhyay, 2004), and estimates based on bundles and truckloads (Marsinko *et al.*, 1984). Other estimates use economic models (Halvorsen, 2017). Firewood collected during land preparation was weighed separately from the freshly cut one. The average was then calculated and reported. The practice is that fuelwood is heaped in bundles called *ifikoto* (singular *icikoto*) of 2m x 1.5m x 1m.



*Icikoto* for transportation to the barn for curing tobacco (1); weighing a log (2); Tobacco leaves in the family apatam (3); and 3 barns behind the main house (4). (Photos by A. Chilombo in Nansanga and M. Chiposa (weighing the log), March 2018)

Using an analog hanging scale, individual logs were weighed in a bundle then multiplied by the total number of bundles used by the farmer to estimate their fuelwood consumption for curing tobacco. Weighing of fuelwood to estimate its consumption has widely been used (Brouwer & Falcão, 2004; FAO & UNHCR, 2017; Fox, 1984). Fox (1984) reports that it is the most accurate. The weighing method proved convenient and easier for irregularly shaped logs.

#### **2.4.2.6 'Evening fire' discussions and researcher observations**

Culturally, people gather around fire places in the *apatam* of the parents in Nansanga. They also take their meals together though women eat separately from men. After meals they sit around a fireplace to talk about the day, events in the community, plans for the next day or any other matters that are of interest to the family. These family evening gatherings can be big or small. Families with more female adult daughters tend to have bigger evening gatherings than those with male adult sons. Female adult daughters bring their husbands to their parents and live together as a small village. Male adult sons leave their parents to join their wives' families. If the adult daughters have their own children, they all join in the 'evening fires' in their grandparents' *apatam*. 'Evening fires' in *apatams* are places of knowledge exchange, story-telling, learning and socialisation for the young ones. People chat very casually as they roast and eat maize, groundnut, cassava or pumpkins as an evening snack after the main evening meal.

Additionally, 'evening fire' discussions were used to ask more detailed questions about issues that were not clear during day

interviews. Evening fire discussions were informal, informative and allowed for exploration of the socio-cultural fabrics, including information about the socio-cultural 'secrets' of life in communities, such as witchcraft and traditional medicines for non-publicly discussed ailments. The gatherings offered an opportunity to engage ethnographically with communities at that micro-level to understand socio-cultural and economic dynamics (Whitfield, 2014). More detailed revelations about non-publicly discussed topics such as love-portions and the tree species used were also done at evening fire discussions. I always went with my field notebook and pen to take down notes regarding different topics.



An 'evening fire' discussion while roasting maize cobs, and a typical family arrangement of houses with the main apatam in front of parents' house. On the far right are three houses of adult daughters with their husbands (Photo by M. Chiposa (fire place) and A. Chilombo, March 2018).

In literature on participatory rural appraisal methods, I did not come across 'evening fires' have been used to collect data. For this case, they played a very important role in collecting more detailed data from community members in a relaxed manner. This method of data collection was built on trust where families were willing to spend evenings with us, share with us their food as we talked. In addition, they

offered an opportunity to listen to different perspectives from family members who were not part of the focus group discussions and key informant interviews during the day. Given that they were held at family level, they were a 'closed door' meeting opportunity to get detailed data about the socio-cultural values in Nansanga.

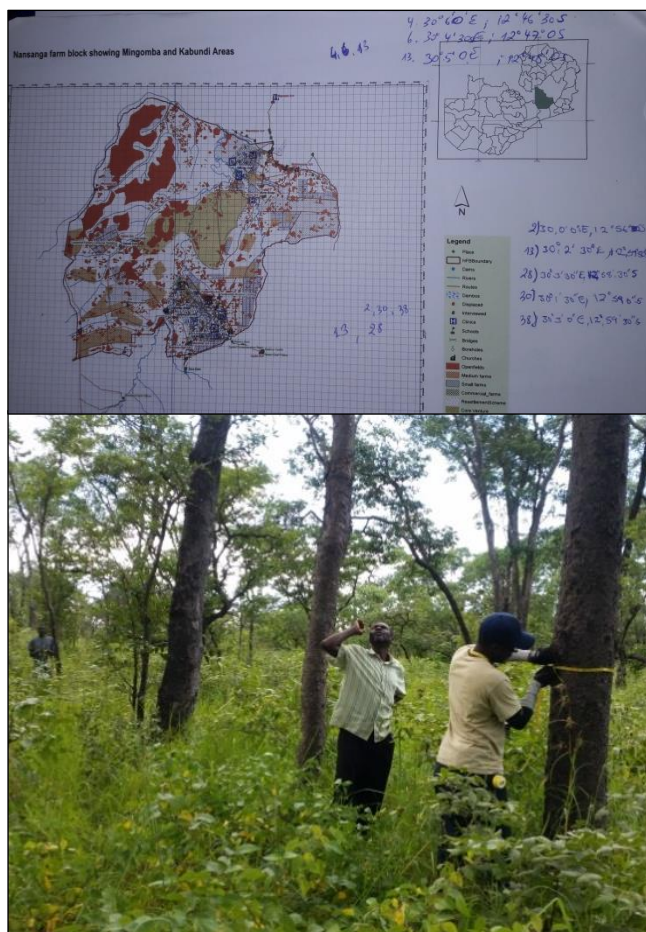
#### **2.4.2.7 Forestry survey**

Forest surveys were conducted in Mingomba and Kabundi areas of Nansanga farm block to understand tree species diversity, above ground biomass from which carbon stocks were estimated and soil fertility status. 44 x 0.25 ha randomly sampled plots were surveyed. The forest resource maps that were drawn through transect walks with the *Chilolos* and *Sulutanis*, and community key informants were imported into ArcMap 10.1 software and georeferenced. A graph paper was superimposed on the georeferenced map to divide it into squares of approximately 1cm x 1cm, representing approximating 1km x 1km on the ground. All the squares that fitted within the map at least by three-quarters were given numbers. These numbers were written on equally sized pieces of paper that were randomly drawn from a container. The map with numbers was imported into ArcMap 10.1, georeferenced to get the GPS coordinates of the randomly drawn squares. The GPS coordinates were then entered into the Garmin eTrex 20x to lead to the sampled plots. From the corner of each sampled plot, 0.25 ha circular plots were established (n=22 in each area).

In the established sampled plots, tree diameters were measured at 1.3m, that is, diameter at breast height, in accordance with standard forest survey practices (Chidumayo, 2002; Williams *et al.*, 2008; Kalaba

*et al.*, 2013b; Turpie *et al.*, 2015) so that the diameter together with the tree height could be used to estimate tree biomass (Gibbs *et al.*, 2007). A diameter tape was used to measure at least 0.05m diameter trees species. Stem diameters of trees forking below 1.3m were separately recorded as in (Chave *et al.*, 2005; Williams *et al.*, 2008; Kalaba *et al.*, 2013), and in case of injuries and other deformities from earlier cuttings from shifting cultivation, judgement was taken to measure where it was most appropriate (Jew *et al.*, 2016). The Vertex IV and transponders were used to estimate the heights of trees whose girths were measured at 1.3m. With the support of local botanists from the selected communities, with the traditional ecological knowledge of the area, local names of measured trees were recorded and then later translated as in Williams *et al.* (2008) and Kalaba *et al.* (2013).

Based on the information given by the traditional botanists, the sampled plots were estimated to be at 5, 15 and 25 years of abandonment from shifting cultivation. Four x 0.25 ha ( $n = 2 \times 55$  years in Kabundi and  $n = 2 \times 65$  years in Mingomba) were relatively undisturbed in that they had not been cultivated, however they had significant levels of fire disturbance and caterpillar harvesting in some cases. The estimates were based and linked to deaths or births of community members, elections of *Chilolos* and *Sulutanis*, harvests of caterpillars, and the coming of investors to Nansanga before the development of the farm block began.



Projected Nansanga farm block map and taking the diameter of a tree at breast height as one of the botanists identifies it (Photo by M.Chiposa, Nansanga farm block, March 2018).

At the centre of each sampled circular plot, soil was collected at the depth of 30cm, given the planting depth of food crops in Zambia. The soil samples were taken to soil chemistry laboratory at Mount Makuru research station in Lusaka to determine the following: Soil pH; soil organic carbon; Phosphorus; Potassium; Sodium; soil texture; and soil taxonomy. These were taken as good indicators of the status of soil fertility.

## 2.5 Content analysis of agriculture sector related policy and official documents

According to Vaismoradi *et al.* (2013 p400), content analysis (CA) is a 'systematic coding and categorizing approach used for exploring large amounts of textual information unobtrusively to determine trends and patterns of words used, their frequency, their relationships, and the structures and discourses of communication.' It is a systematic, objective and quantitative analysis of both the manifest and latent contents of communication (Kassarjian, 1977). CA therefore, afforded the possibility to measure the frequency and variety of key messages (Altheide, 1987) regarding the underpinning drivers of LSLAs in Zambia in policy and official documents related to LSLAs. It thus permitted an in-depth understanding of the foci of the agricultural policy landscape in Zambia that is reported in a rich literary style (Vaismoradi *et al.*, 2013).

The second level on which CA was used was to identify, analyse and report patterns within data (Vaismoradi *et al.*, 2013) from focus group discussions with communities in Nansanga and key informants within and outside the farm block. CA as an observational research method (Kolbe & Burnett, 1991), therefore enabled a systematic evaluation of the contents of policy and official documents and transcribed interviews. CA on transcribed interviews from community members led to an improved understanding of LSLA from the perspective of those experiencing it (Vaismoradi *et al.*, 2013).

The process of carrying out CA involved three broad stages: data preparation; data organisation and reporting of the analysing process and of the results (Elo & Kyngäs, 2008). In between these stages were the identification of emerging themes, grouping and coding

of identified themes based on their relevance to the research objectives of this study (Elo & Kyngäs, 2008). This allowed for the measurement of the frequency of emerging themes of interest to the study (Vaismoradi *et al.* 2013). This process was iterative to ensure representation of the key elements of the current study. This was important for benchmarking reproducibility and reliability in CA (Krippendorff, 2004) as one conducts an exploratory study in an area where not much is known but common issues are being mentioned (Vaismoradi *et al.*, 2013). The number of themes was informed by saturation of emerging themes (Barker *et al.*, 2005; Polit & Beck, 2010).

## **2.6 Positionality and reflexivity**

In this section, I reflect on my positionality and reflexivity as I engaged with community members and other respondents during the fieldwork.

Zambia, where the fieldwork was carried out, has 72 recognised ethnic groups and 7 major languages. The country is thus, regionalised according to ethnic groups. Knowing where somebody comes from leads to knowing the language they speak. However, some of the languages are quite similar. People who speak similar language also share similar culture. Zambia is urbanised, and therefore, the picture in urban centres is quite different. As people mingle in urban areas, a different culture emerges that embraces different cultures.

I am a Zambian national from the north of the country. The local people, the Lalas in the case study area share a similar culture and language with the people in the north, the Bembas. They are socio-culturally similar, however not identical. Carrying out this research therefore, calls for a recognition of my own positionality and reflexivity to



help think through the ways in which various identities in the study area played a role in influencing and shaping research encounters, processes and outcomes (Hopkins, 2007). As a national, Zambia is home. However, I am not familiar with the cultural and traditional environment of the Lala people in central Zambia.

I was born in a rural area and did part of my primary school in a rural setting. I went to an urban area for my high school. After high school, I went abroad to study and work. I have studied in Africa and Europe, and I have lived in the USA. Reflecting on these experiences, I am 'a mixed bag' of cultural experiences as well as different cultural environments that have underpinned my processes of socialisation. Being in Nansanga for fieldwork reminded me of my childhood because I experienced the similar socio-cultural environment. However, I later went to an urban environment, and I now have a formal academic and professional background. As Chacko (2004) noted, I am an insider but also an outsider, and my language fluency does not translate into my cultural fluency of the area. This reflection led to two things:

1. It gave me an opportunity to understand the socio-economic and cultural environment of the Lala people better; and
2. It was an opportunity for me to also understand how they viewed me because growing in a similar socio-economic and cultural environment, we had a way of looking at urbanites.

Being in the field with community members and reflecting on my own positionality, differences were obvious from the fact that I grew up in an urban environment as a teenager and as an adult. To reflect the level of my own positionality and reflexivity, this research work was not only written *about* the Lala people's experience of large scale land

acquisition, but the participatory approaches ensured writing *with* them their own experience of the phenomenon. The rationale was that this created a platform for research outcomes that were fostered through negotiated spaces and practices of reflexivity that are critical about issues of positionality and power relations at community level (Sultana, 2007). I was clear to them about how limited my knowledge was about tree species, medicinal plants, mushrooms, cultural and traditional practices, clans, how to identify animal footprints, how to tell weather patterns by looking at the clouds and many others. These things were obvious even to young people in Nansanga, and not to me. My knowledge on these things was limited. Our host in Mingomba, Mr. Simon Mulenga expressed his disappointment as follows:

‘...what then do you know? You say your parents are from northern Zambia, yet you can hardly recognise 10 trees from there (pointing with his fingers). So, what do you then know?...alright, my son, every evening when you come to the fire place, come with a book and pencil. Ask questions, and write answers.’

My acknowledgement of my ignorance I believe rendered me teachable to them. I was perceived that I was open to learning about tradition and ways of life that I should have known about. This helped to reverse the stereotype associated with living in urban areas, and in my case, studying in Europe. They had knowledge to offer, and since knowledge is power, they were in a comfort zone to interact with me as a researcher but also as one of their own, their son. This bridged the distinction between the ‘them, as objective communities of research work’ and the ‘I, a researcher, urbanite with formal education.’ As I received lessons about the culture and traditions, I asked questions

related to the research project. As I asked questions, they reflected upon their experience of land tenure conversion, and SEE impacts. In this way, community members and I as principal researcher, together with research assistants, interacted as co-producers of knowledge and learners. Community members were therefore, accorded a deserved and elevated profile in this research work in which they have participated.

## **2.7 Ethical considerations**

As per academic research standards of the University of Edinburgh, prior to going to the first phase of data collection, I applied for clearance from the Ethics and Integrity Committee of the University. I sought clearance from the government of Zambia through the Office of the Vice President to be able to interview any of the government officials. I also got an additional level of clearance from the Director at the Ministry of Agriculture in Zambia to carry out research in Nansanga. I presented this letter to the District Agricultural Officer in Serenje (the district administrative town where Nansanga has been established) before going to Nansanga farm block. With this line of clearances from the central government officers to the district level, the District Agricultural Officer delegated one staff member to take me and my research assistants to the farm block. The delegated officer, Mr. Chembo Nelson, was part of the government team to negotiate with the Senior Chief Muchinda to convert customary land to leasehold, including the actual demarcation of parcels of land.

Being with Mr. Chembo on our first phase fieldwork proved useful in gaining acceptance and trust from the community. He was familiar with the traditional and cultural practices, and what was expected of us as strangers in Nansanga. The first people we had to meet were traditional leaders to pay a courtesy call to them with small gifts. Traditionally, nobody greets traditional leaders without any gift. This takes the form of money or foods, and sometimes both. We met Senior Chief Muchinda, the successor to the one that the government



Mr. Chembo introducing us to the Senior Chief Muchinda, standing between his two bodyguards (Photo Y.Mulumbwa in Nansanga, November 2016).

negotiated with to convert part of customary land to establish Nansanga farm block. Every successor to the throne assumes the name Muchinda.

After meeting the Senior Chief Muchinda, we went to meet the *Chilolos* and *Sulutanis* in Mingomba and Kabundi communities where the research was carried out. The *Chilolos* and *Sulutanis* took over the introduction to community members. Going by the traditional practices in Nansanga did not only help us gain support, trust and acceptance, but it

was also an important ethical consideration. Not doing so would have been an act of trespassing in the area, particularly because we were strangers. That was how the research team bought social license and 'de-estrangement' that led to the successful interactions with community members.

As a researcher with a different socio-economic situation and professional trajectory from that of community members in Nansanga, I was aware of how I could be perceived. I lived my childhood in a similar socio-economic environment, and still remembered how, as a society, we perceived urbanites as privileged and knowledgeable. When as an urbanite, one does not conform to cultural and traditional behaviours, it creates artificial power imbalances in favour of the urbanite. The urbanite is quickly perceived snobbish and ill-mannered. As a result, walls rather than bridges are constructed that do not facilitate meaningful interactions with community members. To achieve the objectives of this research work, I needed to, and I had to learn from community members, and together co-generate knowledge about the phenomenon that they were experiencing. This required consideration of their contribution, making myself teachable and respectfully pay attention to their explanations, understanding and interpretation of Nansanga farm block. This earned me the favour of being called a son by Mr. Simon Mulenga, our host in Mingomba community.

Trust was built, and we became part of the community who could be reached out to for help and appreciated. For example, during the third phase of fieldwork, the daughter to the *Chilolo* fell sick in the night. He came and knocked on the door to ask me to drive her to Mapepala clinic, about 20km away from Mingomba. Two days later the wife of the *Chilolo* prepared food with local chicken in appreciation for the gesture.

Culturally, being offered local chicken is a demonstration of honour and respect. On arrival in Mingomba, we took gifts to the *Chilolo's* household, and days later, we were honoured with a meal of local chicken. Mr. Mulenga explained that we were welcome in the community and we fitted well in the community. That was why the *Chilolo* felt free to ask for help from us, and in appreciation, the family honoured us with a meal of local chicken which is only consumed at celebrations such as Christmas or weddings.

The established relationship with community members both in Mingomba and Kabundi was based on mutual respect, trust and acceptance. These elements helped to clarify the role that I played as a researcher. Having engaged with community members, and getting their support at every level of this research work helped to co-produce knowledge. This knowledge reflects and is informed by the perceptions and life experiences of SEE impacts of community members in Nansanga farm block. I believe this research work with community members was an opportunity for them to reflect more on the SEE impacts of Nansanga farm block. If 'an unexamined life is not worth living,' as said by Socrates the Philosopher, then this research hopefully contributes to helping community members make more sense of their experiences of Nansanga and its SEE impacts. As an ethical responsibility for the findings of this research work, I have shared preliminary impressions with Officers at the Ministry of Agriculture, the primary responsible ministry of the farm block program. I have also given public talks at the University of Lusaka and the University of Zambia. Within the context in which the research was done, I hope the findings are meaningful and worth the commitment and efforts of

community members, research assistants, supervisors and all other people who made the fieldwork possible through different contributions.

## 2.8 Chapter 2 References

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### **3. Understanding the Biophysical Characteristics and Socio-cultural uses of Land Targeted for Large Scale Land Acquisitions: Case of Nansanga Farm Block in Zambia**

Andrew Chilombo and Casey M. Ryan  
School of GeoSciences, University of Edinburgh

**Abstract:** Efforts to understand impacts of large scale land acquisitions (LSLAs) are biased towards socio-economic impacts. Little attention is paid to environmental impacts, in part because of lack of baseline data to enable longitudinal studies, and the assumption that feeds the narrative that lands targeted for LSLAs are marginal. Taking Nansanga farm block in wet miombo woodland, a failed Zambian government-spearheaded agricultural program, Chapter 3 aims at quantitatively establishing environmental characteristics and socio-cultural uses of the miombo woodland where an LSLA deal has been established. This characterisation informs a commentary on Nansanga's marginality. To that end, the chapter looks at the context-specific environmental characteristics, focusing on structural and floristic composition, aboveground carbon storage (AGC), soil nutrient fertility status, and the socio-cultural uses of Nansanga farm block miombo woodland. Forest surveys were conducted on 44 x 0.25 ha randomly sampled plots in two out of three community areas that benefited from infrastructure development during the establishment of Nansanga. Soil samples were collected and analysed for pH, Phosphorus (P), Potassium (K), Sodium (Na), soil organic carbon, texture and taxonomy. Overall, the results show that Nansanga has been established on a structurally complex, diverse ecosystem, and on soils with a fertility status that is characteristic of

miombo woodlands. The AGC was  $15.7 \pm 5.3 \text{ tC ha}^{-1}$ , ranging from 1.6 to  $78.6 \text{ tC ha}^{-1}$ . Assessed in terms of biomass accumulation, site woody productivity was  $0.79 \text{ tC ha}^{-1}$ . Tree stem density was  $554 \pm 27.2 \text{ (sem) ha}^{-1}$ ; and basal area ranged between 0.8 and  $31 \text{ m}^2 \text{ ha}^{-1}$ . The Importance Value Index (IVI) shows the dominance of *Julbernardia paniculata*, *Isobertia angolensis*, *Markhamia obtusifolia*, *Brachystegia longifolia* and *Amblygonocarpus andongensis*, including fire tolerant *Diplorhynchus condylocarpon*, *Burkea africana*, *Pterocarpus angolensis*, and the light demanding *Albizia antunesiana*, and *Uapaca kirkiana*. The mean Shannon diversity index, 2.95, indicates high diversity of trees. The soils are medium to strongly acidic, and below soil fertility thresholds for food crop production. Taxonomically, 82% of the soil samples were Acrisols, while 16% and 2% were Ferrosols and Leptosols, respectively. Textually, 30% of the soil samples were sandy clay loam, 25% silty clay loam, 20% silty clay, 18% loamy sand, and 7% gravel. Our findings contribute to challenging the narrative that LSLAs take place on marginal lands, and in the absence of baseline data, our findings contribute to developing an ecological perspective and boundary that marks a research path for understanding environmental impacts later in Nansanga.

**Author contributions:** AC designed, carried out the study, and wrote the manuscript. CMR suggested improvements. An edited version of this chapter is intended for submission to *Environmental Research Letters*.

### 3.1 Introduction

The vegetation cover of southern Africa is dominated by Miombo woodlands (Ryan *et al.*, 2016) that extend over an estimated 2.7 million

km<sup>2</sup> in Angola, Zimbabwe, Zambia, Mozambique, Malawi and Tanzania and most of the southern part of the Democratic Republic of Congo (Syampungani *et al.*, 2009). The miombo woodlands are divided into dry and wet woodlands with average annual rainfall of less than 1 000 mm and more than 1 000 mm, respectively (Frost, 1996), and characterised by tree species from three genera in the legume subfamily *Caesalpinioideae*; *Brachystegia*, *Julbernardia* and *Isoberlinia* (Frost, 1996).

With about 8 500 species of higher plants, 54% of which are endemic, miombo woodlands are one of the world's high biodiversity hotspots (Kapinga *et al.*, 2018). According to Frost (1996), with 17 species, Zambia has the highest level of tree species diversity, and is the centre of endemism for *Brachystegia*. Miombo woodlands sequester CO<sub>2</sub>, and therefore they are an important carbon sink (see studies on biomass and CO<sub>2</sub> estimations in the miombo: Kalaba *et al.*, 2013; Kuyah *et al.*, 2014; Shirima *et al.*, 2015; Ryan *et al.*, 2011 in Zambia, Malawi, Tanzania and Mozambique, respectively). The soil fertility status of miombo woodlands is generally poor due to leaching attributed to heavy rainfall patterns (Chidumayo, 1987).

Agriculture, population growth and fuelwood are major drivers of deforestation in miombo woodlands (Jew *et al.*, 2016) though the exact extent of deforestation is unknown owing to paucity of data (Frost, 1996). In the wake of large scale land acquisitions (LSLAs) in southern Africa for food security, biofuels, financial investments, eco-tourism, among others (Robertson & Pinstруп-Andersen, 2010; German *et al.*, 2011), concerns about deforestation of miombo woodlands cannot be ignored.

LSLA assessments show a 'considerable lack of information about environmental impacts and even more so about systemic effects on

socio-ecological systems (Messerli *et al.*, 2013 p.529).’ In a multi-country study in Africa, Cotula *et al.* (2014), revealed that assessments of LSLA outcomes are incomplete on environmental aspects, constraining proposals for ‘viable and durable alternatives (Edelman *et al.*, 2013 p1529)’ of LSLA models. Cotula *et al.* (2014) report that there are no reliable baselines for many LSLA deals to enable assessments of changes in socio-economic and environmental indicators over time. In meta-analyses of LSLAs (e.g Oberlack *et al.*, 2016; Schoneveld, 2017), and case study assessment reports (e.g Shi, 2008 in Laos PDR; Schoneveld, 2011 in Ghana; Dwyer, 2014 in Laos PDR; Nolte, 2014 in Zambia; Boamah, 2015 in Ghana), researchers tend to be more descriptive and qualitative than quantitative about environmental parameters. Given the evolution of LSLA deals (punctuated with scaling down, cancellations, abandonments or transformations of business investment models), the incipience of LSLAs in general (German *et al.*, 2011; Nolte, 2014), and lack of (reliable) baselines (Cotula *et al.*, 2014), environmental impacts are difficult to assess. Longitudinal studies to assess short to medium term outcomes are also difficult to do, important as they are (German *et al.*, 2013).

Limited attention to environmental aspects of LSLA deals is also attributed to the ‘marginal lands’ narrative, a term without a clear meaning (Nalepa & Bauer, 2012). According to McCarthy *et al.* (2012), land is marginal if a cost-benefit analysis yields a negative result, or if the land is deemed to be of poor quality, is remote, is arid, is infertile or lacks infrastructure. Dauber *et al.*, (2012 p10), on the other hand, define marginal land as ‘idle, underutilized, barren, inaccessible, degraded or abandoned lands, lands occupied by politically and economically marginalized populations, or land with characteristics that make a

particular use unsustainable or inappropriate.’ Gironde *et al.* (2014) indicate that land is marginal if it is unused yet suitable for agriculture. Particularly related to production of biofuels, marginal lands refer to degraded lands that are not suitable for other food crops (McCarthy *et al.*, 2012). According to Deininger *et al.* (2011), marginal lands refer to lands that are uncultivated, non-forested that would be ecologically suitable for rain-fed cultivation in areas with less than 25 persons/km<sup>2</sup>. Nalepa & Bauer (2012) indicate that in the context of LSLAs, marginal lands generally refer to lands that are arable, yet degraded or difficult to farm, based on biophysical characteristics such as soil profile, temperature, rainfall and topography (slope). Within these different interpretations of what marginal land is, the understandings highlight socio-economic but also biophysical and ecological dimensions. These dimensions are often used by stakeholders, for example, the state to shape land deals as they facilitate investments (Borras *et al.*, 2013).

Identification of so called marginal lands for LSLA deals is based on assumptions and perceptions rather than evidence (German *et al.*, 2013). Even the use of remote sensing techniques to identify marginal land is marred with difficulties to capture local level socio-ecological systems (see Nalepa & Bauer, 2012). Thus, paucity of data on environmental aspects, and non-evidential marginalisation of land for LSLA deals remain critical gaps in LSLA research that this chapter seeks to address.

This chapter has two aims. First, we identify the context-specific biophysical characteristics of Nansanga farm block in the central Zambia miombo woodland that has been targeted for an LSLA deal. This helps to better understand what land deals in miombo woodlands compete for in terms of both local and global environmental goods and services

(Messerli *et al.*, 2014). This contributes to raising the profile of environmental concerns in LSLA assessments that are usually limited to socio-economic costs and benefits (Oya, 2013; Cotula *et al.*, 2014) in miombo woodlands. Second, we investigate the socio-cultural uses of miombo woodland in Nansanga. Based on the biophysical characteristics and the socio-cultural uses, we make an informed commentary on the land marginality of Nansanga farm block. Therefore, the commentary on the marginality is based on ecological indicators of environmental parameters idiosyncratic to miombo woodlands as well as socio-cultural uses of the woodland in Nansanga. That is, Nansanga miombo woodland is marginal if its floristic and structural composition shows a low diversity system that does not compare with other wetter miombo woodlands. It is also marginal if it is idle, that is, if there are no indications of socio-cultural uses of miombo woodland in Nansanga by communities. Therefore, in this chapter, we define land to be marginal if it is low in its floristic and structural composition, and is unused by communities for their livelihoods. Livelihoods refer to the ‘capabilities, assets (including both material and social resources) and activities required for a means of living (Scoones, 1998 p5).’

To achieve the aims of this chapter, we focus on i) the current status of tree species floristic composition and biodiversity, aboveground carbon (AGC), soil fertility status of Nansanga; and ii) the socio-cultural uses of Nansanga miombo woodland regarding provisioning ecosystem services and non-timber forest products (NTFPs). By socio-cultural uses, we mean aspects of the Nansanga forestland that are of social, economic and cultural values to the local communities. With this focus, this chapter contributes to the current LSLA research agenda that has turned the ‘focus from studies purely assessing the area affected by such land deals

toward quantification of the potential environmental and human impacts (Davis *et al.*, 2014 p181).’ Additionally, in the absence of baselines that make it difficult to assess socio-economic and environmental impacts, the chapter contributes to developing a socio-cultural and a miombo woodland ecological perspective of Nansanga to support research efforts to understand environmental impacts later.

The chapter is structured as follows: we first present the research design and methods in Section 3.2 and statistical approach in Section 3.3. We present results on vegetation structure, woody productivity and AGC storage, floristic composition and tree diversity, soil properties and provisioning services in Section 3.4. We then discuss the results in Section 3.5 before concluding on the ecology of Nansanga and socio-cultural uses in Section 3.6. We used a mix of quantitative and qualitative data through the use of ecological survey and participatory rural appraisal methods, respectively. In the absence of baselines, the chapter contributes to methodologically advance LSLA research, particularly as understanding environmental impacts at a local scale where knowledge gap is considerable (Messerli *et al.*, 2013) is hitherto riddled with methodological challenges and chronic paucity of data on environmental aspects.

## **3.2 Research design and methods**

### **3.2.1 Study area**

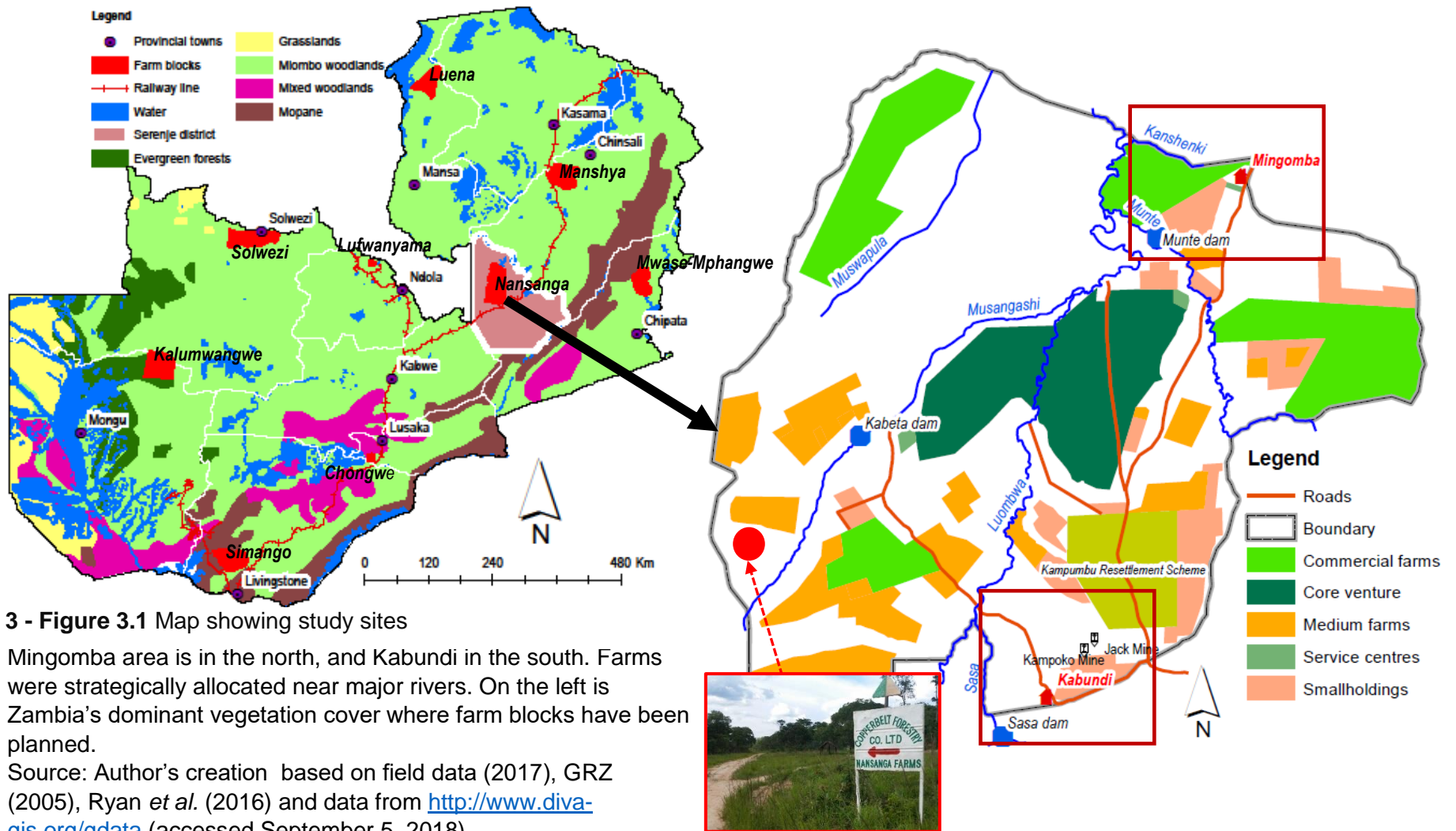
This study was carried out in Mingomba and Kabundi communities of Nansanga farm block on ~ 155 000 ha of previously held customary land (Nansanga henceforth) (12° 47'S to 13° 0'S and 30° 5'E to 30° 4'E,



elevation between 1 210.4m and 1 347.4m above sea level, and annual rainfall of 1 000 – 1 200 mm). Communities were selected based on the level of developed infrastructure during the farm block development, population concentration and accessibility. The pieces of infrastructure in both Mingomba and Kabundi were finished in 2009 - 2010. Nansanga is inhabited by Lala people in the chiefdom of Senior Chief Muchinda. Until the 1990s, Lalas in the chiefdom practised shifting cultivation on customary land. Traditionally, the Lalas are an uxori-local society, and do not have typical clustered villages. Instead, they live in big families, mostly with many grandchildren.

Nansanga is part of the 2002 government of Zambia-led LSLA programs for commercial agriculture for food security, reducing rural-urban migration and general rural development (GRZ, 2005). Customary land was converted to leasehold. Communities are smallholders, cultivating maize, cassava, groundnuts, and beans on 0.1 – 2 ha of land. Out-grower tobacco production (Mingomba and Kabundi) and manganese open-pit mining (Kabundi only) have emerged in the farm block as the most important socio-economic activities. The Copperbelt Forestry Company has also a project to plant exotic tree species (**Figure 3.1**).

Mingomba is headed by one *Chilolo* (advisor to the Senior Chief). The community area is sub-divided into 16 subsections, each headed by a *Sulutani* (advisor to the *Chilolo*). The community area has ~650 scattered households, ~3 900 people (registered with the *Chilolo*), and is served by Mapepala clinic, ~ 20km away in another chiefdom and district. Funded by the Nansanga program are a trunk road, Munte dam (6 000 000m<sup>3</sup> capacity that has already collapsed), and a bridge on Munte river. There are households with threats of displacement between Bwande and



3 - Figure 3.1 Map showing study sites

Mingomba area is in the north, and Kabundi in the south. Farms were strategically allocated near major rivers. On the left is Zambia's dominant vegetation cover where farm blocks have been planned.

Source: Author's creation based on field data (2017), GRZ (2005), Ryan *et al.* (2016) and data from <http://www.diva-gis.org/gdata> (accessed September 5, 2018).

Munte rivers, and households that are still in what was designated as a service centre..

Headed also by a *Chilolo*, Kabundi community area is subdivided into 17 subsections. It has a population of ~465 households, ~2 790 people (registered with the *Chilolo*). The area is served with Kabundi clinic. There is a trunk road, a dam on Sasa river (10 000 000m<sup>3</sup> capacity and 5km irrigation canal that have both already collapsed), and Luombwa bridge. Contrary to the farm block plan, two manganese open pit mines were started, attracting urbanites and internationals to the area. Many community members work in these mines while others work for Silverlands, a commercial agricultural enterprise in the neighbouring Luombwa farm block. Kampumbu resettlement scheme is an enclave within the farm block that has socio-economic and cultural spill-overs to community members in Kabundi area.

### **3.2.2 Site selection and measurements**

#### **3.2.2.1 Estimation of tree species diversity and carbon stocks**

A forest survey was conducted in Mingomba and Kabundi community areas. 44 x 0.25 ha circular plots were randomly established in areas identified through transect walks with community key informants as areas of extraction of forest products. Tree diameters at breast height (dbh), at 1.3m above ground were measured, consistent with standard forest survey practices (Chidumayo, 2002; Williams *et al.*, 2008; Kalaba *et al.*, 2013; Turpie *et al.*, 2015) so that diameters and tree heights could be used to calculate tree biomass and estimate carbon stocks (Gibbs *et al.*, 2007). A diameter tape was used to measure  $\geq 0.05$ m diameter trees

species. Stem diameters of trees forking below 1.3m were recorded separately as in Chave *et al.* (2005); Williams *et al.* (2008); Kalaba *et al.* (2013), and in case of injuries and other deformities from earlier cuttings from shifting cultivation, judgement was taken to measure where it was most appropriate (Jew *et al.*, 2016). The Vertex ultra sound height measurers with transponders were used to estimate tree heights. With the support of local botanists from the community who have the traditional ecological knowledge of the area, local names of measured trees were recorded and then later translated (Williams *et al.*, 2008; Kalaba *et al.*, 2013).

### 3.2.2.2 Soil properties

Soil samples from all the 44 plots were collected and analysed for Phosphorus (P), Potassium (K), Sodium (Na), pH, soil organic carbon (SOC), texture and taxonomy. The soil samples were collected from the uniform organic matter depth, ~ 0.3m deep. The samples were taken to Mt Makuru soil chemistry laboratory, Lusaka in Zambia for analysis. Soil colour was described using the Munsell's soil colour chart from the Revised Standard Soil Colour Charts, 2007. Soil taxonomy was based on the FAO classification system, and soil pH was done in 0.01 Calcium Chloride, CaCl<sub>2</sub>. The Bray 1 method was used to determine available P K and Na, extracted in Ammonium Acetate, C<sub>2</sub>H<sub>7</sub>NO<sub>2</sub> buffered at pH 7. SOC was determined using the Walkely Black method. Similar methods were also used by Strømgaard (1992) for miombo soils in northern Zambia.

### 3.2.2.3 The socio-culturality of Nansanga miombo woodland

To understand the socio-cultural community uses of Nansanga miombo woodland, focus group discussions (n=5 in each community of about 8 – 9 people per group and mixed both men and women), key informant interviews (n=8 in each community in addition to walking interviews with traditional botanists), participatory resource mapping and transect walks were done. Family ‘evening fire’ meetings were also used to collect more data about the socio-cultural uses of Nansanga miombo woodland. In this chapter, focus group discussions have been coded as M-FGD and K-FGD for Mingomba and Kabundi, respectively.

## 3.3 Statistical approach

### 3.3.1 Biodiversity analysis

Defined as ‘the size of the intersection divided by the size of the union of the sample sets (Williams *et al.*, 2008 p148),’ the Jaccard similarity index ( $J$ ) was used to estimate the similarity in species composition similarity between Kabundi and Mingomba, using the following formula:

$$J(A, B) = \frac{|A \cap B|}{|A \cup B|}$$

where A represents species in community 1 (Mingomba), and B species in community two (Kabundi).

Williams *et al.* (2008) and Kalaba *et al.* (2013) have used  $J$  to determine the degree of similarity of species composition of different age classes and to estimate the species composition similarity between different age

classes, respectively. The basal area (BA), as cross-sectional area of the diameters of trees at 1.3m (Kuyah, 2014) was calculated using the following formula:

$$BA = \pi (dbh/200)^2 (m^2), \text{ where } \pi \text{ is } 3.142, \text{ dbh in cm.}$$

The Shannon index ( $H'$ ) was used to calculate for species diversity and relative proportion of each as in all the sampled plots (Dovie *et al.*, 2003; Williams *et al.*, 2008; Kalaba *et al.*, 2013; Shirima *et al.*, 2015), using the formula below:

$$H' = - \sum_{i=1}^S p_i \ln p_i$$

where  $p_i = n_i/N$ ,  $n_i$  is the number of individual trees for species  $i$ ,  $N$  is the total number of individuals, and  $S$  is the total number of species (Williams *et al.*, 2008; Kalaba *et al.*, 2013). The current study went beyond  $H'$  by establishing the diversity score of tree species in sampled plots by calculating for Equitability, using the formula below:

$$\text{Equitability} = \frac{H'}{H'_{max}}; H' = \ln S$$

where  $H'$  is the Shannon index,  $H'_{max}$  is the highest possible diversity score of a community and lies between 0 and 1. 0 indicates low evenness and high single-species dominance nears 1; equal abundance of all species or maximum evenness (Stirling & Wilsey, 2001).  $H'$  is equivalent to the natural log of the total sum of species in a given sample plot.

### 3.3.2 Estimation of aboveground biomass and site woody productivity

To estimate aboveground biomass from which carbon and site woody productivity were estimated, five allometric equations in **Table 3.1** below were used.

**7 - Table 3.1** Allometric equations

Reference	Equation(s)	Source country	Notes
Chidumayo (1997)	$B = 3.01dbh - 7.48$ (i) $B = 20.02dbh - 203.37$ (ii)	Zambia	For trees with girths <0.1 m For trees with girths >0.1 m
Stromgaard (1985)	$B = (dbh^{1.382}) * (H^{0.640})/2.76$	Zambia	Above ground biomass
Chave <i>et al.</i> , (2014)	$B = 0.0673$ * (wood gravity density * $dbh^2 * H$ ) <sup>0.976</sup>	pan-tropical model	Well performing model across forest types and bioclimatic conditions
Ryan <i>et al.</i> , (2011)	$B(\log) = 2.545 \log(dbh) - 3.018$	Mozambique	Developed from destructively sampled tree stem biomass
Mugasha <i>et al.</i> , (2013)	$B = 0.1027 * dbh^{2.4798}$	Tanzania	Above ground biomass

Where B is biomass; dbh is diameter at breast height; and H is tree height

For species composition in mature plots, the study used the Importance Value Index (IVI) formula, which sums up the relative density, dominance and frequency of species. Mature plots considered were those estimated at 25, 55 and 65 years old during data collection, recognising that after 20 years, biomass production in regrowth miombo woodlands declines (Frost, 1996; Kalaba *et al.*, 2013).

It is represented by the following formula below (Kalaba *et al.*, 2013):

$$IVI = \frac{\text{Relative frequency} + \text{relative basal area} + \text{relative density}}{3}$$

### 3.4 Presentation of results

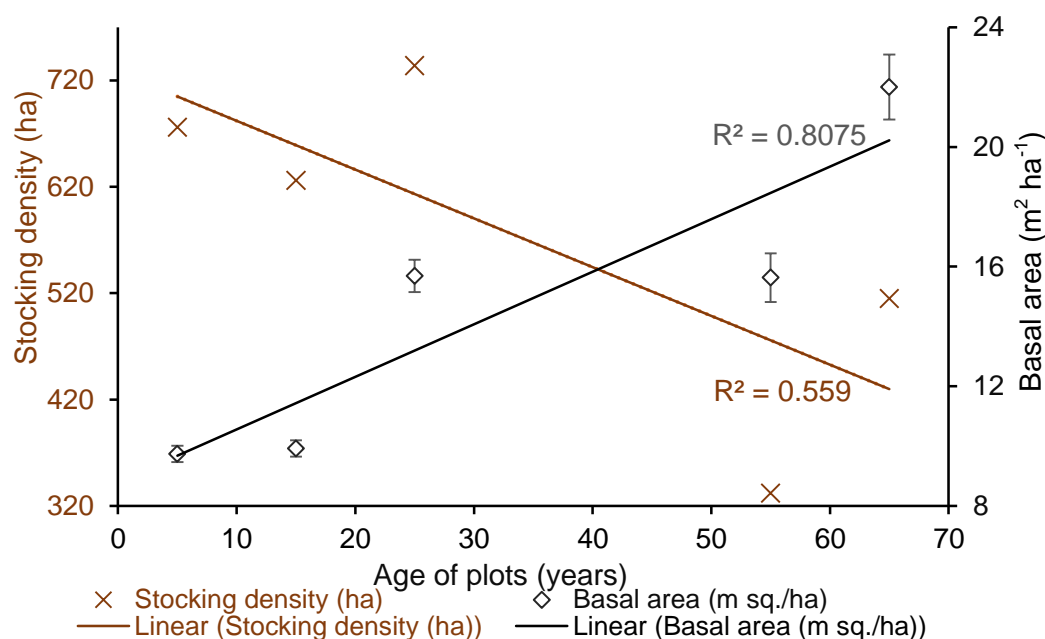
#### 3.4.1 Vegetation structure

A total of 6, 099 trees were surveyed. Stem density was  $554 \pm 27.2 \text{ ha}^{-1}$ , with stems ranging from 185 to  $845 \text{ ha}^{-1}$ . The mean diameter was  $10.4 \pm 6.7 \text{ cm}$ , the minimum being 5cm and maximum 77cm. The basal area was estimated at  $6.63 \pm 9 \text{ m}^2 \text{ ha}^{-1}$ , and ranged between 0.8 and  $31 \text{ m}^2 \text{ ha}^{-1}$  within the plots. The margins of diameter and basal area reflect the high heterogeneity of species in the sampled plots. The number of species was  $50 \pm 8 \text{ ha}^{-1}$ , ranging between 37 and  $60 \text{ ha}^{-1}$ , while the number of families was  $24 \pm 3.2 \text{ ha}^{-1}$ , ranging from 18 to  $30 \text{ ha}^{-1}$ .

The Shannon indices were 2.8 and 3.1 for Mingomba and Kabunda, respectively, representing a mean value of 2.95 for the total area surveyed. The Jaccard Similarity Coefficient between Mingomba and Kabundi was 0.71. Species diversity score calculated on the basis of Equitability was 0.69 and 0.74 for Mingomba and Kabundi, respectively, representing a mean value of 0.72 as an estimated relative diversity of species in Nansanga. That is, 72% tree species diverse.

A linear line of fit when the stocking density  $\text{ha}^{-1}$  was plotted against the estimated ages of sampled plots yielded the graph shown in **Figure 3.2**.



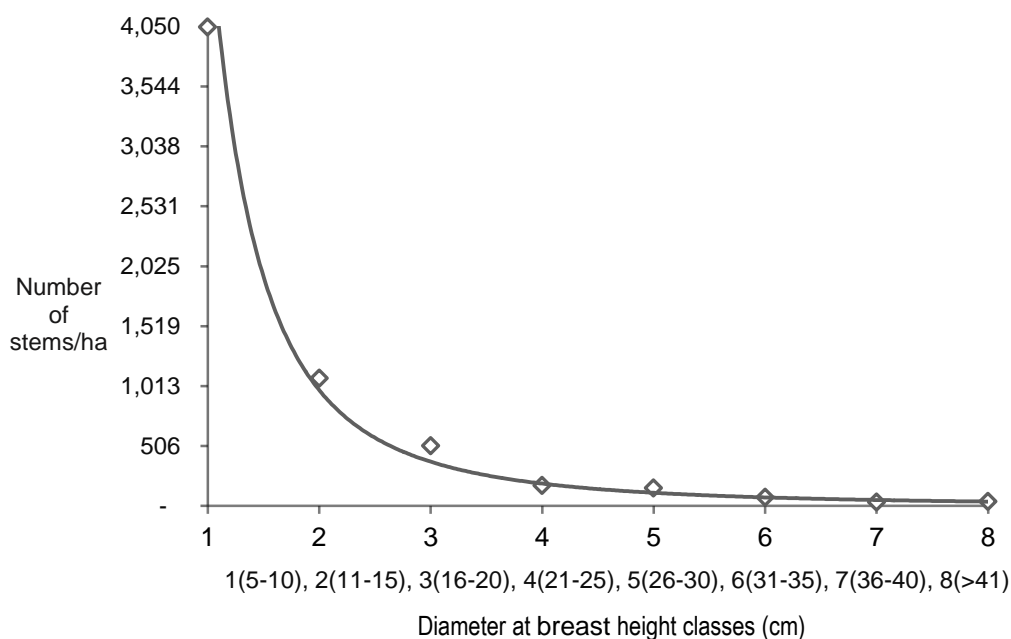


4 - Figure 3.2 Age of plots plotted against basal area and stocking density ha<sup>-1</sup>.

The regression parameters for basal area, represented by diamonds with error bars, and linear trendline equation are  $y = 0.18t + 8.8$ , and  $R^2 = \sim 81\%$ .  $y$  and  $t$  represent the basal area and age of plots, respectively. A linear regression of basal area against the age of plots explained  $\sim 81\%$  of observed variability. The regression parameters for stocking density, represented by dark orange crosses and linear trendline equation are  $y = -4.6t + 727$ , and  $R^2 = \sim 56\%$ .  $y$  and  $t$  represent stocking density and age of plots, respectively. The data was able to explain  $\sim 56\%$  of the observed variability.

More than 75% of stems had diameters  $\leq 20\text{cm}$ . The number of stems ha<sup>-1</sup> plotted against diameter class, with a power line of fit produced a reverse J-shaped size class (**Figure 3.3**). The plots were dominated by trees in the 5-15 years age group plots, re-growing following a shift from *chitemene* system to sedentary smallholder cultural agricultural practices. In addition, annual fires are a common phenomenon in Nansanga. Despite the presence of *B. spiciformis*, *B. boehmii* and *J. globiflora*, the towering canopy species in miombo woodlands (Frost, 1996), the plots were fairly open, allowing the survival

of understory growth. We recorded the presence of *Pennisetum*, *Setaria*, *Brachiara*, *Digitaria* and *Dactyloctenium* grass species, in addition to *Panicum natalense* and *Phragmites australis* in Nansanga. Furthermore, some plots were rocky, and the trees grew further apart, including in the 25, 55 and 65 years age group plots.

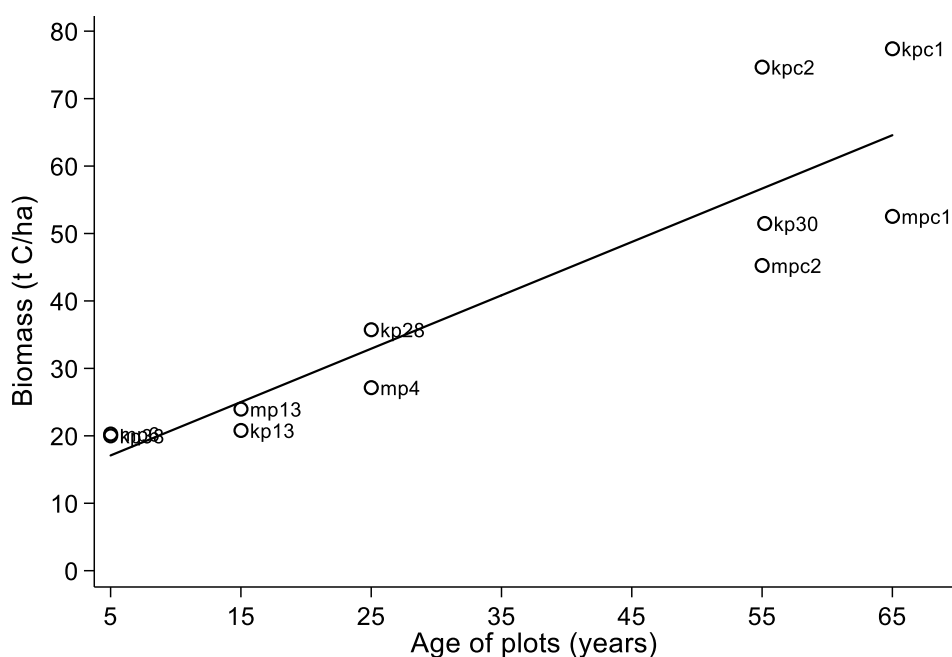


**5 - Figure 3.3** A reverse J-shaped diameter class distribution  $\text{ha}^{-1}$ . The regression parameters for the number of stems plotted against each diameter class  $\text{ha}^{-1}$  are  $y = 5076.5x^{-2.377}$ , where  $y$  is the number of stems  $\text{ha}^{-1}$ , and  $x$  is the diameter size.  $R^2$  is 98%, accounting for the observed variability.

### 3.4.2 Site woody productivity

The estimated ages of plots were based on the land use and history of occupation of Kabunda and Mingomba communities within Nansanga, as narrated by local botanists who took part in this study. Site woody productivity was estimated in terms of aboveground biomass accumulation. The mean was  $40.4 \pm 21.2$  (sem). Using the five allometric

equations in **Table 3.1**, **Figure 3.4** below was produced. The slope of the graph indicates the site woody productivity, estimated at  $0.79 \text{ tC ha}^{-1}$ . The mean estimated AGC was  $15.7 \pm 5.3 \text{ tC ha}^{-1}$ , ranging from 1.6 to  $78.6 \text{ tC ha}^{-1}$ . The allometric equation by Stromgaard (1985) uses both height and dbh while the one by Chave *et al.* (2014) uses tree height, dbh and wood gravity density, and the other three equations are solely based on dbh. The wide range of AGC is consistent with the diameter and basal area ranges reported on above.



**6 - Figure 3.4** Estimates of site woody productivity by changes of biomass accumulation per 1 ha plots relative to estimated ages of sampled plots. The value of the slope is 0.79, representing site productivity in  $\text{tC ha}^{-1} \text{ year}^{-1}$  as in Williams *et al.* (2008).

### 3.4.3 Floristic composition

In the 25, 55 and 65 year old plots, the total number of species identified were 65 belonging to 30 families. In Nansanga, the study showed that the first 5 most important species in these age groups are *J. paniculata*, *I. angolensis*, *M. obtusifolia*, *B. longifolia* and *A. andongensis*. In descending order ranked by IVI, **Table 3.2** below summarises the floristic composition of Nansanga of the first 20 species.

**8 - Table 3.2** Species composition of mature miombo species ranked by IVI

Rank	Species	RF %	RBA %	RD %	IVI %
1	<i>Julbernardia paniculata</i>	93.2	58.0	28.2	59.8
2	<i>Isobertinia angolensis</i>	84.9	50.9	4.7	46.8
3	<i>Markhamia obtusifolia</i>	79.3	40.7	0.6	40.2
4	<i>Brachystegia longifolia</i>	71.6	29.1	3.4	34.7
5	<i>Amblygonocarpus andongensis</i>	69.8	23.3	0.2	31.1
6	<i>Monetes africanus</i>	63.4	20.7	1.1	28.4
7	<i>Anisophyllea boehmii</i>	61.8	12.5	2.8	25.7
8	<i>Syzygium guineense</i>	57.7	7.5	1.7	22.3
9	<i>Phyllocosmus lemaireanus</i>	57.2	7.5	0.7	21.8
10	<i>Brachystegia spiciformis</i>	51.4	2.6	7.2	20.4
11	<i>Uapaca kirkiana</i>	52.3	5.8	0.4	19.5
12	<i>Diplorhynchus condylocarpon</i>	45.9	8.9	1.0	18.6
13	<i>Pericopsis angolensis</i>	48.8	5.7	0.4	18.3
14	<i>Diospyros mespiliformis</i>	45.9	6.9	0.0	17.6
15	<i>Pterocarpus angolensis</i>	42.2	9.3	0.1	17.2
16	<i>Parinari curatellifolia</i>	41.8	6.6	1.1	16.5
17	<i>Albizia antunesiana</i>	34.2	6.0	9.0	16.4
18	<i>Burkea africana</i>	41.2	6.0	1.1	16.1
19	<i>Protea angolensis</i>	37.9	7.4	1.8	15.7
20	<i>Swaetzia madagascariensis</i>	40.3	3.4	2.2	15.3

Where RF is relative species frequency, RBA is relative basal area, RD is relative density and IVI is Important Value Index.

Traditionally, woodlands are burned in August and September for land preparation (see seasonal calendar appendix 2), to allow shoots to sprout for animal grazing, but also to time the life cycle of caterpillars (M-FGD #2, K-FGD #2, Nansanga, March 2018). Nansanga is also quite rocky with hills and water-logged areas in some places. These features were observed in the 25, 55 and 65 year old plots.



**7 - Figure 3.5** Typical agricultural abandoned land.

The trees show bulges that grew from regions where trees were cut during chitemene system (Picture by A.Chilombo in Nansanga, November 2016).

The 55 and 65 year old plots were typically characterised by incidences of fires, rocky soils, grass, particularly *Hyparrhenia* and presence of termites. Given the historical land use embedded in the traditional *chitemene system* of the area, trees especially in the 5, 15 and 25 year old age plots had bulges on areas where they were cut (**Figure 3.5 above**), highlighting socio-cultural community interaction with forestland.

**Table 3.3** Commonly used community medicinal and non-medicinal plants

Botanical name	Community use	First 20 IVI
<i>Brachystegia longifolia</i>	The leaves and roots soaked for a baby to drink and be bathed in before adulterous father can hold it, otherwise it falls sick. Also, fibre is for construction and making mats. The trees also host caterpillars.	$m&n_Y$
<i>Isobberlinia angolensis</i>	The bark is soaked in water and liquid drunk for treating coughs.	$m_Y$
<i>Monetes africanus</i>	The leaves dried and pulverised for treating burns. Fresh young leaves are chewed and swallowed as an aphrodisiac for men.	$m_Y$
<i>Syzygium guineense</i>	Used to neutralise meat contaminated with snake poison. Meat is boiled together with fresh roots.	$m_Y$
<i>Zanha africana</i>	The roots and or barks are dried and pulverised to treat migraines by tattooing.	$m_N$
<i>Memecylon flavovirens</i>	The roots and or barks are dried and pulverised for treating sores that have taken long to heal.	$m_N$
<i>Julbernardia paniculata</i>	The fresh barks are soaked, and the liquid is drunk for treating coughs. Also, used for fuelwood and for making hoe and axe handles	$m&n_Y$
<i>Markhamia obtusifolia</i>	For making hoe and axe handles	$n_N$
<i>Anisophyllea boehmii</i>	For wild fruits.	$n_Y$
<i>Brachystegia spiciformis</i>	Fibre for construction and making mats, and poles for making hoe and axe handles.	$n_Y$
<i>Uapaca kirkiana</i>	For wild fruits and poles for construction.	$n_Y$
<i>Pericopsis angolensis</i>	Poles for construction, hoe and axe handles and fencing.	$n_Y$
<i>Pterocarpus angolensis</i>	Making canoes, poles for construction and making timber.	$n_Y$
<i>Parinari curatellifolia</i>	For wild fruits.	$n_Y$
<i>Albizia antunesiana</i>	For making pestles and mortars.	$n_N$
<i>Swaetzia madagascariensis</i>	Poles for construction and making handles for hoes and axes.	$n_Y$

Where:  $m&n$  indicates that the species has both medicinal and non-medicinal use;  $n$  indicates that the species has non-medicinal use;  $m$  indicates that the species has medicinal use; and Y and N indicate presence and absence, respectively on the list of the first 20 species ranked by their IVI in **Table 3.2**.

Based on focus group discussions, key informant interviews with traditional botanists and 'evening fire' family gatherings, **Table 3.3** above

shows the socio-cultural important species in Nansanga. The seasonal calendar (appendix 2) also shows that throughout the year, communities in Nansanga are involved in socio-economic activities linked to land.

### 3.4.4 Edaphic characteristics

Except K that was found to be within recommended thresholds for crop production, soils in Nansanga were found to be medium to strongly acidic. P, Na and SOC were all found to be lower than recommended soil fertility thresholds for crop production, unless with application of inorganic fertilisers. Results obtained are summarised in **Table 3.4** below (see appendix 3 for full results).

**Table 3.4** Nansanga soil characteristics

Tested element	Results	Grade levels	Comments
Soil pH	4.1 ± 0.38 (range 3.4-5)	Medium to strongly acid	Soils are extremely acidic, requiring full liming of up to 2,000 kg ha <sup>-1</sup> for heavy soils and 1,500 kg ha <sup>-1</sup> for the lighter soils.
Phosphorus (P) (ppm)	2.1 ± 1.4 (range 0.9-6)	Very low	Phosphorous is extremely low, requiring application of Triple Superphosphate at 100 kg ha <sup>-1</sup> to avoid dwarfing of crops.
Potassium (K) (ppm)	55.4 ± 32 (range 14-156)	Medium	Within recommended levels.
Sodium (Na)	15.4 ± 5.1 (range 6-9)	Low	Lower than the fertile soil threshold of 23-56 (Ray <i>et al.</i> , 2006).
Soil organic carbon (%)	0.6 ± 0.32 (range 0.1-1.9)	Low	Organic matter is very low in the soils.

### 3.4.5 Fuelwood, mushrooms, caterpillars and animal species

In addition to socio-cultural community value tree species in **Table 3.3**, community preferences for fuelwood in their order are: umutobo (*I. angolensis*), kaputu (*B. spiciformis*), kasabwa (*B. manga*), umusamba (*B. longifolia*) and umubanga (*P. angolensis*). They also reported that the black mumpa (*Gonimbrasia zambesina*), green cipumi (*Gynanisa maja*), white imikoso (*Cirina forda*) caterpillars are associated with mainly *J. paniculata* and *I. angolensis*, *J. paniculata*, and *B. africana*, respectively. Concerning mushrooms, communities reported that Bwitondwe (*Cantharellus afrocibarius*), Ubukungwa (*Termitomyces titanicus*), Tente (*Amanita zambiana*), Kabansa (*Lactarius kabansus*) and Chiteleshi (*Russula ciliate*) are associated with *Brachystegia*, *Julbernardia*, *Isoberlinia*, *Marquesia*, *Monotes* and *Uapaca* species, miombo ectomycorrhizal species (Frost, 1996) (more details in Chapter 7). Interviews with local botanists revealed that Nansanga is a migratory corridor of *Alcelaphinae*, *Hippopotamus amphibious*, *Kobus vardonii*, *Tragelaphus spekii*, *Kobus leche* and *Raphicerus sharpie* from the nearby Kasanka National Park.

## 3.5 Discussion

### 3.5.1 Vegetation structure, floristic composition and aboveground carbon storage

**Overview and comparison with other studies** – In discussing the results of this chapter, we compare our results to results from other studies in the miombo ecoregions, including other parts of Zambia. In this section, we make reference to studies in Angola, Malawi, Mozambique



and Tanzania, besides studies done in other parts of miombo ecoregions in Zambia. The choice of studies from these countries is based on the level of published work in the respective miombo ecoregions.

We measured 6,099 trees on 11 hectares. 3,495 trees over a total area of 7 hectares were in mature plots, representing 68 species. Overall, 72 species were recorded in Nansanga. Our finding was higher than in Kalaba *et al.*, (2013) in Zambia, and Kuyah *et al.* (2014) in Malawi. That is, 2,761 trees and 2,481 trees over 6 hectares, respectively. Gonçalves *et al.* (2017) recorded 3,157 in Angola over 4 hectares, higher than our finding. The mean basal area reported in this study,  $6.63 \pm 9 \text{ m}^2 \text{ ha}^{-1}$ , is within the miombo woodland basal area range of 7-19  $\text{m}^2 \text{ ha}^{-1}$  (Frost, 1996). The inverse J-shaped size class distribution compares with Kalaba *et al.* (2013) in Copperbelt province in Zambia and Gonçalves *et al.* (2017) in Angola, indicating a stable and self-maintaining population of species (Peters, 1994).

Nansanga has been established in wet miombo woodland associated with specific defining tree species. The IVI shows the dominance of *Julbernardia paniculata*, *Isoberlinia angolensis*, *Markhamia obtusifolia*, *Brachystegia longifolia* and *Amblygonocarpus andongensis*, including fire tolerant *Diplorhynchus condylocarpon*, *Burkea africana*, *Pterocarpus angolensis*, and the light demanding *Albizia antunesiana* and *Uapaca kirkiana* (Gonçalves *et al.*, 2017; Kalaba *et al.*, 2013). The presence of these miombo defining tree species in Nansanga are comparable to the species recorded and or reported on in the following studies: miombo woodlands in southern Africa (Frost, 1996); miombo woodlands in Zambia (1,200 mm annual rainfall - Chidumayo & Kwibisa, 2003; Kalaba *et al.*, 2013; Stromgaard, 1985); miombo woodlands in Malawi (sites with 300 - 1,600 mm annual rainfall - Kuyah *et al.*, 2014);

miombo woodlands in Tanzania (sites with 771 - 1,915 mm annual rainfall - Mugasha *et al.*, 2013; 933 mm annual rainfall - Jew *et al.*, 2016); miombo woodlands with 850 mm annual rainfall in Mozambique (850 mm annual rainfall - Ryan & Williams, 2011). This suggests that at the level of floristic composition, Nansanga is comparable to miombo woodlands in other parts of Zambia particularly, and in southern and eastern Africa in general. The different levels of species composition reported on in the studies above are attributed to different levels of annual rainfall (Jew *et al.*, 2016).

The species diversity as measured by Shannon Index of 2.95 compares with 2.8 in the Copperbelt of Zambia (Kalaba *et al.*, 2013), and 2.25 (Chidumayo, 1987) in Northwestern provinces of Zambia, both of which are wet miombo woodlands receiving more than 1,000 mm per year (Frost, 1996). Our finding also compares to the mean Shannon Index of 2.99 found in Malawi (Kuyah *et al.*, 2014), and 2.86 in high utilisation sites in Tanzania (Jew *et al.*, 2016). However, Shirima *et al.* (2015) report lower Shannon Index value of 1.68 obtained in the Tanzanian miombo woodlands.

The species density,  $50 \pm 8 \text{ ha}^{-1}$ , ranging from 37 and  $60 \text{ ha}^{-1}$ , as the number of species  $\text{ha}^{-1}$  (Chidumayo, 1987) was higher in Nansanga compared to  $22 \pm 1.2 \text{ species ha}^{-1}$  (Kalaba *et al.*, 2013). This disparity could be attributed to the demographics and socio-economic factors that shape the level and type of land uses in the Copperbelt and Nansanga. The Copperbelt has higher population density compared to Nansanga.

Our findings show that stocking density decreases with age of plots, while biomass and basal area increase with age of plots. This finding in Nansanga compares with chronosequence of the miombo woodland in the Copperbelt of Zambia (see Kalaba *et al.* (2013) and

Mozambique (see Williams *et al.*, 2008). The site woody productivity of  $0.79 \pm 4.2 \text{ tC ha}^{-1} \text{ yr}^{-1}$  compares with  $0.72 \text{ tC ha}^{-1} \text{ yr}^{-1}$  that McNicol *et al.* (2015) found in south eastern Tanzania with annual precipitation of 600 - 800 mm;  $0.7 \text{ tC ha}^{-1} \text{ yr}^{-1}$  that Williams *et al.* (2008) found in Mozambique with annual precipitation of 800 mm. However, Kalaba *et al.* (2013) reported  $1 \text{ tC ha}^{-1} \text{ yr}^{-1}$ , slightly higher than in Nansanga within the same miombo ecoregion with 1 000 – 1 200 annual rainfall.

The mean AGC was  $15.7 \pm 5.3 \text{ tC ha}^{-1}$ , ranging from 1.6 to  $78.6 \text{ tC ha}^{-1}$ . It was lower than  $39.6 \text{ tC ha}^{-1}$  (Kalaba *et al.*, 2013) in Zambia;  $23.3 \text{ tC ha}^{-1}$  (Shirima *et al.*, 2011) in Tanzania;  $21.2 \text{ tC ha}^{-1}$  (Ryan *et al.*, 2011) in Mozambique; and  $19.1 \text{ tC ha}^{-1}$  (Munishi *et al.*, 2010) in Tanzania. Our finding was however, marginally higher than  $14.6 \text{ tC ha}^{-1}$  that Jew *et al.* (2016) found in high utilisation miombo sites in southern Tanzania. While species composition is not affected by utilisation (Jew *et al.*, 2016), our low mean AGC is attributed to land use in Nansanga where communities have historically and culturally been practising *chitemene system* of cultivation. This finding resonates with Walker & Desanker (2004) who found that carbon content was 40% less in cultivated miombo woodlands than in natural miombo woodlands. Munishi *et al.*, (2010) and Shirima *et al.* (2015) also found that AGC is negatively related to miombo disturbance and age of sampled plots.

More than 75% of the measured trees had  $\text{d}_{\text{hb}} \leq 0.2 \text{ m}$ . Given that the allometric equations for estimating biomass are based on diameter sizes, the distribution of diameter sizes partly explains the lower estimates of the biomass from which carbon was calculated, assuming that 50% of biomass is carbon (Shirima *et al.*, 2015). This observation is consistent with explanations to similar observations by Kuyah *et al.* (2014) in Malawi and Malimbwi (1994) in Tanzania. The distribution of

diameter sizes indicates the level of recovery in the sampled plots, which suggests land utilisation in Nansanga.

According to Rasmussen *et al.* (2018), pre-existing land-use intensity and development context influence ecological outcomes. The values found for Nansanga could be attributed to the historical land use and land management practices that involve bush fires. The morphological results on trees of *chitemene system* that include bulges on tree trunks are a common phenomenon in Nansanga. In addition, fires are an annual occurrence. With population increase in the area, burning, as it was reported, is more common and not done according to the traditional calendar. This is because more land has been converted from customary tenure to leasehold, and traditional rules do not apply on leasehold. Ryan & Williams (2011) observed that fire impacted basal area on plots with annual fire, and biomass except in the third year. The age of plots, type of regrowth and distance to human settlements influence the rate of miombo recovery (Chidumayo, 2002). The traditional family structure of big families like in Nansanga influences the intensity of land use that impacts miombo recovery (Chidumayo, 2002). In another study, Chidumayo (2013) attributes low AGC in the miombo to fires, harvesting and land conversion to crop production. Therefore, our findings could be attributed to land use in Nansanga, settlements and family sizes.

### **3.5.2 Edaphic characteristics**

Land clearing for crop production has a negative impact on the soil fertility status in that it reduces SOC (Chidumayo & Kwibisa, 2003). From the analyses of the soil chemical and physical characteristics, the soils are acidic and poor in P, Na and SOC. 82% of the area is taxonomically

acrisols, while 16% and 2% are ferrosols and leptosols, respectively. Textually, 30% is sandy clay loam, 25% silty clay loam, 20% silty clay, 18% loamy sand and 7% gravel. At the level of the physical and chemical properties of the soils, the results of the present study are consistent with those of Shelukindo *et al.* (2014) in the miombo woodland of Tanzania in leptosols, fluvisols and cambisols soils.

These poor edaphic qualities of the soils in Nansanga confirm the minutes of a Nansanga scoping workshop.<sup>4</sup> In the miombo, coarse textured soils with more sand than clay, as in the present study, tend to have poor fertility status (Shelukindo *et al.*, 2014). Leaching is an important explanatory factor in miombo soils (Strømgaard, 1992). According to Chidumayo (1987), soils in high rainfall areas like Nansanga have poor fertility status because they are heavily leached. According to Shirima *et al.*, (2015 p241), 'miombo have a low soil nutrient content, are well drained, highly leached, acidic and low in organic matter.' The soil fertility status of Nansanga falls within the 4-6 pH acidic soils that are characteristic of miombo woodland (Chidumayo, 1999). Given the poor fertility status of soils in Nansanga, *chitemene system* has therefore constituted the traditional and cultural agricultural practice in the area. *Chitemene system*, involves the cutting of trees, gathering them and burn. This releases Potassium, Phosphorus, Calcium, Magnesium and Sodium in the top soil immediately that raises the soil pH (Chidumayo, 1987).

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<sup>4</sup> This meeting was held by government officials at national, provincial and district levels. It was held in Serenje from September 7-9, 2006. At this meeting, it was revealed a Libyan investor pulled out investing in NFB indicating the farm block was rocky.

### 3.5.3 Socio-cultural community uses of Nansanga miombo woodland

Based on focus group discussions, key informant interviews with traditional botanists and 'evening fire' family gatherings, the miombo woodland of Nansanga is, in the words of Dewees *et al.* (2010 p61) 'a pharmacy, a supermarket, a building supply store, and a grazing resource, providing consumption goods not otherwise easily available.' The results presented about community commonly used medicinal and non-medicinal trees (**Table 3.3**) reveal that land in Nansanga is not idle, but actively being used by community members. In addition, from the same **Table 3.3** *Z. africana*, *M. flavovirens*, *M. obtusifolia*, *M. africanus* and *A. antunesiana* are commonly used however, scarce due to over exploitation, confirming that community members use the land for their socio-economic well-being. In addition, community members harvest mushrooms, caterpillars and hunt animals. They also use dambos for grazing their animals. The seasonal calendar demonstrates that land is at the centre of the life of people in Nansanga throughout the year (see **appendix 2** for details).

As has been shown in the previous sections, the level of AGC, diameter size distribution, the presence of fire in the sampled plots and the practice of *chitemene system* are further indications of people's socio-cultural uses of the Nansanga miombo woodland, suggesting that land in Nansanga is not unutilised or idle.

### 3.6 Conclusion

This chapter aimed at identifying the context-specific environmental characteristics and socio-cultural uses of the miombo woodland where Nansanga farm block has been established to enable an informed commentary on the marginality of the area. Given the various meanings attributed to land marginality, our operational definition in this chapter has been that Nansanga is marginal if it meets the following criteria: i) its floristic and structural composition shows a low diversity system that does not compare to other miombo ecoregions; and ii) there are no indications of socio-cultural uses of miombo woodland in Nansanga by communities. Overall, our results reveal that Nansanga has been established on a structurally complex, diverse ecosystem, and on soils with a fertility status that is characteristic of miombo woodlands. The results show that the floristic and structural composition is generally comparable to other studies in the Copperbelt, Northern and Northwestern provinces of Zambia. The results are also comparable to studies in other miombo woodland ecoregions beyond Zambia, that is, in Angola, Malawi, Mozambique and Tanzania. AGC was lower than in most other studies, attributed to high utilisation of land in the form of *chitemene* system and frequent fires. This in itself suggests that community members use land for their livelihoods, challenging the narrative that lands targeted for LSLAs are idle. Where they don't cultivate food crops, they harvest mushrooms and caterpillars, hunt animal or take their domestic animals for grazing. In addition, Nansanga is a migratory corridor of *Alcelaphinae*, *Hippopotamus amphibious*, *Kobus vardonii*, *Tragelaphus spekii*, *Kobus leche* and *Raphicerus sharpie*.

Based on the structurally complex and diverse ecosystem of Nansanga, and community socio-cultural uses of the land, our findings suggest that Nansanga cannot be discounted as marginal land. The use of Nansanga miombo woodland highlights the relevance of smallholder land use and cultural land management practices to structural and floristic composition and AGC. Finally, without baselines to allow for longitudinal studies about environmental impacts, the chapter contributes to developing a biophysical and socio-cultural perspective and boundary that highlight a research path for understanding environmental impacts later in Nansanga.

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## 4 A Conceptual Framework for Improving the Understanding of Large Scale Land Acquisitions

Andrew Chilombo, Janet Fisher and Dan van der Horst  
School of GeoSciences, University of Edinburgh

**Abstract:** Efforts to improve the understanding of large scale land acquisitions (LSLAs) have been marred by methodological and epistemological challenges. Dominant approaches take a geopolitical lens that categorises the global north as ‘resource poor, financial haves’ and the global south as ‘resource rich, financial have-nots’ to generate data with often questionable accuracy. Case studies have prevailed to generate knowledge at community level that contributes to meta-analyses of LSLAs. However, as the post 2013 LSLA research agenda shifts from quantifying seized hectares of land and naming ‘land grabbers’ towards understanding processes of LSLAs, case studies have proved limited in reflecting dynamics that underpin LSLAs that are local, national, regional and international in scope. Conceptually, the focus on case studies isolates studied cases from drivers and effects of LSLAs at different levels. In this chapter, we aim to propose a conceptual framework to systematically link different policy spaces and geographic levels to improve our understanding of the socio-economic and environmental impacts of LSLAs. Literature has been reviewed on the methodological and epistemological challenges. Focus group discussions were also carried out in Nansanga farm block, a Zambian government-led LSLA program. The framework is applied to the farm block. The interviews qualitatively contribute to the understanding of positive and adverse lived experiences of communities following the LSLA program. Without

claiming to be a panacea for challenges of researching LSLAs, the framework makes a compelling case for a mix of methodological approaches that simultaneously consider context specific micro level processes and how they are linked to broader, higher policy and geographic level spaces and contexts. The framework points to the danger of researching cases of LSLAs in isolation from their drivers/causes and effects/impacts at different policy and geographic levels, and dangers of using research approaches that either ignore, misunderstand or underrepresent the multidimensionality of LSLAs.

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## 4.1 Introduction

The wave of large scale land acquisitions (LSLAs) is not a new phenomenon (Deininger, 2011). Compared to historical accounts of the phenomenon, including the era of colonialism of the global south, the contemporary LSLAs are in an era of more developed and matured democratic rights which are supported by governance structures of civil society organisations, and more media freedom. LSLAs are happening in a time with more eclectic but developed social science disciplines with overlapping methodological and epistemological approaches. The era is also punctuated with improved technological advancements that facilitate the exploitation of natural resources. Despite this level of sophistication, a comprehensive understanding of LSLAs remains elusive to social science research (Borras *et al.*, 2011). Thus far, LSLAs have mainly been

researched from the perspectives of political economy, political ecology, and agrarian change (Messerli *et al.*, 2013). Some approaches take a geopolitical lens that categorises the global north as 'resource poor, financial haves' and the global south as 'resource rich, financial have-nots.' Others focus on case studies, isolating cases of LSLAs from drivers and effects at different policy and geographic levels.

LSLAs have spurred polarised debates. Pro-LSLA actors view LSLAs as avenues of rural development, employment creation, technology transfer and food security. Anti-LSLA actors, on the other hand, resist LSLAs citing displacement of communities, environmental degradation, loss of community access to water, land and forest resources that underpin rural livelihoods. However, the evidence of these negative and positive impacts is often patchy and anecdotal (Oya, 2012). A shift from anecdotal claims requires localised investigations because that is where processes of exclusion or inclusion happen that yield different relationships between producers, labourers and larger capitalist enterprises (Borras *et al.*, 2010). According to McCarthy (2010), micro-processes at local levels and how they interact with wider dynamics, shape outcomes of LSLAs. While this offers a cautionary tale on what is generalisable regarding positive and negative impacts (Cotula *et al.*, 2014), it also strengthens the need for generating 'solid evidence through detailed, field-based research' (Hall & Scoones, 2011) that brings out the micro-level operations of micro-processes that influence LSLA outcomes. This call acknowledges that impacts vary and this needs to be reflected in analyses of impacts of LSLAs (McCarthy, 2010; Suhardiman *et al.*, 2015). The micro level investigation of socio-economic and environmental (SEE) impacts entails an evaluation of the socio-ecological system of where LSLAs are taking place.

Micro-level grounded investigations through cases studies have prevailed in LSLA research to improve the quality of evidence and data to inform political decisions and social action (Bräutigam & Zhang, 2013). Useful as micro level investigations into LSLA may be in providing more accurate and reliable data to inform meta-analyses, they remain incomplete. This is because the analyses are done in isolation from different higher policy and geographic level dynamics that drive LSLAs on the one hand, and their effects, on the other. In a multi-country study to test claims about LSLAs in Africa, Cotula *et al.* (2014 p905) note that ‘the full implications of the new wave of land deals can only be assessed if the deals are examined not in isolation, but within the wider political and economic projects they form part of.’ Similarly, in a study into the failure of LSLAs to contribute to sustainable development, Schoneveld (2017) observes that the interplay between domestic institutional dynamics and agricultural investment inflows from LSLAs are usually studied in isolation. Despite the acknowledgement of the broader dynamics of LSLAs, the research agenda on LSLA has not been sufficiently explicit about any conceptual framework that reflects the interconnectedness of LSLA cases at different geographic and policy levels. Research into LSLAs has not sufficiently been able to link different characteristics of the phenomenon to reflect its complete anatomy. A conceptual framework to link different characteristics and dimensions of LSLAs is therefore required, particularly as LSLA research agenda has shifted from quantifying seized hectares and naming ‘land grabbers’ towards understanding processes and impacts of the phenomenon (Oya, 2013).

This chapter responds to this scholarly call. The chapter aims to propose a conceptual framework to improve our understanding of the SEE impacts of LSLAs in a systematic and integrated way at different

policy and geographic levels. The chapter builds on the contributions of case studies for generating evidence that contribute to meta-analytical studies. The proposed conceptual framework acknowledges different drivers of LSLAs (see Hall, 2010) and the socio-ecological contexts in host countries in which LSLA deals happen (see Messerli *et al.*, 2014; Schoneveld, 2017). We posit that a comprehensive understanding of SEE impacts of LSLAs needs to account for macro, meso and micro level policy and economic drivers but also impacts of the phenomenon at the same policy and geographic levels. We argue that understanding policy and economic drivers of LSLAs at global, regional and national levels is as important as understanding the socio-economic, cultural and environmental dynamics at community level where LSLAs actually happen and immediate impacts are experienced. Case studies are invaluable in generating evidence, but remain incomplete if not complemented by an understanding of higher level drivers and effects. The proposed framework is an attempt to encourage a research agenda on LSLAs that uses a mix of methodological approaches to integrally understand SEE impacts at the macro, meso and micro levels. This is because drivers and effects of LSLAs have local, national, regional and international linkages and dimensions.

The chapter is structured as follows: We first present what Edelman *et al.* (2013) refer to as the 'making sense' phase of LSLA research in Section 4.2. The section highlights the research focus and methodological, epistemological and data quality challenges during this phase. Section 4.3 on the 'post 2013 LSLA research agenda' is then presented building on the 'making sense' phase with attempts to improve LSLA research through case studies. In this section, scholarly calls for case studies are reviewed, highlighting their limits in understanding a

phenomenon of local, national, regional and global scope. Consistently, we then present the rationale for an LSLA framework in Section 4.4. Thereafter, we present the framework before applying it to Nansanga farm block (henceforth Nansanga) in Zambia.

Nansanga is part of the government of Zambia-led commercial agriculture program that began in 2002 (see GRZ (2005)). Thus, in terms of approach, this chapter combines literature review with a case study to illustrate the proposed framework within a concrete case of an LSLA that is unfolding and embedded within the government of Zambia's development policy. The framework emphasises the importance of accounting for micro level benefits and costs of phenomena such as LSLAs within national, regional and global dynamics of which they are part, through cause and effect.

## **4.2 The 'making sense' phase of LSLAs**

This section highlights the LSLA research focus between 2007 and 2012. When the contemporary LSLAs caught media attention following the 2007/2008 food price spike crisis (see Taylor & Bending, 2009; Woodhouse, 2012), pro and anti-LSLA actors focused on the SEE benefits and costs of the phenomenon in host countries (Borras *et al.*, 2011). Research focused on understanding what was happening regarding LSLAs by asking questions related to 'where and when, who is involved, how much land is involved, and how many people are being expelled from their land? How do we define land grab? What do we count? How do we count? How do we interpret our sources? (Edelman *et al.*, 2013 p.1520).' These questions were tackled between 2007 and 2012, a time that Edelman *et al.* (2013) refer to as the 'making sense'

period. During the same period, there was what Oya (2013) refers to as 'literature rush' about LSLAs, evidenced by media reports, NGO reports and academic publications. The dominant discourse during this phase among NGOs, academia, think-tanks and the media, according to Borrás & Franco (2012), was: LSLAs involve land use change that lead to deforestation; LSLAs are transnational in nature; LSLAs involve finance capital that partly lead to speculative deals; LSLAs lead to disarticulation of affected communities; LSLAs are non-consultative, non-transparent and involve corruption; and LSLAs require some form of regulation through guidelines or principles.

Questioning the dominant discourse as LSLAs unfolded was imminent. LSLAs are dynamic and not transparent (see Borrás & Franco, 2012; Borrás & Franco, 2010; Locher & Sulle, 2014), and as Nolte (2014b) notes, they happen in 'black boxes.' This leads Oya (2013) to question the extent to which, for example, global numbers of hectares of land that have been acquired are accurately reflective of the unfolding nature of LSLAs. According to Edelman (2013 p487), high reported numbers of seized hectares have 'little regard for the solidity of evidence or for considerations of scale other than area.' Oya (2013) highlights some of the serious problems that compromise data quality and evidence. Oya refers to data confusion (adding oranges and apples by forcibly mixing actual facts, perceptions, intentions, rumours), data selection biases, difficulties in collection of data on land use, and use of unchecked and unverified data in reports, including academic publications. In addition, some conclusions on outcomes or impacts did not match with available evidence, and research objectives and adopted research methodologies were conceptually and theoretically inconsistent (Edelman *et al.*, 2013).



The 'making sense' phase was characterised with the 'syndrome of false precision,' (Oya, 2013), with 'facts' 'presented as concrete and undisputed, yet their basis is dubious (Scoones *et al.*, 2013 p478).' The phase offered new pathways of knowledge building that has put LSLAs on public and policy map (Scoones *et al.*, 2013). To this end, Locher & Sulle (2014) indicate that political decisions and social actions about LSLAs have been informed by inaccurate data of the 'making sense' period. Effectively, data with the 'syndrome of false precision' has widely been used by different interest groups, putting LSLAs among one of the most debated topics in development work in the past decade. Even when recent work has been undertaken with improved quality of data, Bräutigam & Zhang (2013) observe that initial papers on the problematics of LSLAs overshadow new improved data in terms of impact. While the 'making sense' phase put LSLA on the public and policy map, serious concerns have been raised concerning the quality of data during the phase. It was a phase of 'quick and dirty' fact-finding research missions (Edelman *et al.*, 2013; Oya, 2013; Scoones *et al.*, 2013) with 'competing initiatives and perspectives, as different organisations sought to quantify ever more shocking 'killer facts'—particularly dramatic numbers of people displaced and hectares grabbed (Edelman *et al.*, 2013 p1520).'

LSLA researchers in the post 2013 period are aware of the methodological challenges but also of the importance of collecting accurate, quantifiable and verifiable data on LSLAs. Oya (2013 p.504) suggests that 'methodological discussion of evidence on 'land grabs' should go beyond the big numbers and large datasets and attempt a broader critical discussion of what is being reported, published and on the basis of what sources and methods.' In this light, the post 2013 research agenda on LSLAs needs to pay attention to less publicised cases and

actors behind hectares (Edelman, 2013). Thus, instead of looking at who bought land in Nansanga and how many hectares, for example, Oya (2013 p505) suggests that research focus more on learning about the *processes* and *impacts* of land deals rather than verifying 'the number of land deals and their acreage, the names of the 'grabbers', their nationality, and what to count or not to count.' Edelman (2013) also argues for an improved understanding of the SEE impacts.

Results of LSLA studies post 2013 LSLA research agenda are still dominated by negative impacts of LSLAs, including 'anecdotal, unverified and moribund cases in databases and published reports which then, inevitably, appear to be 'written in stone' (Edelman, 2013 p.497).' Bottazzi *et al.* (2018 p128) report on 'a clear increase in total monetary income, a perceived improvement in food and water security, and an increase in food consumption expenditure' in Sierra Leone, however acknowledge that positive outcomes of LSLAs are generally limited. In a review of studies on LSLAs, Oya (2013 p1545) found that a 'large majority of the works reviewed reported negative outcomes as their dominant conclusion (60%), while fewer than 3% reported mainly positive outcomes.'

In a meta-analysis, Oberlack *et al.* (2016) identified the following adverse impacts of LSLAs: loss of access to land and natural resources; more conflictual livelihood contexts; increased intracommunity inequality; contested compensation; ecosystem degradation; adverse labour transformation; maladaptive livelihood strategies; food security decline; and erosion of social capital. Dwyer (2014 p380) reports on 'a mix of poor policy, institutional ineptitude and personal corruption' of Chinese investments in north-western Laos PDR. Matenga & Hichaambwa (2017) note that landlessness is a common feature in LSLA deals and rural

communities end up as farm workers. In an African continental study, the African Union *et al.* (2014 p3) note ‘widespread alienation of land from local communities without adequate compensation, marginalisation of (family) smallholder producers in favour of large scale investors who received better protection and accentuation of gender based inequalities.’ The negative impacts of LSLAs are attributed to loss of access to land and associated resources for productive purposes (Milgroom, 2015; Oberlack *et al.*, 2016), and vary from context to context, partly attributed to local level dynamics (Suhardiman *et al.*, 2015).

Having set the stage for the post 2013 LSLA research agenda as it builds on the ‘making sense’ phase, the next section briefly reviews the scholarly support for case studies; highlighting their contribution to improving evidence and data quality about the SEE impacts of LSLAs. The section also highlights the limits of case studies in researching a phenomenon that has both temporal and spatial scales. In other terms, given the global, regional, national and local scope and nature of LSLAs, a case study of an LSLA in a particular community is good, but not sufficient to unravel policy drivers, actors and processes at national, regional or global levels.

### **4.3 Case studies in the post 2013 LSLAs research agenda: a brief review**

LSLA researchers in the post 2013 period are aware of the methodological challenges but also of the importance of collecting accurate, quantifiable and verifiable data on LSLAs. The post 2013 research agenda needs to reflect upon and avoid the common biases

and shortcomings of previous work in the ‘making sense’ period of LSLA research (Edelman *et al.*, 2013).

Efforts by ‘one-stop-shops’ Land Matrix Partnership<sup>5</sup> and GRAIN<sup>6</sup> have been commended for gathering as much information as possible about what is happening on the ground regarding LSLAs. However, Borrás *et al.* (2011) warn against the inherent inaccuracies, unreliability of data and their sources and respective institutional agendas. Scoones *et al.* (2013) point to seven factors that have contributed to poor understanding of LSLAs. These are: i) fixation on number of hectares as ‘killer fact’; ii) inappropriate inferences derived from non-evidence based ‘data’ or wrong methods; iii) poor quality sources of data; iv) selection biases of data; v) issues surrounding the review process of published work; vi) rapidity of easy access to ‘data’; and vii) lack of consensus on the definition of the term ‘land grabs.’ In light of these factors, Borrás *et al.* (2011) have proposed case studies to enrich meta-analyses with more accurate and reliable data. The call to use case studies to improve our understanding of LSLAs is in acknowledgement that ‘we actually still don’t know how many land deals have been entered into, where and with what consequences (Scoones *et al.* 2013 p473).’ According to Edelman (2013 p498), ‘we need case studies that are both more numerous and more rigorous, and – perhaps even more importantly – a deeper discussion about the kinds of inferences and generalizations that we can

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<sup>5</sup> <http://www.landmatrix.org/en/> Land Matrix is a global and independent land monitoring initiative that promotes transparency and accountability in decisions over land and investment. As a Global Observatory, Land Matrix collects and visualises information about large scale land acquisitions

<sup>6</sup> <https://www.grain.org/> GRAIN is an international non-governmental organisation that works to support small farmers and social movements in their struggles for community-controlled and biodiversity-based food systems. As a 2011 Right and Livelihood Award winner, GRAIN has been appraised as having been ‘extremely effective in its mission to expose the risks of land grabbing.’

reasonably make from case studies.’ Case studies generate knowledge at community level that contributes to meta-analyses of LSLAs.

Questioning the epistemology of land grabbing data, Edelman (2013 p498) proposes case studies as ‘they are likely and unavoidably the main means through which scholars and activists can reliably understand what has occurred and what is occurring on the ground and to establish baselines for measuring subsequent impacts.’ With an emphasis towards improving the understanding of livelihood impacts, Oya (2013 p1533) notes that ‘there are still major thematic and analytical gaps and methodological problems with what is being published, particularly with regard to evidence on socioeconomic impacts, a central issue in debates on land grabs.’ Given the evolution of research on LSLAs, attention needs to focus on ‘the characterisation of a multifaceted and multi-caused phenomenon where context specificity is very important (Oya, 2013 p1535).’ Understanding context specificities of LSLAs reduces anecdotal claims that take potential impacts of LSLAs as if they were actual (Oya, 2013).

In the work on land acquisitions in sub-Saharan Africa that focused on understanding determinants, processes and actors, (Nolte, 2014b) asserts that the spatial distribution of LSLAs is difficult to fully understand. In this study Nolte acknowledges challenges that are difficult to surmount to enable a comprehensive understanding of the phenomenon, indicating that since ‘deals are often negotiated behind closed doors, the process remains a ‘black box’ to outsiders (Nolte, 2014b p9).’ For empirical insights into the ‘black box’ challenge, Nolte (2014b) proposes case studies. Given the global attention to LSLAs by different stakeholders with eclectic interests in the issue, getting grounded facts correct remains a scholarly imperative. To address these challenges, Scoones *et al.*

(2013) argue in favour of participatory action research in which those involved in LSLAs are part of knowledge building rather than being replaced by researchers.

Grounding an understanding of LSLAs within a specific case becomes relevant to interrogate the particularity of LSLAs within the scholarly narrative of what is known and unknown about them. The examples above in favour of case studies demonstrate the contribution that case studies make to improve our understanding of LSLAs. To the extent that LSLAs entail foreignisation (Zoomers, 2010), and neo-liberation (Chimhowu, 2018) of the means of production of local communities, the scholarly call in favour of case studies certainly contributes to 'grabbing the devil by the tail.' However, a more improved understanding of a particular LSLA needs to go beyond a case study of an LSLA in a community or area where LSLA deals are unfolding. Particular cases have to link to broader dynamics at higher geographic and policy levels that LSLA deals are part of.

LSLAs at community level are linked to national, regional and global SEE impacts. For example, food security, biofuels and financial investments as drivers of LSLAs, are local, national, regional and international in scope. A particular LSLA for any of these drivers will therefore somewhat be linked to national, regional or international dynamics. This link is in terms of policy drivers but also effects or impacts. Case studies in the LSLA research agenda is one approach, and as an approach, is not wrong but just insufficient (Scoones *et al.*, 2013). Case studies do not allow for a comprehensive understanding of a phenomenon that 'points to a transition towards new world political, economic, and biophysical conditions with the emergence of the BRICs and middle-income countries, global biofuels complex, and green

grabbing (Margulis *et al.*, 2013 p7).’ Case studies are therefore, limited in understanding LSLAs beyond particular land deals in a given area as the approach does not allow for an integration of LSLAs dynamics at different geographic and policy levels. The SEE impacts of the new agro-industrialisation are both far-reaching and take different forms across different landscapes, with particular class, gender, ethnic, livelihood and environmental consequences (Borras *et al.*, 2010).

Against this backdrop, we attempt in the next Section 4.4 to make a case for an LSLA conceptual framework for the post 2013 LSLA research agenda. How can evidence from case studies enrich our understanding of LSLA beyond local levels? Given the evolution of LSLAs, how does research continue to meaningfully contribute to uncovering the different dynamics of the phenomenon at different policy and corresponding geographic levels? How does future research build on what is already known? In the next section, therefore, this chapter attempts to answer these questions by proposing an LSLA conceptual framework to inspire and rationalise the use of a mix of integrated methodological approaches to enable an improved understanding of processes that underpin LSLAs at different policy and geographic level spaces and contexts.

#### **4.4 Why an LSLA conceptual framework?**

In section 4.2 we have presented challenges of the ‘quick and dirty’ research that flourished between 2007/2008 and 2012 to understand LSLAs, during the ‘making sense’ phase. Recognising the methodological and epistemological deficiencies of the ‘making sense’ phase, in Section 4.3 we have presented LSLA scholars’ support for case studies to support what we have referred to as ‘the post 2013 LSLA research

agenda' phase. In Section 4.3 we have acknowledged the contribution of case studies to generate more grounded, accurate and robust data about LSLAs as they evolve. The limits of case studies have also been pointed out. Premised on the limits of case studies, this section discusses the rationale for an LSLA conceptual framework that recognises and reflects the micro, meso and macro geographic and policy dynamics of LSLAs.

As land changes hands from local users to non-locals and or foreign players, land is commodified in sub-national, national and global markets. Case studies that reveal rich information about impacts of LSLAs hardly reflect the foreignisation, the marketisation and the *local-to-global commodification* of land at different policy and geographic levels of community land as a means of production but also source of livelihoods. Therefore, approaches do not systematically and sufficiently account for the multi-layer cascading and escalating effects of LSLAs in an integrated way. Thus, meta-analyses informed by case studies are limited in fostering an understanding of processes of LSLAs beyond community level where LSLAs unfold.

A comprehensive approach is therefore needed to account for cascading effects of policy infrastructure at different levels as well as escalating effects of LSLA impacts. The underlying assumption of this proposed framework is that land in the contemporary wave of LSLA is a global commodity that requires, as Sikor *et al.* (2013 p522) suggest, 'systems of rule at all levels of human activity — from the family to the international organization — in which the pursuit of goals through the exercise of control has transnational repercussions.' The proposed conceptual framework shows different policy and geographic levels to improve our understanding of SEE impacts that are at the centre of pro and anti-LSLA actors.



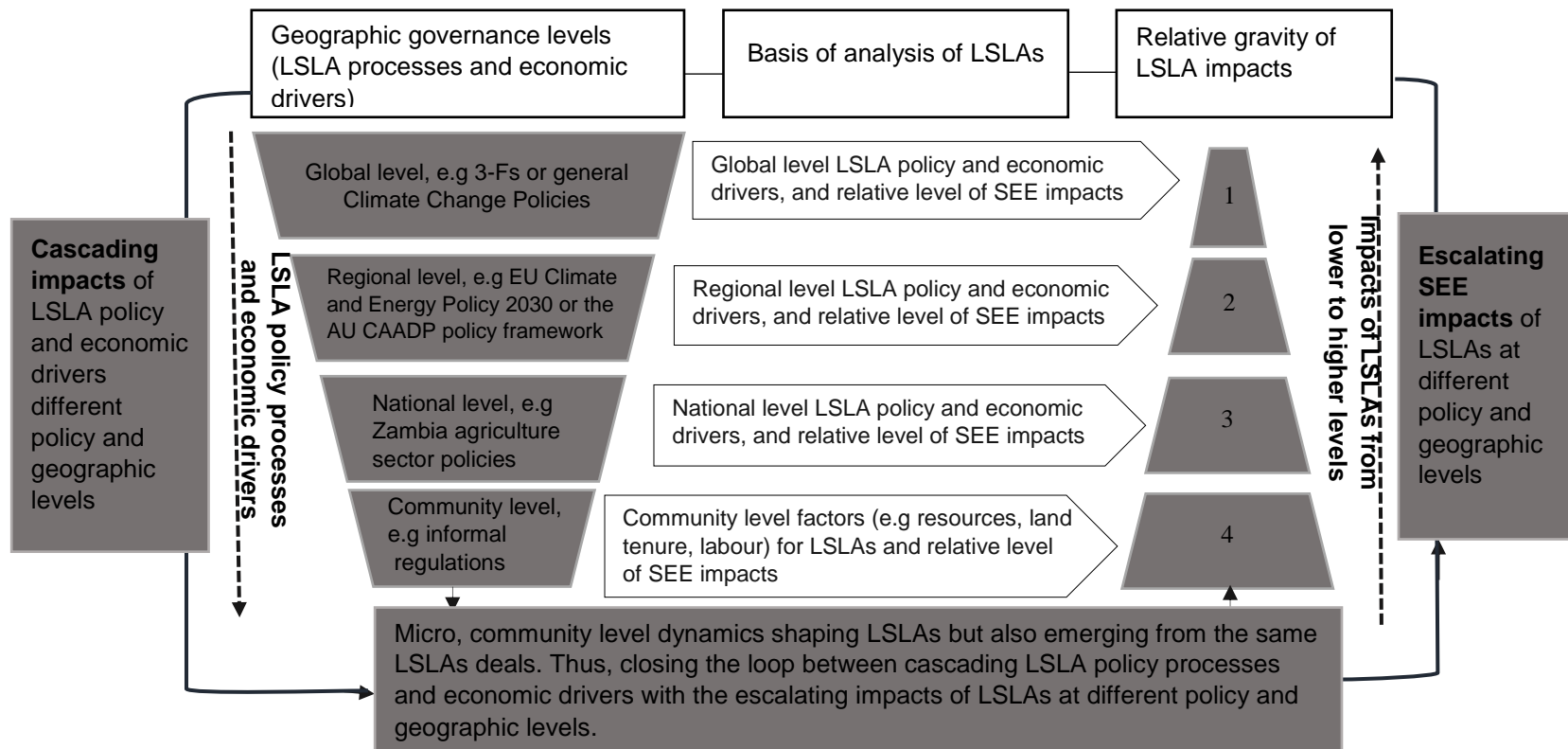
On the one hand, the framework highlights the cascading impacts of LSLA policy and economic drivers at different policy and geographic levels. The framework reflects that data availability becomes scarcer as we move from macro to lower levels. On the other hand, the framework recognises escalating LSLA impacts from community levels where LSLAs take place to higher geographic and policy levels: national (including sub-national such as district/county or provincial/state); regional; and global levels. In addition, data quality about actual LSLA impacts improves as we move from micro (where actual implementations of LSLAs happen) to macro levels. Thus, the framework recognises the critical role of evidence generated at community level to inform policy response at higher levels (shown by upward dashed arrows in **Figure 4.1**). The framework is cognisant of the fact that the relative gravity of LSLA impacts (positive or negative) will be greatest at community level, and least at the global level (indicated by numbers from 4 to 1, respectively). Finally, the framework recognises the critical role of mixed research and methodological approaches that close the loop between the left and the right components and processes, that is, the cascading drivers/causes and the escalating impacts, respectively. LSLAs in particular communities do not happen in isolation, but they are linked to policy spaces that drive them and effects and impacts that they (LSLAs) produce.

Global level factors constitute financial investments, biofuels and food security narratives, including climate change governance policy guidelines such as the Paris 1.5°C ambition to limit global warming (Hulme, 2016) or the Sustainable Development Goal on zero hunger through agriculture (Le Blanc, 2015). Regional level factors represent policies such as the EU climate policy that, among other measures, promotes the production of green power to meet its target of reducing

greenhouse emissions to at least 20% by 2020 (Böhringer *et al.*, 2009). Other regional policy drivers include the African Union Comprehensive Africa Agriculture Development Program (CAADP) (Kolavalli & Flaherty, 2010; NEPAD, 2010).

As Parties to multilateral environmental agreements, and as member states of regional blocs, countries domesticate the legally binding and voluntary agreements in their national policies. Some of these national policies are pro-investors that lead to LSLAs. Investors are business entities that are primarily looking for profits. Thus, they are likely to target areas with socio-ecological business potential for profits (Messerli *et al.*, 2014). These constitute micro, community level factors that both drive LSLAs and contribute to shaping outcomes.

Actual impacts are greatest at the community level. If the outcomes are positive, communities are better off and contribute more to the national economy. Similarly, if the outcomes are negative, the impacts are felt the most at community level. For example, if an LSLA case leads to resource scarcity at community level, this can trigger rural-urban migration, thereby increasing urban population. Competition in urban areas can lead to migration to neighbouring countries, and eventually other regions such as Europe in search of other or better means to survive. As has been reported (see Maxwell & Reuveny, 2000; Evans, 2010; Homer-Dixon, 2008; Musahara *et al.*, 2004; Ohlsson, 2000), LSLAs can lead to resource scarcity and limit living opportunities of communities that can eventually lead to migration and



**8 - Figure 4.1** Proposed conceptual approach for understanding LSLAs.

SEE represents socio-economic and environmental impacts; 3-Fs represent food security, financial investments and biofuels that are associated with the contemporary wave of LSLAs; AU is African Union; CAADP is Comprehensive Africa Agriculture Development Program; and EU represents European Union.

civil unrests. Taking this example of escalating effects of migration, evidence at community level can therefore, inform national, regional and global level policy spaces.

Building on the methodological and epistemological challenges of the 'making sense' phase and the proposal for case studies in the 'post 2013 LSLA research agenda' phase, this framework makes a case for an integration of higher levels of policy and geographic spaces that drive LSLAs but also to which repercussions reach in research efforts to understand the evolution of LSLAs. If LSLAs signal a shift in the world order as Margulis *et al.* (2013) have indicated, methodological approaches that go beyond case studies hold more promise to improve our understanding of LSLAs that are local, national, regional and global in scope. In this regard, efforts to research particular LSLAs where they are unfolding need to pay attention to the 'feedback loop' between global, regional and national level policy and geographic drivers/causes and effects/impacts and how they are linked to the cases under investigation.

The framework has applications to other phenomena that are global, regional and national in nature. The framework emphasises the importance of accounting for micro level benefits and costs of phenomena within national, regional and global dynamics of which they are part, through cause and effect. This is important because phenomena that are local, national, regional and global in scope need not be told as a single story where their multidimensionality is either ignored, misunderstood or underrepresented in the accounts

In addition, this framework has potential to shed light on unintended consequences of policy directions made at higher policy spaces and geographic levels far from where policies are actually implemented. This offers perspectives to nuance policy implementation and analysis.

Agricultural or energy policy directions to commercially produce biofuels at national or regional level, for example, are not meant to displace rural people. However, they are likely to do so. Reflecting on a particular case of displacement from biofuel production within the broader discussions of agriculture for rural development or biofuels for clean environment can inform policy change at higher levels. This is possible if there is a feedback loop as this framework proposes. The framework therefore, is relevant to answering the '*how, why, when, where and who*' questions of phenomena that have local, national, regional and global scope.

In the following Section 4.5 we attempt to apply the framework to Nansanga, an LSLA that was begun by the Zambian government that commercialised customary land in the country for agriculture.

#### **4.5 Applying the framework to LSLAs in Zambia**

To demonstrate the contribution of this framework to improving our understanding of LSLAs, and how it can be used, this section presents the application of the framework to Nansanga in Zambia. This follows from the previous section that presented the components and processes of the framework. In taking Nansanga as an example for applying the framework, Nansanga is first presented in Section 4.5.1 to set the stage for the application of the framework. The application starts with the global scenario then cascades down to regional, national and local policy and geographic levels. What is happening in Nansanga farm block can be traced in Zambia's national policies that have been domesticated in response to regional and global policy and economic drivers.

#### 4.5.1 Linking the framework to Nansanga farm block

Following the Lands Act 1995 that liberalised land market (Nolte, 2014), the Zambian government decreed the establishment of farm blocks across the country in 2002. The objectives were to commercialise agricultural land, develop rural areas, improve food security and reduce rural-urban migration (GRZ, 2005). The farm block program is one of the government of Zambia's pro-investor policies and entailed the conversion of customary land to leasehold. Modelled on contract farming, the government planned to invest significant resources in developing the farm blocks. Nansanga (about 155 000 ha), situated in central province, is the most advanced in terms of infrastructure development that include bridges, an irrigation canal, three dams and trunk roads. By 2012 Nansanga was parcelled into a core venture, commercial farms, medium size farms and smallholder farms. Title deeds were processed and given to investors who had bought farmland in the farm block.

Against the aforementioned socio-economic objectives of farm blocks, Nansanga as a case of an unfolding LSLA in Zambia, is not isolated from higher level policy and geographic spaces in terms of both drivers and impacts. Embedding Nansanga within the discussion of the proposed framework serves to strengthen the call to assess LSLAs within the wider political and economic projects that they form part of (Cotula *et al.* 2014), and improving an assessment of the interplay between local, national, regional and global dynamics (Schoneveld, 2017). This also recasts the focus from debates about numbers of hectares seized to understanding processes and impacts of the phenomenon (Oya, 2013).

Therefore, the qualitative data that was collected from Nansanga forms the basis for contextualising LSLAs at the local level and demonstrating link to higher policy and geographic levels. Evidence-building about LSLA impacts starts at community level where LSLAs happen, but to make sense of the impacts, research needs to ‘close the loop’ by understanding impacts within policy and economic drivers at higher policy and geographic spaces.

With Nansanga as the local level case of an LSLA deal, the following sections demonstrate the application of the framework in Zambia. The section brings to the fore the processes that underpin LSLAs, and how they are linked at different policy and geographic spaces and levels. The global level is first presented in Section 4.5.1.1, illustrating some multilateral environmental agreements and their associated policy processes. The regional level is then presented in Section 4.5.1.2, citing relevant policy processes and dynamics. The national level policy space is presented in Section 4.5.1.3 to show how it responds to higher policy spaces on the one hand, and how it influences local level dynamics, on the other. The local level is presented in Section 4.5.1.4

#### **4.5.1.1 Global level**

In the run up to the Convention of Parties (COP) 21 in December 2015, Parties to the United Nations Framework Convention on Climate Change (UNFCCC) needed to develop Intended Nationally Determined Contributions (INDCs) to reduce greenhouse gas emissions (WRI & UNDP, 2015). Based on national circumstances, including development priorities, Zambia committed to reducing 38,000GgCO<sub>2</sub>eq with \$35 billion

of external financing, and \$15 billion would be domestically mobilised (GRZ, 2015). Currently, Zambia is one of the 174 countries whose INDCs have already been confirmed as NDCs. In addition to the INDCs with UNFCCC, countries adopted 17 Sustainable Development Goals (SDGs) in 2015. Goal 2 is dedicated to zero hunger, and agriculture has been the proposed vehicle to end global hunger. As a Party to the UN family, Zambia is committed to this goal. Further, Zambia is also a Party to the United Nations Convention to Combat Desertification, and the United Nations Convention on Biological Diversity with policy guidelines that are linked to local community access and use of land.

#### **4.5.1.2 Regional level**

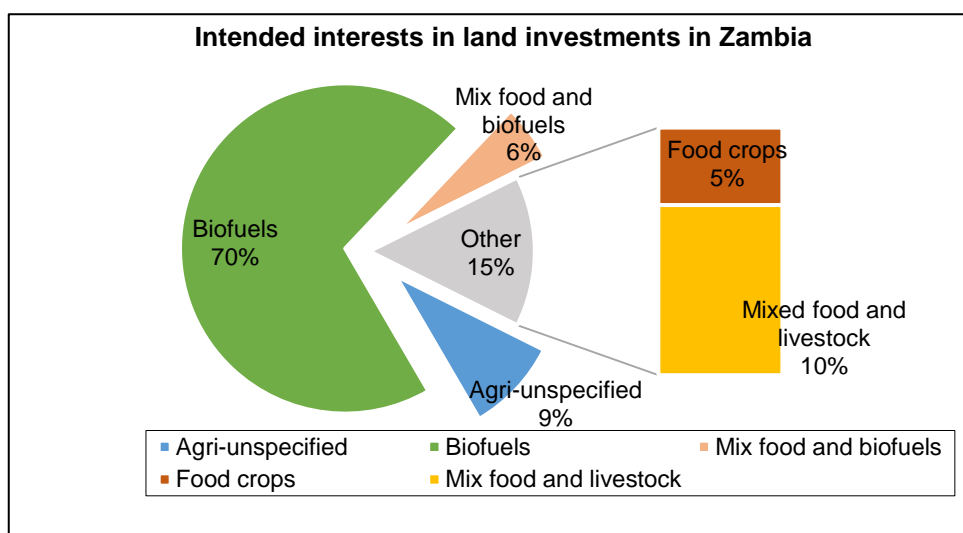
At the regional level, Zambia has bilateral ties with the EU bloc that has a climate and energy policy that supports the production of biofuels. According to the Land Matrix Data (LMD accessed in June 2018), between 2003 and 2016, companies coming from the EU bloc expressed interest in ~370 000 ha of land in Zambia to produce crops that include biofuels.

Based on LMD, **Figure 4.2** below shows that 70% of land in which investors expressed interest in Zambia concerns solely the production of biofuels; 6% a mix of food crops and biofuels; 9% unspecified agricultural crops; 10% a mix of food crops and livestock production; and 5% solely the production of food crops. Each of the land deals recorded in LMD is at least 200 ha. However, there are many more 5 - 100 ha than >200 ha land acquisitions by both foreigners and national urbanites (Matenga & Hichaambwa, 2017). It is therefore, possible that the extent of land



acquisitions for biofuel production and others is larger than what is recorded in LMD.

In addition to the EU bloc climate and energy policy, the African Union through CAADP has encouraged member countries to grow the agricultural sector by allocating 10% of national budgets so that it can contribute at least 6% to the national GDPs (Chapota & Chisanga, 2016). As a member state, Zambia subscribes to the guidelines provided in CAADP, and therefore, seeks to open more land for commercial agriculture (GRZ, 2006).



9 - Figure 4.2 Investor expressed interests in large scale land investments in Zambia.

Source: Author's creation based on Land Matrix Data, accessed June 2018

#### 4.5.1.3 National level

In response and compliance with Conventional mandates of UNFCCC, SDGs, and the AU's CAADP, Zambia has been domesticating the

international and regional policies through its own national policies. Examples of official documents with policy directions for LSLAs include the ones in Table 4.1 below. These national documents and policies are in alignment with the country's response to global environmental and developmental frameworks.

**9 - Table 4.1** Examples of Pro-LSLAs official documents in Zambia

Name of official document	Year
The Lands Act 1995	1995
Zambia Farm Block Development Plan	2005
The National Adaptation Plan of Action on Climate Change	2007
The National Policy on Environment	2007
The National Energy Policy	2008
The National Climate Change Response Strategy	2010
The National Forestry Policy	2014
Nationally Appropriate Mitigation Actions	2014
The National Agriculture Policy of 2014	2014
National Strategy for Reducing Emissions from Deforestation and Forest Degradation	2015
Second National Biodiversity Strategy and Action Plan	2015
Zambia's Intended Nationally Determined Contributions	2015
Zambia Forest Investment Plan	2017

Following the liberalisation of land markets, Zambia has been promoting pro foreign-investor policies and conditions to attract investments. These include the abolition of price controls, liberalisation of interest rates, abolition of exchange rate controls, 100% repatriation of profits, free investment in virtually all sectors of the economy, privatisation of state-owned enterprises, and trade reforms aimed at simplifying and harmonising the tariff structure (NEPAD-OECD, 2011; Zambia Development Agency, 2017). Consistently, under development outcome 4, strategy 3 of the seventh national development plan, the current government intends to promote the development and use of biomass to

diversify the energy mix (GRZ, 2017). Besides the policy enabling environment, Zambia is also endowed with natural resources to be exploited (Zambia Development Agency, 2017).

The natural resource base, climatic conditions, socio-economic environment, political stability and demographics constitute factors for LSLAs in Zambia. The World Bank (2009) estimates that 62% of the national territory is customary land, though a more recent study estimates 51-54% (Sitko & Chamberlin, 2016). More than half of the land is under customary tenure with informal rules, signaling easy access. Demographically, ~60% is rural population constituting ~33.3% of the youth between 15-35 years old (GRZ-Central Statistics Office, 2012). The youthful population presents an opportunity for cheap labour.

#### **4.5.1.4 Community level**

Nansanga is one of the 9 farm blocks in the first wave of government farm block development plan in Zambia. Planned on ~155 000 ha (GRZ, 2009), Nansanga has a mean annual temperature of 19°C (Oakland Institute, n.d.), and is situated in the agro-ecological zone III with annual rainfall of ~1 200mm. The soil taxonomy is dominantly acrisols and ferrosols, with textures ranging from loamy sand, silt clay loam, sandy clay loam to clay (details in **Chapter 3**). Luombwa is the biggest river into which smaller Ng'answa, Musangashi, Munte, Nkulumashiba and Lube rivers flow (Oakland Institute, n.d.). Situated in Senior Muchinda chiefdom, the tenure of the land was customary. This was converted to leasehold to allow for investments. The closest part of Nansanga is ~54km from Serenje, the political and commercial district centre. Agriculture is the economic mainstay of the area, with communities living

within 5km along the main trunk roads. Population was sparse before the establishment of the Nansanga, concentrated in main village centres, particularly Kabundi, Mingomba, Mutale and Kabeta. The labour force is cheap. Cultivating 0.5 ha costs only ~\$23. The daily rate is ~\$2.40/7 hours (Mingomba and Kabundi focus group discussions, Nansanga, December 2017). It is also closer to the TAZARA railway line for easy transportation of agricultural products to East Africa and beyond through Dar es Salaam, or Southern African region. In Nansanga, cereals, biofuels, livestock and many other crops can be produced.

The development of the farm block has stalled, and the developed infrastructure has collapsed. Demarcated plots of land are not developed by investors, and are overgrown with bushes. Mining of manganese also has begun on farm land. Like many other failed LSLAs in host countries (see Cotula *et al.*, 2014), Nansanga is an LSLA deal in limbo of development. Tobacco production and open pit manganese mining have emerged as new socio-economic activities. There is labour flight from the production of food crops to tobacco production and mining, threatening food security, triggering migration and localised environmental degradation (Mingomba and Kabundi focus group discussions, Nansanga, December 2017). Active labour force is moving from traditional villages to Kabundi in the south of Nansanga to work in two open pit manganese mines (Kampoko and Jack), or to work in other commercial farms outside Nansanga as casual workers. The evolution of the farm block has taken a direct direction, from the production of food crops to tobacco production and manganese mining. It can be concluded that the establishment of Nansanga has not been successful.

Manganese mines have been opened within the farm parcels initially planned for crop production to ensure food security. They have

already posed a threat to the miombo woodland. In addition, other young people are abandoning agriculture to move to Serenje town and other towns to look for alternative means to survive (M-FGD #3 & K-FGD #3, Nansanga, December 2017). Since land that is part of Nansanga program has title deeds, FGDs revealed that some community members are selling land to mine operators to expand the mining activities, confirming what Chimhowu & Woodhouse (2006) have noted that land titling can contribute to landlessness because it can be sold as a coping mechanism in times of distress. In addition, some community members are selling their trees to tobacco growers who need more fuelwood for curing tobacco. Based on FGDs, the failure to implement Nansanga to achieve the farm block program objectives (see GRZ, 2005), socio-economic impacts include rural-urban migration, abandonment of production of traditional crops and labour flight in favour of tobacco farming, casual jobs in the mines and commercial farms outside Nansanga.

From the implementation of the farm block, and the emergence of tobacco production and manganese mining, lessons can be learned to inform and shape national government policies. The Zambian government can respond in different ways: improve investment policy infrastructure that can change EU bloc company operations in the country; and or factor these lessons to reflect in the country's commitments and obligations to multilateral environmental agreements. In this way, lessons and experiences of LSLAs become part of national circumstances that influence levels of national commitments, and national policies to fulfil those commitments to investing companies, multilateral environmental agreements or development partners.

## 4.6 Conclusion

In this chapter, we aimed to propose a conceptual framework to improve our understanding of LSLAs, a framework that simultaneously accounts for cascading factors and escalating impacts of LSLAs. We have reviewed methodological and epistemological concerns regarding understanding the evolution of LSLAs in different contexts. We have attempted to apply the framework to the Zambian farm block program, a concrete case of an LSLA that is embedded in the government development policy. We have proposed that a methodological approach that builds on the proposed framework will improve the understanding of LSLAs. It will link cascading impacts of drivers of LSLAs at different policy levels (from macro, higher global level to micro, lower community level) to escalating effects and impacts of LSLAs at different levels (from micro, lower community level to macro, higher global level). The framework is built on the understanding that every case of LSLA at community level is associated with cascading effects of policy drivers at higher levels. Similarly, its impacts at community level create escalating impacts to higher levels.

The framework makes an argument for an approach to studying LSLAs that focuses on micro level factors without losing focus on the macro level factors, and vice versa. The framework puts into perspective that immediate impacts of LSLAs happen miles away from policy spaces that promote LSLAs. Margulis *et al.* (2013) note that between global and local spaces is a continuum of pro and anti-LSLA actors. These actors experience cascading and escalating implications differently depending primarily on their position from the policy space (cascading impacts) and community level where implications of LSLA are immediate (escalating

impacts). The framework fosters an approach that acknowledges that understanding community level implications of LSLAs can support change national, regional and global policy spaces, just like these policy spaces can change local level implications. When these factors at different policy and geographic levels are understood together rather than in isolation, the cause-effect relationship can be established that can improve our understanding of LSLAs. This can help improve policy response and the modus operandi of implementing LSLAs to reduce loss of access to land and natural resources often associated with LSLAs. Policy response can be improved to reduce conflictual livelihood contexts, increased intracommunity inequality, contested compensation, ecosystem degradation, adverse labour transformation, maladaptive livelihood strategies, food security decline, and erosion of social capital.

Accounting for global to community level factors, and the community to global level effects, the framework calls for methodological approaches that go beyond understanding LSLAs in isolation or the binary geopolitical lens of 'resource poor, financial haves' vs 'resource rich, financial have-nots.' In other words, understanding the global drivers of LSLAs such as biofuels, food security and financial investment is as important as understanding the micro socio-economic, cultural and environmental dynamics in communities where LSLAs actually happen. Ignoring, underrepresenting or misrepresenting the interplay of drivers and effects at different policy and geographic levels undermines the completeness and quality of narratives about LSLAs. Doing so prompts and reinforces what Oya (2013 p511) terms as 'anecdotal or unsystematic evidence' about LSLAs. In addition, it also does not offer evidence to inform and guide policy responses at national, regional or global levels. This framework does not pretend to be a panacea for the methodological and

epistemological challenges of researching LSLAs. What it most importantly points to is the danger of researching cases of LSLAs in isolation from their drivers/causes and effects/impacts at different policy and geographic levels. In other words, it is good to do a case study, but it is even better when a case study is informed by higher levels of policy and geographic spaces that drive LSLAs but also to which repercussions reach. This improves the quality of evidence and facilitates policy responses that are informed by drivers and effects at different levels. Conceptually and theoretically, research approaches need to account for the multidimensionality of LSLAs.

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## 5 The Role of Formal and Informal Institutions in (re)Shaping Large Scale Land Acquisitions Outcomes in Zambia: Lessons From Nansanga Farm Block

Andrew Chilombo, Dan van der Horst and Janet Fisher  
School of GeoSciences, University of Edinburgh

**Abstract:** Empirical research into large scale land acquisitions (LSLAs) has focused on customary property regimes, the role of the state, elite capture and power imbalances, and land alienation processes. However, less attention has been paid to the interplay between domestic policy processes and institutional dynamics and LSLA outcomes. As a result, scholarly debate continues about the role of institutional policies and frameworks in either attracting investments or driving them away in general, and how LSLA outcomes are (re)shaped, in particular. Contributing to this debate, this chapter aims at understanding how land governance in Zambia interplays with LSLA deals and LSLA outcomes by looking at the role of formal and informal institutions. The study focuses on Nansanga farm block that is part of the long-standing agricultural policy to establish farm blocks across Zambia, and is in *limbo of development*. By using this farm block, we seek to understand the LSLA-policy interplay within a concrete LSLA deal. The analysis draws on a sample of eight policy documents, key informant interviews among community members within Nansanga, and government officials, investors, and civil society organisations. Nansanga provided a concrete case to understand the process and outcomes of an LSLA deal, and interviews with key informants afforded a research opportunity to more comprehensively understand LSLA governance beyond policy prescriptions. Overall, the LSLA-policy interplay is plagued with national

economic and institutional challenges linked to national party politics. Our evidence suggests that agriculture as a rural area development strategy in Zambia needs to be reconsidered, taking into account the (in)ability and (lack of) political will of Zambian governments to successfully carry through agricultural programs in which they invest significant amounts of public funds at planning stages. First, our results reveal that the level of institutional frameworks and policies that promote LSLA deals is not matched by an equivalent level of LSLA management and governance structures. Second, party politics meddles in national land governance system leading to corruption, underfunding of the agriculture sector, overriding of key decisions by government institutions with legal mandate, and *cadreism*, defined as an unruly and unlawful yet tolerated behaviour by political party sympathisers, particularly the unemployed youth. Third, traditional chiefs, local councils and Commissioner of Lands represent the multilevel governance mechanisms of land governance in Zambia. Fourth, we found eight factors that are policy thrusts for LSLA deals in Zambia. These are: rural development; commercialisation of the agriculture sector; food security; rural poverty reduction; Zambia's natural resource endowment; stable policy and political environment; socio-economic and demographic factors; and minimising rural-urban migration.

**Author contributions:** With input from DvdH, AC designed the research and carried it out. AC wrote the manuscript, and DvdH and JF reviewed it and suggested improvements. An edited version of this chapter is intended for submission to the *Journal of Development Studies*.

## 5.1 Introduction

Interest in commercial farmland, particularly in Africa has surged in the past decade (Matenga & Hichaambwa, 2017), and host governments are cited as accomplices in the land deals through policy incentives that favour investors (German *et al.*, 2011). In many African countries, including Angola (Assuncao & Tomas, 2013); Tanzania (Mushi & Ngaruko, 2015); Mozambique (Deininger *et al.*, 2015); Ghana (Yaro *et al.*, 2017); Kenya (Hakizimana *et al.*, 2017); and Zambia (Matenga & Hichaambwa, 2017), policies and state institutions have been created to attract large scale land acquisitions (LSLAs) for rural development, job creation and food security.

The socio-economic and environmental footprints of LSLAs have received academic attention, and have lately gained importance in development policy. The seven 'Principles for Responsible Agricultural Investment that Respect Rights, Livelihood and Resources' proposed by the Food and Agriculture Organisation of the United Nations (FAO), the International Fund for Agricultural Development (IFAD), the United Nations Conference on Trade and Development (UNCTAD), and the World Bank Group (De Schutter, 2011) and the Guiding Principles On Large Scale Land Based Investments In Africa of the African Union, African Development Bank and the United Nations Commission for Africa (African Union *et al.*, 2014) are examples of the development policy momentum that LSLA deals have galvanised. These have fed into a scholarly debate on the evolution and functioning of global land governance systems (Schoneveld, 2017).

LSLAs are multidimensional and complex operations that are (re)shaped by diverse biophysical, socio-cultural and institutional policy

landscapes in which they unfold. These landscapes are important to understand and how they sustain LSLAs outcomes (Teklemariam *et al.*, 2015). Governments facilitate policy processes for LSLAs, including the exercise of sovereignty and authority over their territory and enforcement of compliance mechanism to ensure capital gains from LSLAs (Borras *et al.*, 2012). However, the precise role of governments in shaping the LSLA deals is still a matter of debate.

According to Schoneveld (2011), governance and availability of agro-ecologically suitable land are not correlated with LSLAs in sub-Saharan Africa. That is, governance and land availability are not the most important factors that make a host country attractive to land-based investors. Rather, what is more defining is the level of institutional support for and incentives to investors (Schoneveld, 2011). Manda *et al.* (2019) note that LSLAs, their development and eventual success depend on the competencies of state institutions.

Conventional wisdom might suggest that investors seek countries with political stability and strong institutional and policy environments to secure investments. According to Deininger & Byerlee (2012 p705), 'large scale farmland investment is positively associated with weak land governance and failure to protect traditional land rights.' This suggests that investors do not always target countries with strong institutions and policies. Lay & Nolte (2017) also note that FDI through LSLA flow from more affluent nations with higher populations and relatively good institutional quality towards less affluent with lower populations and lower institutional quality ones. De Schutter (2011) suggests that host countries address land governance gap to attract land based investments.

In light of these developments, scholarly debate continues about the role of institutional policies and frameworks in attracting investments

(taken advantage of by corporate actors) or drive away investment (fear of investment insecurity) in general, and how domestic policies (re)shape LSLA outcomes in host countries in particular (see Wolford *et al.*, 2013 for a global assessment of LSLAs, and how levels of LSLAs in different host countries are counterintuitive to national level policy and governance records).

Schoneveld (2017 p121) notes that as scholarly debate continues about the role of institutions and policies in LSLA deals, 'the interplay between domestic institutional dynamics and agricultural investment inflows is yet to be comprehensively assessed.' In recent years, studies have been carried out to understand legal status of customary property regimes and state discourse ( e.g Nolte, 2014), the role of domestic elites and power imbalances (see German *et al.*, 2013; Herrmann, 2017; Sitko & Jayne, 2014a), the nature of local resistance (see Baird, 2017; Hall *et al.*, 2015) and the process of alienation of local resources (see Chimhowu, 2018; German *et al.*, 2011; Zoomers, 2010). Adding to this emergent body of literature, this Chapter aims to develop an understanding of how land governance in Zambia interplays with LSLA deals and LSLA outcomes. The study focuses on Nansanga farm block, an LSLA project which was actively supported by the Zambian government but which has ground to a halt. By using this farm block, we seek to understand the LSLA-policy interplay within a concrete LSLA deal in Zambia.

To achieve this aim, the chapter assesses Zambia's LSLA policy landscape to contribute to LSLA debates on the interplay between policy and institutional frameworks and LSLAs and their outcomes on the ground. At the national level in Zambia, Nolte (2014) uses interviews to reveal poor land governance linked to exclusion of local land users by

state and business actors. Manda *et al.*, (2019 p9) use interviews and document analysis and link poor LSLA governance in Zambia to a 'deficit in inter-sectoral cooperation and coordination.' These important studies are however silent on the underlying causes of this poor governance of LSLA, and what factors account for positive and negative outcomes of LSLA deals for different groups at both national and community level.

This chapter is structured as follows: we first present the investment context and the history of LSLAs in Zambia in Section 5.2. Second, we present the methodology in Section 5.3, and results on land acquisition in Zambia and policy drivers are presented in Section 5.4. Third, we discuss land acquisition in Zambia and the orientation and implementation of land related policies in light of agricultural investments in Section 5.5. In this section we also relate the findings to the multi-level governance of land in Zambia before concluding in Section 5.6.

## **5.2 A brief review of large scale land acquisitions in Zambia**

Zambia has high potential for agriculture, and counted among the DR Congo, Mozambique and Nigeria where 52% of arable land in Africa is concentrated (Deininger, 2011). After independence in 1964, the first Zambian republican government sought economic diversification through employment creation; removal of regional and sectoral inequalities; sustainable internal and external balance; and provision of social facilities as policy priorities to be achieved through mining and agriculture (Chiwele, 1999). Subsequent General Republic of Zambian governments (henceforth GRZ) have continued to promote policy and institutional changes to improve the agriculture sector (Matenga & Hichaambwa, 2017) to reduce economic reliance on the mining sector (GRZ, 2017).

Policy reforms have been an attempt to create a private sector-led economy (Sitko & Chamberlin, 2016). These reforms include the abolition of price controls, liberalisation of interest rates, abolition of exchange rate controls, 100% repatriation of profits, private sector investment in virtually all sectors of the economy, privatisation of state-owned enterprises, and trade reforms aimed at simplifying the tariff structure (NEPAD-OECD, 2011; Zambia Development Agency, 2017). In the agriculture sector, GRZ claims that these investment incentives hold potential to spur a shift from low-productivity, subsistence farming to commercial agriculture that leads to national economic diversification (GRZ, 2013).

Zambia has an estimated 68% of land available for cropland expansion (Jayne *et al.*, 2014). With a low population density and high proportion of small scale family farms, Zambia's commercial agricultural expansion is largely directed towards customary land that still accounts for 62% of the national territory (World Bank, 2009). To attract investors, Zambia is advertised as a country with untapped natural resources, good climatic conditions, viable socio-economic environment, political stability and demographics that are attractive to investors (Zambia Development Agency, 2017).

Building on these characteristics, and the Lands Act 1995 that created land markets, GRZ decreed in parliament the establishment of 9 farm blocks on customary land in 2002. The objectives were to commercialise agricultural land for economic diversification and growth, to enhance food security and to open up undeveloped rural areas, reduce poverty and minimise rural-rural migration (GRZ, 2005). **Table 5.1** shows the level of customary land converted through GRZ's 2002 decree to establish farm blocks under the New Deal government.

**10 - Table 5.1** Farm blocks as decreed by GRZ in 2002

Farm block	Ha	Province	Comments
Nansanga	155 000	Central	Developed infrastructure has collapsed - dams and irrigation canal. Zambia Correctional Service is farming in the area. There are 2 manganese open pit mines, and tobacco out-grower production.
Kalumwange	100 000	Western	-
Luena	100 000	Luapula	Sunbird Bioenergy Africa and Nava Bharat Companies setting up an integrated sugarcane estate, and a biofuel plant. Some access roads still incomplete.
Manshya	147 750	Northern	Feasibility studies have been undertaken, and 350 small, emergent and medium scale farms have been demarcated.
Solwezi	100 000	North-Western	-
Simango	100 000	Southern	Soil fertility and socio-economic surveys being done.
Lufwanyama	100 000	Copperbelt	Feasibility studies and EIA have been conducted. Investors have been identified. The farm block has been allocated funds in the 2018 national budget and phase 1.
Chongwe	65,000	Lusaka	-
Mwase-	100 000	Eastern	-
Mphangwe			

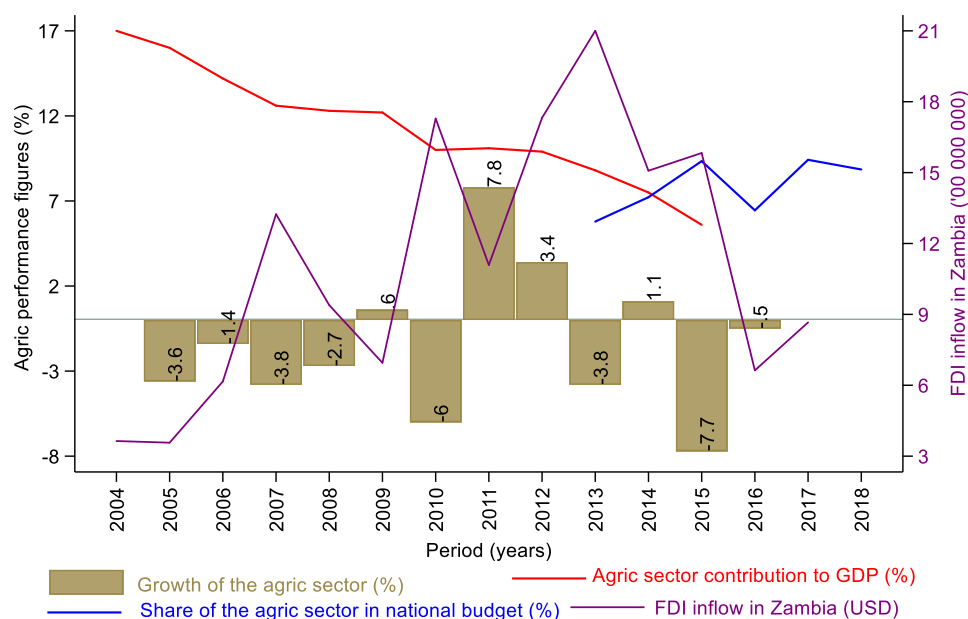
Source: GRZ (2005), Samboko *et al.* (2017) and field data (December 2017).

This happened when the Movement for Multiparty Democracy (MMD) was the Party in power (1991 - 2011), under the leadership of the late Patrick Levy Mwanawasa who led Zambia from 2002 until his demise in 2008. He called his government 'New Deal.' Strengthening the agriculture sector to replace mining as the central focus of productive activity was one of the pillars of economic policies of the New Deal government (Cherry, 2002). According to Ng'oma (2006 p9), Mwanawasa's New Deal meant 'ensuring food security, by providing affordable fertilizer to small-scale farmers, making concessionary financing to commercial farmers as a way of encouraging large-scale investment in the sector, establishing a crop marketing institution, and reducing taxes on diesel and electricity to make them affordable to farmers.' The New Deal government announced



drastic measures that included \$50 million budget allocation to the agriculture sector (3 times higher than the year before), excise duty was cut on diesel and electricity, subsidies for fertilisers were announced, and the Nitrogen Chemicals of Zambia was bailed out so that the company could start producing fertilisers (Cherry, 2002).

Despite policy reforms, according to data from Chapota & Chisanga (2016), the agriculture sector contribution to GDP has consistently been decreasing, from 17% in 2004 to 5.6 % in 2015.



**10 - Figure 5.1** Performance of Zambia’s agriculture sector Contribution to GDP (red), growth of the sector (brown bars), share of agriculture sector in national budget (blue) and FDI net inflows (purple) between 2004 and 2017. Author’s creation based on various data sources as quoted in Chapota & Chisanga (2016) and World Bank Data <https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD?locations=ZM> (accessed August 6, 2018).

Growth of the sector has been in the negative for 8 of those 12 years. Budgetary allocation and total budget share have nominally risen from 1.9 billion Zambian Kwacha (ZMK) with budget share of 5.8% (2013) to

6.3 billion ZMK with a budget share of 8.9% (2018). **Figure 5.1** above highlights dwindling agriculture sector contribution to GDP, and erratic FDI inflows and growth of the agriculture sector despite changes to the policy environment, and socio-economic biophysical characteristics touted to attract investments in the country. The graph also suggests there is no relationship between FDI inflow and the growth of the agriculture sector in the country. Despite this dismal performance of the agriculture sector, according to Land Matrix database (LMD)<sup>7</sup>, LSLAs in Zambia have been on the rise. LMD reports on LSLAs of least 200 ha per deal. However, Matenga & Hichaambwa (2017) note that there are actually more 5-100 ha individual land deals by both domestic and foreign investors in Zambia for actual investments or speculative reasons (see Malambo, 2014; Matenga & Hichaambwa, 2017; Sitko *et al.*, 2014; Sitko & Jayne, 2014).

According to LMD, 8 LSLA-type investors in Zambia can be identified: African companies; Asian companies; Zambian companies; European companies; North American companies; and joint ventures of African and South American companies and Zambia and other foreign companies. Between 2003 and 2016 European companies concluded the highest land deals in Zambia (~370 000 ha), and joint ventures between African and South American companies, the least (~2 000 ha).

**Figure 5.2** shows the map where investors expressed interests in LSLAs between 2003 and 2016, citing various reasons including uniquely for food crops (FC), biofuels, livestock, mining, industrial development, real estate or a mix of these. In some instances, the intentions were not

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<sup>7</sup> Land Matrix is a global and independent land monitoring initiative that facilitates an open development community of citizens, researchers, policy-makers and technology specialists to promote transparency and accountability in decisions over land and investment <https://landmatrix.org/en/> (Accessed on June 12, 2018).



LSLAs are near supportive infrastructure (Messerli *et al.*, 2014). **Figure 5.2** (above) also shows the origin of investors and estimated ha in which they expressed interest.

Given this level of LSLAs as reported by LMD, the size of customary land continues to shrink, amplifying its scarcity and competition for it as population rises in Zambia (Jayne *et al.*, 2014). At independence, customary land stood at 94%; and state land at 6%. In 2009 the World Bank (2009) estimated customary land to be 62% of national territory, and in 2016, Sitko & Chamberlin (2016) estimated it to be 51-54%, less than the estimated 68% deemed suitable for cropland expansion (Jayne *et al.*, 2014).

### 5.3 Methodology

To understand how land governance in Zambia interplays with LSLA deals and LSLA outcomes, the analysis draws on a sample of 8 policy documents in Zambia. It also draws on 12 key informant interviews within Nansanga, and 17 outside Nansanga with government department officials, investors, development practitioners, researchers and civil society organisations, and 8 focus group discussions (4 in Mingomba area and 4 in Kabundi area, north and south of Nansanga, respectively).

**Table 5.2** below presents the categories of respondents and how they have been coded in this chapter. The respondents have been anonymised. In this regard, the coding starts with an identity code, the number, the place of the interview and the date. For example, an interview in March 2018 with number 4 key informant in Kabundi, will be written as follows: K-KII # 4, Nansanga, March 2018. A detailed description of these respondents has been given in Chapter 2.

**11 - Table 5.2** Summary of categories of respondents

No.	Identity Code	Respondent
1.	Mm-KII	Key informant mining company foreman
2.	TF-KII	Key informant tobacco farmer
3.	LT-KII	Key informant tobacco leaf company employee
4.	M-FGD	Focus group interviews in Mingomba
5.	M-KII	Key informant interview in Mingomba
6.	K-FGD	Focus group interview in Kabundi
7.	K-KII	Key informant interview in Kabundi
8.	C-KII	Civil society key informant interview in Lusaka
9.	G-KII	Government worker key informant interview in Lusaka
10.	Qg-KII	Quasi government worker key informant interview in Lusaka
11.	Dp-KII	Development practitioner key informant interview in Lusaka
12.	I-KII	Farmer developing their farm in Nansanga as an investor

Community members were asked about local institutions and the establishment of Nansanga, including their perceptions of the quality of life, access to resources, knowledge and technology transfer, job opportunities and risks. With support from the *Sulutanis* (village heads) and *Chilolos* (Chief's advisors), key informants from within Nansanga were identified through snowballing on the basis that they participated in the establishment of the farm block as meeting attendees, casual workers or overseers. Outside Nansanga, the Ministry of Agriculture was first approached and interviewed. The researcher was then referred to the Ministry of Lands. Snowballing went on till key informants were identified and interviewed. Data saturation guided the number of key informants that were interviewed. The policy documents were sampled based on key informants' reference to them, suggesting they were frequently the basis for government thrust in rationalising and promoting LSLAs.

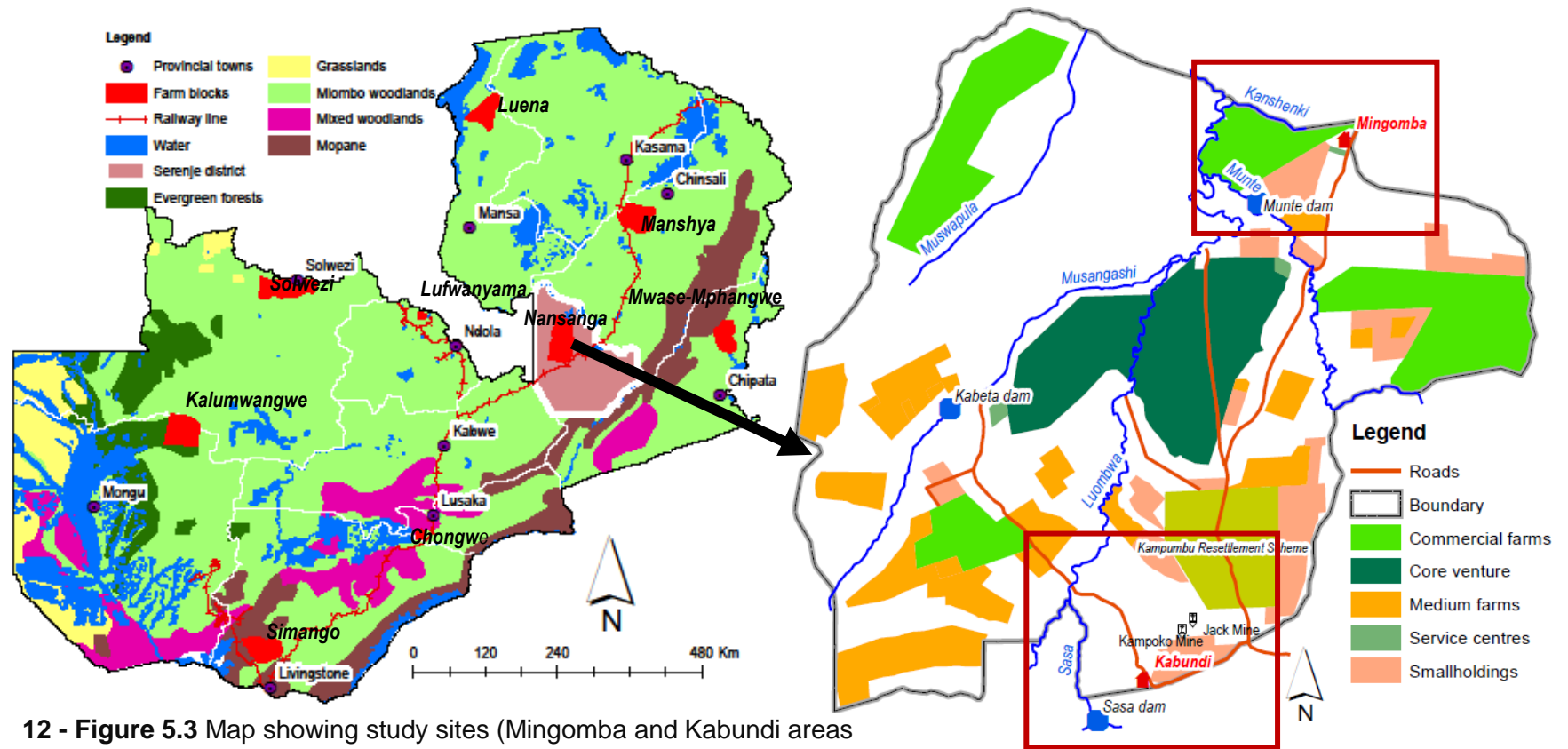
Nansanga provided a concrete case to understand the process and outcomes of an LSLA deal embedded in a government policy, and interviews with key informers afforded a research opportunity to more comprehensively understand LSLA governance in practice beyond policy

prescriptions. Therefore, the three-way approach (policy documents, case study and interviews) enabled a deeper and broader understanding of how land governance in Zambia interplays with LSLA deals and LSLA outcomes, linking the national and community level LSLA dynamics.

For data analysis, content analysis and coding of emerging themes was done in Nvivo Pro 11 software, and Stata/IC 13.0 and ArcGis 10.1 were used for graphing and making maps, respectively.

### **5.3.1 Case study – Mingomba and Kabundi community areas in Nansanga farm block**

This study was carried out in Nansanga. The area falls under the traditional authority of the Senior Chief Muchinda of the Lala people. Two out of three community areas were selected: Mingomba in the north and Kabundi in the south (map in **Figure 5.3**). They were selected based on the level of infrastructure development, population concentration and accessibility. Headed by a *Chilolo*, community members in Mingomba are peasant farmers. The community area has 650 registered households, ~3 900 people, and is served by Mapepala clinic, ~ 20km away in another chiefdom and district. The main infrastructural investments in the area were funded by the Zambian Government's Nansanga program, and were completed in 2009 - 2010. These include a trunk road, Munte dam (6 000 000m<sup>3</sup> capacity that has already collapsed) and a bridge on Munte river that gets submerged after a prolonged downpour. There are households with threats of displacement between Bwande and Munte river (case was in court at the time of the fieldwork), and households that are still living on land that was designated as a service centre.



12 - Figure 5.3 Map showing study sites (Mingomba and Kabundi areas)

Commercial farms were strategically allocated near major rivers. On the left is Zambia's dominant vegetation cover where farm blocks have been planned.

Source: Author's creation based on field data (2017), GRZ (2005), Ryan *et al.* (2016) and data from <http://www.diva-gis.org/qdata> (accessed September 5, 2018).

Headed also by a *Chilolo*, Kabundi community area has ~465 registered households, ~2 790 people. The area is served by Kabundi clinic. There is a main gravel paved trunk road, a dam on Sasa river (10 000 000m<sup>3</sup> capacity and 5 km irrigation canal that have both already collapsed), and Luombwa bridge. Contrary to the farm block plan, two manganese open pit mines were started, attracting urbanites and internationals to the area. Urbanites bring commodities such as clothes and cooking utensils to sell. Internationals are mostly Tanzanians. They are truck drivers who come to collect manganese. For every single trip, they spend about 1-2 weeks in Nansanga as they await their trucks to be loaded. They employ locals to cook for them, and are associated with promiscuity in the area. There are also other high ranking officers who have offices at the mines to coordinate the mining operations. Many community members work in these mines while others work for Silverlands, a commercial agricultural enterprise in the neighbouring Luombwa farm block.

In Kabundi community area, there is also Kampumbu resettlement scheme, an enclave within the farm block that has socio-economic and cultural spill-overs to community members. The Tongas who were reportedly the majority in the scheme have different cultural values from those of the Lalas in Nansanga. Some of the Tongas in the scheme are retirees, therefore more literate and financially wealthier. They are also pastoralists who use oxen to farm maize as a cash crop, unlike Lalas in Nansanga who, until the 1990s were practising shifting cultivation to mainly grow sorghum and millet (K-KII #3, Nansanga, November 2017). Some Lalas work for Tongas in the scheme. In both Mingomba and Kabundi, more affluent community members grow tobacco to sell to a tobacco leaf company, Tombwe Processing Limited.



## 5.4 Results

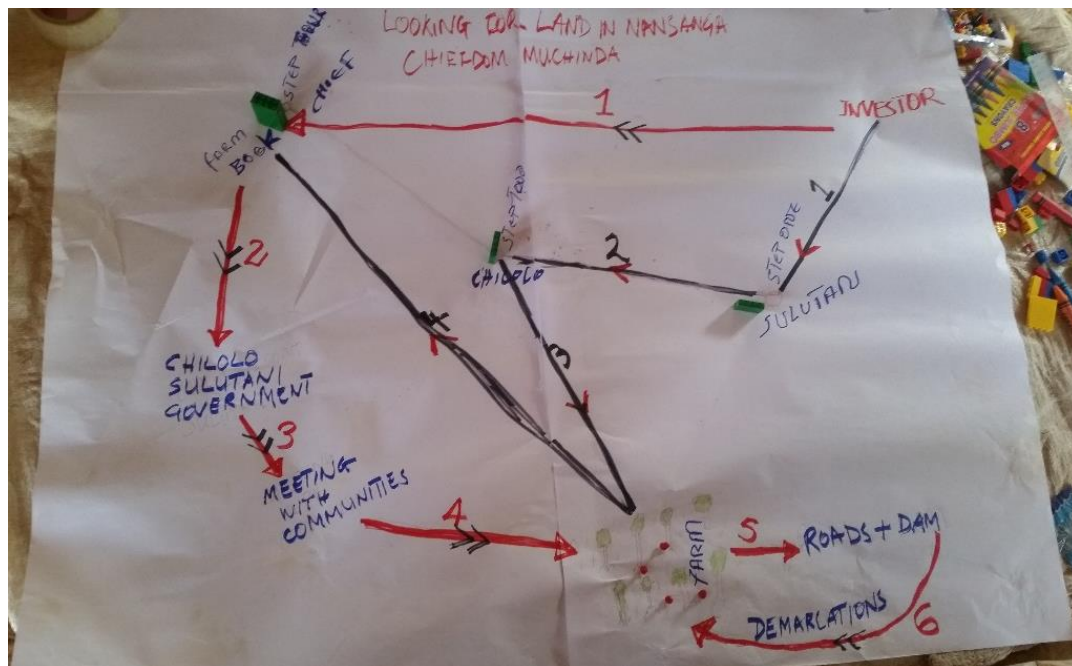
To understand the policy-LSLA interplay in Zambia, we present our findings in this section regarding the policy environment within which LSLAs unfold, but also to highlight policy elements that shape LSLA outcomes. First, results about processes involved in acquiring customary land and state land are presented in Section 5.4.1, highlighting the bifurcated land tenure in Zambia. This section also includes results regarding local land governance structures and institutions, and how the process of acquiring land to establish Nansanga differed from traditional practice. In this section, we also present how processes to acquire land differ between customary and state land, and how these processes are perceived by stakeholders. Finally, we present policy drivers of LSLAs in Zambia in Section 5.4.2.

### 5.4.1 Land acquisition in Zambia

Zambia has a bifurcated land tenure system: customary land under traditional authorities, and state land managed by the Commissioner of Lands at the Ministry of Lands on behalf of the President. These tenurial arrangements co-exist with different management structures. **Figure 5.4** below is the community drawing of their knowledge of the process of acquiring land within the chiefdom Muchinda. This is indicated by the black marker with steps 1 - 4: passing through the *Sulutani* (step 1); the *Chilolo* (step 2); verification of farm land availability (step 3); and then recommendation to the Senior Chief (step 4). If approved, a farm book is issued during the official annual visit of the Senior Chief. The three green pillars with different heights indicate the communities' understanding of

power among the *Sulutanis* (lowest), *Chilolos* (medium) and the Senior Chief (highest) in land administration and governance.

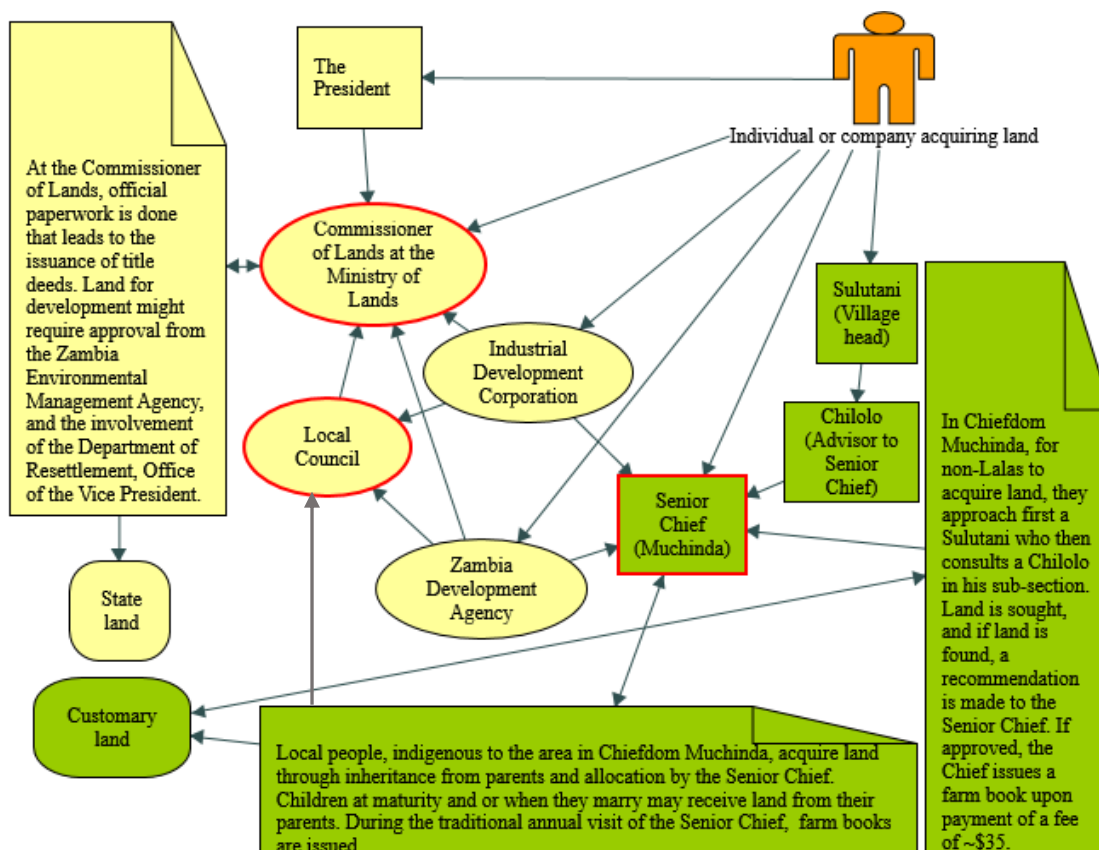
The red marker with steps 1 - 6 and double arrows indicates how land was acquired to establish Nansanga. The government as land broker, went directly to the Senior Chief (step1). The *Sulutanis* and *Chilolos* were told about the visit of the government (step2). Two rounds of meetings were held with communities: to tell them to choose best places to relocate to; and second, to be informed about the farm block program (step3). The government was showed the land that they could have (step4). Having obtained this information about the land, the government began infrastructure development (step5); and finally demarcated the land into the core venture, commercial farms, medium farms and smallholder farms (step6). Step 7 (not shown) was the allocation of demarcated land to successful applicants after processing their title deeds. This was done by the government that had taken over control of the land from local leadership.



**13 - Figure 5.4** Community understanding of local land governance structures and the land acquisition process of customary land in Nansanga. The black route is the traditional way to acquire land. The red route is what was taken when the Zambian government acquired land in Nansanga (M-FGD #3, Nansanga, April 2018). (Picture by A.Chilombo, Nansanga, 2018).

A combination of FGDs and KIs within Nansanga and KIs outside the farm block revealed (combined) processes involved in acquiring state and customary land in Zambia. **Figure 5.5** below summarises key processes and stages involved. In the figure, the green shapes represent customary tenure (and informal regulations), and the yellow represent state tenure (and formal regulations). There are 7 entry points to acquiring land: 2 directly through local traditional authorities (Senior Chief and *Sulutani*); and 5 through formal institutions. These are the President, the Commissioner of Lands office, the Industrial Development Corporation, Zambia Development Agency and the Local Council. The

shapes with red outer lines represent nodes of perceived corruption in the land acquisition process(C-KII #3, Lusaka, December 2017). These same nodes show the highest number of contacts with business entities or individuals in the acquisition processes. The perception of corruption is highest at these nodes, implying that the more the interactions, the higher the possibility of corruption happening.



14 - Figure 5.5 Process of land acquisition in Zambia.

Formal (state; yellow) and informal (customary; green) land acquisition processes in Zambia. In the figure, ellipses are institutions whilst squares represent individuals in the process.

Land acquisitions for speculative reason happens. 'Land is purchased, held on to and then sold later at higher prices when land market forces

increase its value (C-KII, Lusaka, April 2018).’ Lack of farm development in Nansanga by plot owners has also partly been attributed to land speculation. ‘Look, even if the government has not completed the farm block, people have land in their names, and they can cultivate it. People will resell these plots later, you will see (I-KII, Nansanga, November 2017).’

### 5.4.3 LSLA policy drivers in Zambia

To understand how land governance in Zambia interplays with LSLA deals and LSLA outcomes, 8 official documents were analysed for drivers of LSLAs and to draw insights into the institutional arrangements. The selection of these documents for analysis was informed by KIIIs as they were frequently referred to. These documents are provided in **Table 5.3**.

**12 - Table 5.3** Analysed documents

Policy/Official document	Year
The Farm Block Development Plan (FBDP)	2005
Zambia Vision 2030 (ZV2030)	2006
Zambia National Water Policy (ZNWP)	2010
Zambia National Agricultural Investment Policy (ZNAIP)	2014
The National Resettlement Policy (NRP)	2016
Zambia Second National Agricultural Policy (ZNAP)	2016
Zambia 7 <sup>th</sup> National Development Plan (Z7NDP)	2017
Zambia Investment Guide (ZIG)	2017

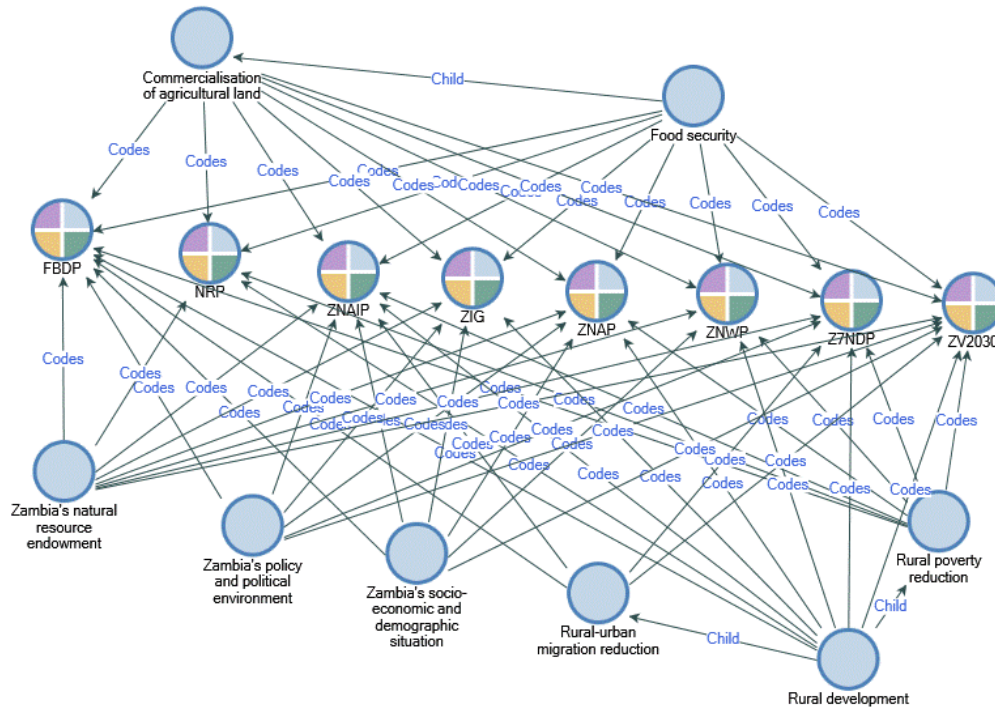
Content analysis was done on the official documents in Table 5.3 above. The process of content analysis involved three broad stages: data preparation; data organisation and reporting of results (Elo & Kyngäs, 2008). In between these stages were the identification of emerging themes, grouping and coding of identified themes based on their relevance to the research objectives of this study (Elo & Kyngäs, 2008).

This allowed for the measurement of the frequency of emerging themes of interest to the study (Vaismoradi *et al.*, 2013). This process was iterative to ensure representation of the key elements of the current study; an important aspect for benchmarking reproducibility and reliability in content analysis (Krippendorff, 2004), as one conducts an exploratory study in an area where not much is known but common issues are being mentioned (Vaismoradi *et al.*, 2013).

Content analysis revealed eight themes as drivers of LSLAs: agriculture for rural development; commercialisation of agricultural land; improving food security; Zambia's natural resource untapped endowment; favourable agricultural investment policy and political environment; conducive national socio-economic and demographic situation (that is, Zambia is poor and needs development, and has active population to provide labour); and agriculture to reduce rural-urban migration. Some of these themes were echoed as well during key informant interviews (government departments, investors, development practitioners, researchers and civil society organisations). This served to triangulate data sources about policy drivers of LSLAs in Zambia.

Coding the themes by their presence in each of the official documents, commercialisation of agricultural land was identified as a child node of food security, as were rural-urban migration reduction and rural poverty reduction of rural development. **Figure 5.6** below shows how emerged themes were coded to the policy documents. The number of arrows in Figure 5.6 reflects appearance of the themes in the official documents. Thus, commercialisation of agricultural land with 8 arrows emerging from it is a more consistent priority focus than rural-urban migration reduction that has only 4 arrows. The implementation of policies is anchored in different departments. The complex network of drivers in

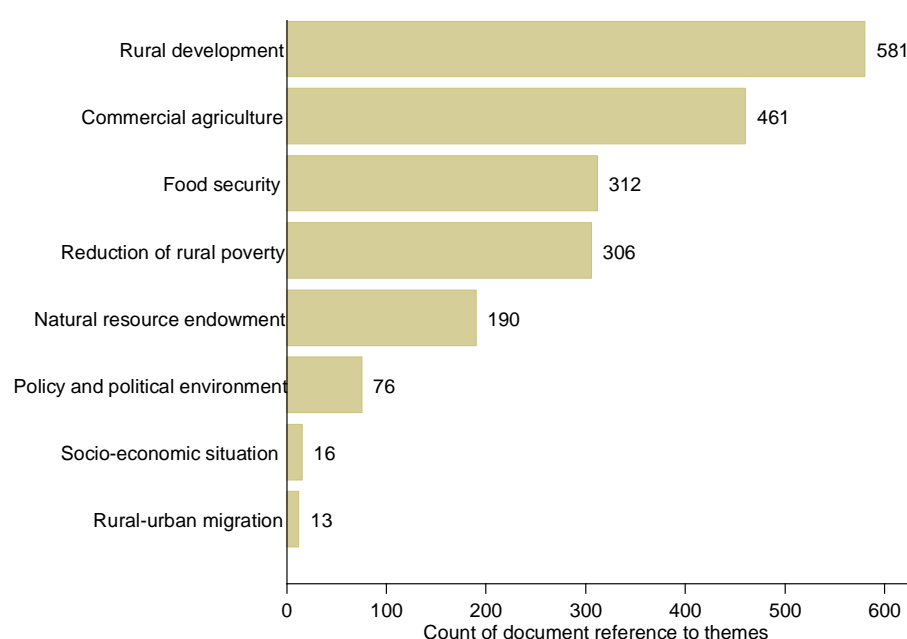
the official documents suggests the multiplicity of government efforts through different ministerial departments to achieve LSLAs.



15 - Figure 5.6 Policy references to themes as drivers of LSLAs in Zambia.

At the policy level, **Figure 5.7** below breaks down the number of times each document refers to the themes. This serves to show the most important policy thrust for LSLA deals in Zambia. Reducing rural-urban migration, the policy and political environment in Zambia, socio-economic and demographic situation in Zambia, rural poverty reduction were missing at least in one document. On the other hand, rural development, commercial agriculture, food security and natural resources for exploitation were consistently mentioned in the 8 documents analysed. FBDP, NRP, Z7NDP, ZNWP and ZV2030 alluded to rural development

the most, while ZNAP, ZNAIP and ZIG alluded to commercial agriculture the most. Consistent with the foregoing, reducing rural-urban migration was the least referenced, while rural development and commercial agriculture were the most mentioned. Results from the content analysis suggest that LSLAs in Zambia are driven (or at least formally justified) by rural development, commercial agriculture, food security, reduction of rural poverty, exploitation of natural resources, policy and political environment, socio-economic situation of the country and rural-urban migration, in this order.



**16 - Figure 5.7** Themes that emerged as drivers of LSLAs in Zambia - counts of references in policy documents.

## 5.5 Discussion

In discussing how land governance in Zambia interplays with LSLA deals and LSLA outcomes, we relate the findings of this study (both the



national level policy and its implementation in Nansanga) to existing literature. In Section 5.5.1 we discuss land acquisitions in Zambia, and then the orientation and implementation of agricultural investment policies in Section 5.5.2. Finally, we attempt to relate the findings to multi-level governance (MLG) theory in Section 5.5.3. MLG offers a nuanced but also substantiated understanding of LSLAs in the Zambian context.

### **5.5.1 Land acquisition**

This study found 7 ‘generally acceptable pathways’ to acquiring land in Zambia: 5 are through formal institutions; and 2 are through traditional authorities. The chosen pathway depends on the socio-economic and financial status of the individual or entity acquiring land. *‘Multi-national companies are more likely to go through the President, particularly Chinese companies that are given land following government loan deals with China (C-KII #1, Lusaka, December 2017).’* Foreign investors are more likely to go through the Zambia Development Agency (ZDA), a private investment facilitator that draws its mandate from Zambia Development Act No. 11 of 2006 (ZDA, 2017). Unlike in Ghana where chiefs play a central role in land acquisitions of traditional land (see Nolte & Văth, 2013), the path to take to acquire land in Zambia seems to be determined by the type of investor.

At ZDA, investors are given institutional support, including certificates of registration that allows them to have access to land. To partner in public investments, the investor goes through the Industrial Development Corporation, a government arm for public investments. Urbanites are more likely to deal with the Commissioner of Lands, or directly approach the Chief or local district council for land. There are

therefore three discernible administrative tiers of land administration and governance in Zambia: the macro level represented by the President through the Commissioner of Lands; the meso level represented by district councils who have been contracted by the Commissioner of Lands to carry out land governance functions (mainly related to private land); and the micro level represented by traditional authorities, dealing exclusively with customary land.

This study found that different stakeholders perceive corruption in land administration at macro, meso and micro levels:

In those offices, submitted applications magically disappear from the in or out trays to create space for other applicants. Sometimes you find the same plot is allocated to more than one, two, three people. The process drags on and on until you realise that you have to 'oil somebody's fingers' to get your papers ready. The third way, I think I can add is cadreism where political party sympathisers, usually young people lawlessly give land to those with money as a way of paying themselves for supporting the Party in power. These stories are everywhere, even the President knows, and nobody does anything about them (C-KII # 2, Lusaka, March 2018).

At the micro level, it is somewhat difficult to distinguish cultural practices from conducts that can be alleged to be corruption. Nobody goes to the traditional chief empty handed. Even government officials, including the President bring gifts when they have to see the chief for campaigns (G-KII # 3 and C-KII # 2, Lusaka, December 2017). This study found that the Senior Chief Muchinda, was promised a tractor, electricity and an undisclosed amount of money by government officials '*in appreciation for the gift of land for Nansanga farm block* (M-KII #3, Nansanga, December

2017).’ He died before getting these things, and the *Mukolo*, the wife, confirmed not having received them through the District Commissioner. It remains debatable the extent to which ‘gifts’ influence the chief’s decision in giving land, and how much of it to give. However the case, the perception is that the more connections a node has (see **Figure 5.5**), that is, the traditional chief, local council and commissioner of lands, the higher the perception and likelihood of corruption at that level (I-KII #2, G-KII #5, C-KII #4 and Qg-KII #2, Lusaka, November 2017). In addition, this study found that power relations and financial resources play a role in land allocation and acquisitions. *‘If you can ask people in local councils or even at the Ministry of Lands, you will be shocked by how much land they have, and how they give it to their bosses (C-KII #2, Lusaka, December 2017).’*

LSLAs have led to landlessness in Zambia, and media reports of land dispossession are ubiquitous (for example, Times of Zambia, March 17, 2017; Lusaka Times, April 24, 2017; Human Rights Watch, October 25, 2017 )<sup>8</sup>, including reports (for example, Chu, 2013; Chu et al., 2015; GRZ, 2016; Alstine & Afionis, 2013). Currently, discussions about compensation levels are held between local communities and the entity (individual or company) interested in investing in customary or leased land without government intervention as ‘the country has not yet put in place a policy framework to guide the compensation and resettlement of internally displaced people (GRZ, 2015 p12).’ This ‘willing buyer, willing

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<sup>8</sup> “Land policy overdue.” Times of Zambia, March 17, 2017 <http://www.times.co.zm/?p=100908>; “Zambia must grab all land belonging to foreigners.” Lusaka Times, April 24, 2017 <https://www.lusakatimes.com/2017/04/24/zambia-must-grab-land-belonging-foreigners-mbita-chitala/>; “Forced to Leave: Commercial farming and displacement in Zambia.” Human Rights Watch, October 25, 2017 <https://www.hrw.org/report/2017/10/25/forced-leave/commercial-farming-and-displacement-zambia>

seller' model between communities and business entities happens between parties with unequal social relations (Peters, 2013). While there is a policy and institutional infrastructure promoting LSLAs, there are no matched levels of policy and institutional arrangements to ensure the management of social and environmental concerns associated with LSLAs. Landlessness is mitigated by the Department of Resettlement, Office of the Vice President through the resettlement scheme initiative, if reported. Victims may only get one-off support due to resource constraints (G-KII #4, Lusaka, March 2018). Resettlement schemes require financial resources, and therefore take long time to establish, given that the government is financially constrained.

Once land is allocated, it has to be developed within 18 months; failure to do so, will lead to forfeiture of land (GRZ, 2015). This policy and institutional requirement provides 'a means to enable elites and officials to usurp the rights of the poor and socially weak groups (Deininger & Feder, 2009 p257),' including elite capture of land (Sitko & Jayne, 2014b). The poor are not able to develop land at the same rate as the rich, let alone be able to go through the bureaucracy for which they incur costs. *From the way land is acquired in Zambia, my grandmother in Northern Province can never own land in Lusaka. She has to come to Lusaka several times, and that takes time without certainty of getting approved* (C-KII #1, Lusaka, December 2017). The current policy structure therefore is less likely to ensure the protection of the socio-economic well-being of communities whose land is taken away for investments.

Legally, investors need to have their business plans verified and approved by relevant government (e.g Office of the Vice President for issues related to displacements) and quasi government institutions (e.g Zambia Environmental Management Agency for issues related to

environmental standards). However, sometimes investors begin their operations without the knowledge of government officials who repeatedly echoed lack of human and financial resources to enforce implementation mechanisms. The policy mismatch and lack of resources to implement existing policies have created what Wisborg (2013) refers to as 'governance gap' in Zambia regarding LSLAs. Lack of capacities at local and national levels deprive the majority of Zambians (and especially those in rural area) of the opportunity to take advantage of benefits that come with LSLAs (Zoomers & Otsuki, 2017). Zambia has rationalised socio-economic reasons to promote commercial agriculture, however as De Schutter (2011 p249) observes about host countries, there are problems of governance 'to effectively manage these investments in order to ensure that they contribute to rural development and poverty alleviation.'

There is a multiplicity of acceptable avenues to acquire land in Zambia, and the co-existence of two land tenure systems is plagued with ambiguity and allegations of corruption. Our findings resonate with those of Nolte (2014) and Munshifwa (2018) that LSLAs in Zambia are happening in a poorly governed land system. While Nolte (2014) focused on land acquisitions of customary land in Zambia by exclusively foreign investors, and Munshifwa (2018) did a policy review of customary land governance in Zambia, our approach combined policy document analysis (multi-sectoral policy documents), interviews and a concrete LSLA deal case to complement their findings. The multiplicity of acceptable avenues reflect the multilevel governance structures of land in the country, where different actors at different policy spaces exercise their authority over land (details in section 5.3). Nansanga has now been in *limbo of development* for almost 10 years. Customary land, expropriated from communities,

was converted to leasehold without due consultations. Private land tenure cannot be converted back to customary land, fostering the accusations that LSLAs, disguised as rural development mechanisms, are government's way of taking over customary land (C-KII #4, Lusaka, December 2017).

### **5.5.2 Orientation and implementation of LSLA deals in Zambia**

Within the broader context of national policy implementation, our findings indicate that the government legitimately supports LSLAs. For example, the New Deal government cited development of rural areas, food security, commercialisation of agriculture and reduce rural-urban migration to establish farm block program (GRZ, 2005) that led to the conversion of ~1 million ha of customary land to leasehold. It is safe to indicate that GRZ has 'policy-excuses' for promoting LSLA deals in Zambia.

The development of Nansanga and other farm blocks decreed by Parliament in 2002 is in limbo. Their future is uncertain and it is doubtful that the current government would find and allocate the financial resources required. '*The government cannot financially sustain itself courting investors with infrastructure development in farm blocks* (Qg-KII #1, Lusaka, April 2018).' The failure of LSLAs has generally been acknowledged (for example, Locher (2015) in Tanzania; Cotula *et al.* (2014) in Ethiopia, Kenya, and Tanzania; Hall (2011) in Mozambique; and Cotula *et al.*, (2009) in Madagascar). In a multi-country study, Schoneveld (2017) observes that LSLAs in Africa do not contribute to sustainable development outcomes due to elite capture, incompatible production system, lack of collective action and contestation, high modernist ideologies, conflicts of interests, capacity constraints and deficiencies in

the law. These findings resonate with ours. However, our findings add further evidence that the failure of LSLAs in terms of both their implementation and outcomes are also attributed to resource constraints shaped by economic and political factors. By extension, an understanding of orientation and implementation of LSLA deals needs to take into account context-specific economic and political landscapes. Zambia's specific case has shown that despite policy directions to commercialise agriculture, the performance of the sector has been dismal. The country still depends on the mining sector for economic survival. This begs the following question: how can a country like Zambia that has always depended on mining change its economic trajectory through agriculture? In theory, the farm block program was set to respond to this question as the New Deal government under Patrick Levy Mwanawasa sought to 'transform Zambian peasants into commercial farmers, to provide food security for the country and food exports to its hungry neighbours (Cherry, 2002 p11).' However, in practice, after the death of Patrick Levy Mwanawasa, the MMD under Rupiah Banda (2008 - 2011) and the Patriotic Front under Michael Sata (2011 - 2014) and Edgar Chagwa Lungu (2014 to date), the farm block program has been in *limbo of development* after initial significant government investments in infrastructure development to attract investors.

As Samboko *et al.* (2017) who report on the incompleteness of infrastructure and absence of active investment, our findings reveal poor workmanship in the construction of dams attributed to poor quality materials though the bills of quantity were inflated (G-KII #1, Serenje, December 2016). In addition, the contract to construct Luombwa bridge on the main river in Nansanga was given to a former top government

official who left the project without completing the work. This suggested corruption in the government system (G-KII #1, Kabwe, November 2017).

In Kabundi which has two open pit manganese mines, it was reported that some owners of the land in the farm block have sold their land to the mining companies. Thus, the farm block program has facilitated the expansion of the land market to rural areas where it never was before, and this has led to cases of landlessness at two levels: land owners selling land in times of distress (Chimhowu & Woodhouse, 2006); and conversion of customary land to leasehold with threats and actual evictions. As in Manda *et al.* (2019) and Kalaba *et al.* (2014), we found lack of interdepartmental cooperation within government institutions in Zambia, despite the multiplicity of LSLA policy drivers in different government departments. For example, at the time of this study, neither the Zambia Environmental Management Agency, nor the Ministries of Lands and Agriculture were aware of the mining operations in the farm block. The mine operators obtained mining licenses from the Ministry of Mines to mine manganese in a designated area for agricultural development without communicating with the most relevant Ministries of Lands and Agriculture.

Communities were promised jobs, roads, dams, health centres and schools by the government (M-FGDs, Nansanga, December 2017). Our findings also resonate with others that found that to get social license from local communities, governments and investors oversell the local benefits of land investment programs and downplay potential negative impacts (Anseeuw *et al.*, 2013; Boamah, 2015; Dalupan *et al.*, 2015; German *et al.*, 2014; Kennedy *et al.*, 2013; Schoneveld, 2013; White *et al.*, 2012). As noted by Nyamu-Musembi (2007) and Samboko *et al.*



(2017), the role of the government has slowly vanished in LSLAs, without supportive policy guidance for the implementation.

What can explain the government's tepid interest in Nansanga after investing in infrastructure development at the start? This study contends that the tying of political party manifestos to national development priorities is the most compelling explanation of the development status of Nansanga. While the New Deal government made an economic case for improving agriculture (Cherry, 2002), the Movement for Multiparty Democracy (MMD) under Rupiah Banda and the Patriotic Front (PF) under Michael Sata and Edgar Lungu have not showed any economic and political interest in the agriculture sector to develop farm blocks. The interviews (D-KII #1, G-KII #3, C-KII #2, Lusaka, December 2017) revealed that, Bona Farm from Hungary that won the tender to invest in Nansanga perceived political risks because PF did not share the same agricultural ambitions with the New Deal of the MMD. In addition, there were allegations of corruption in the selection of the investor which explains why the second or third bidders of the same tender did not take up the core venture after Bona Farm pulled out (D-KII #1, G-KII #2, C-KII #2, Lusaka, December 2017). While our finding has a resemblance with LSLA implementations in Ghana and Kenya where Nolte & V  th (2013) found discrepancies between *de jure* and *de facto* procedures with powerful actors operating in legal grey areas, our finding substantiates the failure of LSLAs with perceived levels of corruption by very high level officials. Though there was a tender process, Bona Farm was single-handedly picked by the highest office in the land (G-KII #4, Rch-KII #1, C-KII #2, Lusaka, November 2016).

The establishment of a farm block was budgeted at ~\$11 410 000, including infrastructure development and project management costs

(GRZ, 2005). The farm block was officially given to the government by Senior Chief Muchinda in 2003. Over a period of 4 years, between 2002 and 2006, only a meagre 17% (~\$1 944 060.20) had been released by the Ministry of Finance for the commercialisation of Nansanga (GRZ, 2006). This finding resonates with Chapota & Chisanga (2016) who reported about budgetary allocations that do not reflect the agricultural development needs of the country. For example, the national budgetary allocation to the agriculture sector between 2013 and 2018 has been between 5.79 and 9.42% of the total national budget, below the Maputo declaration threshold of 10 percent (Chapota & Chisanga, 2016). Program and operational funds in Zambia are applied for to the Ministry of Finance through expenditure plans, and only a fraction is approved (Goverheh *et al.*, 2006). This limits what can be achieved in the agriculture sector. In the media, the Minister of Agriculture was quoted as having justified the reduction in budgetary allocation to agriculture to support infrastructure development in the country (Lusaka Times, October 24, 2015).<sup>9</sup>

In an analysis of the 2018 budget, Kabechani *et al.*, (2018) show that the allocation to the agriculture sector are towards the Food Reserve Agency (FRA) and Farmer Input Support Program (FISP) that only benefit maize production. Chapota & Chisanga (2016) note that FRA and FISP benefit farmers who are already better off. The Seventh National Development Plan (7NDP) (GRZ, 2017) also notes that FISP funding is inadequate and does not reach the intended poorest farmers. Between the Sixth National Development Plan and the 7NDP, there was a 5.8%

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<sup>9</sup> "Given Lubinda justifies budget reduction allocated to agriculture." Lusaka Times, October 24, 2015 <https://www.lusakatimes.com/2015/10/24/given-lubinda-justifies-budget-reduction-allocated-to-agriculture/>

drop in the number of resource poor households that were reached through FISP (GRZ, 2017). Even the e-voucher system that would also permit farmers to access inputs of their choice (GRZ, 2017) failed to deliver. This further confirms what this study found that there are budgetary and implementation constraints to boost the agriculture sector in two main ways: (1) investing resources in quick-fix activities that are not likely to spur agricultural development; and (2) resource constrained smallholder farmers are not reached by government agriculture support programs or extension services due to institutional inefficiencies and perceived cases of corruption.

The implementation of agricultural development programs in Zambia does not have a successful record. This study found that policy mismatch, corruption, lack of institutional and financial capacities and lack of political will to draw institutional distinction between political party manifestos and national development priorities make inertia that stalls development in the agriculture sector. In the 7NDP, the government itself officially acknowledges corruption indicating, 'the high level of corruption is another challenge that hampers development; this is evident in Zambia's Corruption Perception Index score at 38/100, and ranking 76th out of 138 countries (GRZ, 2017 p29).' In short, the interplay between land governance LSLA deals and LSLA outcomes is marred by political meddling, *cadreism*, and corruption and is constrained by structural institutional inadequacies (underfunding, understaffing, lack of inter-ministerial coordination). Some of these factors have plagued the Zambian general system of governance for many years. For example, 17 years ago Dinh *et al.*, (2002) noted the unrealistic budgeting, poorly trained staff, lack of transparency, accountability and fiscal indiscipline to execute budgets. They (Dinh *et al.*, 2002) concluded that these factors

negatively impact the delivery of social services and poverty reduction programs in Zambia.

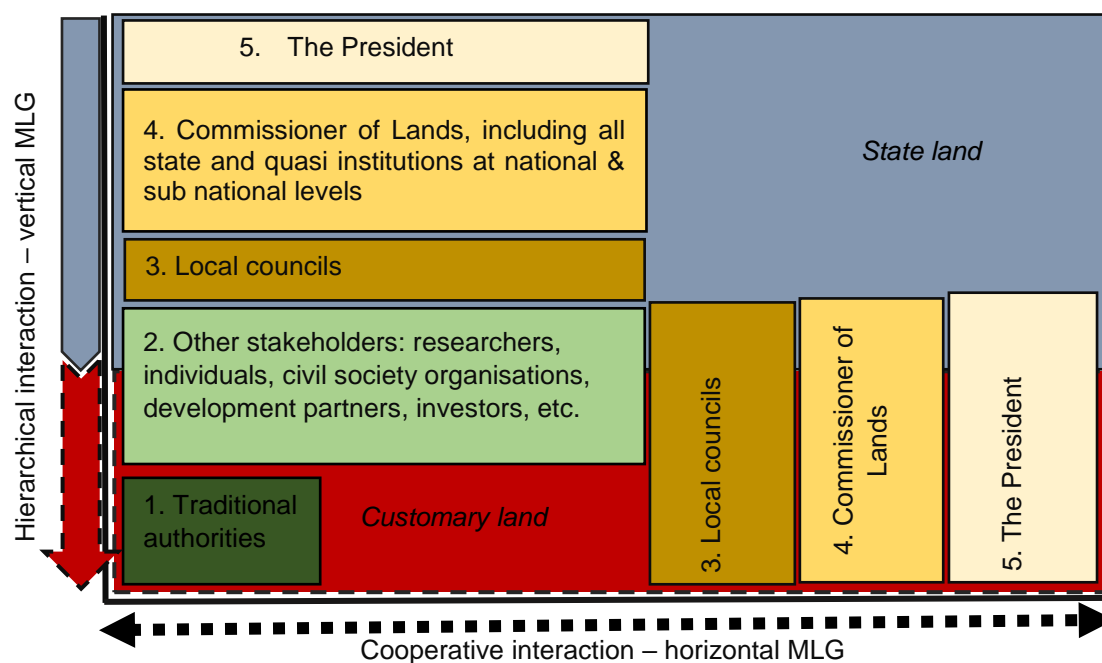
### 5.5.3 Theoretical relevance of the findings

With a bifurcated land tenure system (customary and state land), our findings discerned three levels of land governance in Zambia: the macro level, the meso level, and the micro level, represented by the President through the Commissioner of Lands, the district councils, and the micro level represented by traditional authorities, respectively. To understand how land governance in Zambia interplays with LSLA deals and LSLA outcomes, we relate our findings to multi-level governance theory (MLGT).

MLG represents a governance process where different actors interact as they act at their respective administrative tiers with an authoritative claim to their role within a given policy network (Eckerberg & Joas, 2004) to ensure a shift in political power from higher to lower levels in a coordinated way (Karpouzoglou *et al.*, 2016). In these interactions, non-state actors are part of decision processes at different levels of governance (Newig & Fritsch, 2009). The interactions among actors are either horizontal (cooperation arrangements among institutions) or vertical (hierarchical arrangements among institutions) (Maldonado *et al.*, 2010). The different tiers of actors involved reflect their different roles in the policy process (Zürn, 2012). In the case for Zambia, land governance is a complex policy and institutional structure that represents multiple actors with respective decision making points.

The Commissioner of Lands, acting in the official capacity of the President as the administrator of land in Zambia, can *hierarchically*

*interact* (vertical interaction) with other stakeholders as actors in a land policy implementation process to achieve aims perceived to be of national interest (such as building power plant, roads, airport) on both customary and state land. By the same token, the Commissioner of Lands supports other state and quasi institutions at national and sub-national levels to implement land related development programs such as the farm block program. The Commissioner of Lands can also *cooperate* with other actors in the land policy process through, for example, consultations to amend the national land policy (horizontal interaction).



17 - Figure 5.8 Conceptual model depicting horizontal and vertical MLG of land among actors in Zambia.

In this way, development partners and civil society organisations are involved in policy processes that affect both state and customary land.

Investors and individuals can horizontally be interacted with as actors interested in investing in either customary or state land. Traditional authorities are limited to the administration of customary land. Conceptually, this is depicted in **Figure 5.8** above.

Vertically, the jurisdiction of the President, Commissioner of Lands and Local Councils is limited to state land (blue). From the top to the bottom, actors hierarchically occupy their appropriate policy space making land governance a complex system of decision points (Newig & Fritsch, 2009) in Zambia as each of the actors seek to achieve their aims. Given the different decision points occupied by actors, vertical MLG tends to be focused on actor territorial levels rather than specific policies (Maldonado *et al.*, 2010). In the case of Zambia, for example, the Commissioner of Lands is only at national level in Lusaka, while local councils are at district levels across the country, just like civil society organisations, researchers, development partners and investors. Traditional authorities are in rural areas on customary land. Horizontally, the jurisdiction of actors spreads to both state and customary land (blue and red). The dashed horizontal line underscores the negotiations and iterative processes involved as actors interact to achieve policy goals on land governance, such as consultations to amend the Lands National Policy. In this way, horizontal MLG tends to focus on specific policy priorities rather than territories (such as customary land in rural areas versus state land in urban areas) (Maldonado *et al.*, 2010).

MLGT has widely been used to understand political governance structures and policy processes, particularly in the EU (for example, development policy in the EU (Conzelmann, 1998); economic integration in the EU (Scharpf, 1997); climate change policy in the EU (Kern & Bulkeley, 2009); MLG in the EU (Bache, 2012); and rethinking MLGT in

the changing EU (A. B. Murphy, 2008)). Maldonado *et al.* (2010) have used MLGT to understand disaster management information systems for international humanitarian relief. Gruby & Basurto (2014) and Basurto (2013) have applied MLG to the management of marine commons in Palau and biodiversity conservation in Costa Rica, respectively. In all these published works, the participation of actors at different policy spaces has been underscored.

In the global south, we have not come across published work that has applied MLGT to understand the role of traditional authorities formally recognised by the state in the context of the contemporary wave of LSLAs. Our attempt to relate the findings in Zambia to MLGT is a potential area that needs further conceptualisation, particularly because traditional or customary land is relevant to the LSLA debate.

## 5.6 Conclusion

Taking Nansanga farm block as a concrete case of an LSLA deal, the aim of this chapter was to investigate how land governance interplays with LSLA deals and LSLA outcomes in Zambia. Through participatory rural appraisal approaches, content analysis of agricultural related policies and key informant interviews with different stakeholders, the study has shown that the government justified their embrace of LSLAs on socio-economic development grounds without the same level of policy and institutional arrangements to manage and govern LSLAs. The co-existence of formal and informal land governance systems in Zambia is a 'marriage of convenience' between the state and traditional authorities. Two systems exist but with multiple formal and informal mechanisms for

acquiring land at three administrative levels. This multiplicity of mechanisms makes it possible for corruption to flourish in land deals.

Rural development, commercialisation of the agriculture sector, food security, rural poverty reduction, Zambia's natural resource endowment, stable policy and political environment socio-economic and demographic factors, and minimising rural-urban migration, are the important policy thrusts for promoting LSLAs in Zambia. The chapter has revealed that political party meddling in land governance compromises the quality of LSLA deals and LSLA outcomes. The fact that Nansanga is an LSLA deal in limbo of development is in part attributed to political party meddling where the selection of the processing company for the case of the core venture of the farm block was politically motivated. In addition, the government has underfunded the development of the farm block. Anchored in a poorly coordinated land governance system, the performance of the agriculture sector has been dismal.

The study has drawn attention to the emergence of manganese mining and tobacco production in Nansanga. They are creating casual jobs and improving incomes for workers, filling socio-economic gaps and promises of the farm block in *limbo of development*. Zambia has socio-economic reasons for pursuing LSLAs. However, our findings suggest that the country has 'governance gaps' that need to be filled to influence positive outcomes of investments in the agriculture sector. In this chapter, we have highlighted the importance of furthering the conceptualisation of multilevel governance in the context LSLA to improve our understanding of the policy and accountability spaces and roles of different actors, particularly traditional authorities. This will further our understanding of the processes of access and use of customary or traditional land and associated resources on which rural communities depend for their



livelihood (Ostrom, 2005). Overall, the evidence from this study suggests that agriculture for rural socio-economic development needs to be reconsidered, taking into account the (in)ability and (lack of) political will but also the policy and institutional capacity to manage investments by the Zambian governments to ensure investments lead to 'win-win-win' situations in which all stakeholders concerned gain (De Schutter, 2011). Finally, our findings indicate that LSLA deals for agricultural programs in which significant amounts of public funds are invested benefit individuals or entities with power and financial stamina in both formal (state land) and informal (customary) settings in Zambia.

## 5.7 Chapter 5 References

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## **6. 'When the Cat is Away, the Mice will Play:' the Political Ecology of Tobacco Production and Manganese Mining in Nansanga Farm Block in Zambia**

Andrew Chilombo and Dan van der Horst  
School of GeoSciences, University of Edinburgh

**Abstract:** Large scale land acquisitions (LSLAs) have controversially been debated. The arguments in support and against LSLAs are based on socio-economic and environmental impacts. LSLA deals are punctuated with cases of cancellations in part or in whole, scaling down, abandonment or change of business models or investments. Governments in host countries play a critical role in LSLA deals. They are land brokers that facilitate LSLA transactions, and shape the destiny of LSLA deals as they set up the policy environment for LSLAs, and ensure compliance to established modes of implementation. Thus, LSLAs unfold in government-engineered policy landscapes, enclosing land resources of communities for exploitation by outsiders with more financial resources and access to power. However, land policy landscapes and LSLAs (re)shape each other. Case studies of LSLAs have highlighted disappointing implementations of land deals. Few attempts have been made to understand what accounts for cancellations, scaling down, abandonment or change of business models and what happens when both state policy and implementation of land deals fail. Taking Nansanga farm block, a government of Zambia-led LSLA deal in limbo of development, this chapter presents results of a study that was undertaken to understand the emergence of new flourishing opportunistic economic activities, tobacco and mining, in an area that was designated

for food crop production. Through snowballing, 17 key informant interviews were conducted with tobacco producers, including 4 employees working for a tobacco leaf company, Tombwe Processing Limited. Interviews were also conducted with 6 foremen at two manganese open pit mines in Nansanga and 8 government officials in the Ministries of Lands and Agriculture, and Zambia Environmental Management Agency. The development of the farm block has stalled, and developed infrastructure has already crumbled. Results show that the vanished role of the state in the development of Nansanga, created a development vacuum that tobacco production and open pit manganese mining have filled. Riding on the farm block infrastructure, tobacco and mining, heavily extractive as they are of forest resources, have increased financial inflows and job creation in Nansanga. However, they have both led to labour flight from production of traditional crops, deforestation, and manganese mining is leading to landlessness as mining companies are buying titled land from land owners, and are slowly encroaching on customary land.

**Author contributions:** AC designed the study and carried it out. AC wrote the manuscript, and DvdH reviewed it and suggested improvements. An edited version of this chapter has been submitted to the *Journal of Political Ecology*.

## 6.1 Introduction

The convergence of global crises, namely; financial, environmental, energy and food has given rise to large scale land acquisitions (LSLAs) for investments by foreigners and local elites in the global south (Borras & Franco, 2012). LSLAs have increasingly become a topic of development



policy debate. The debate is bifurcated between optimists who see LSLAs as a mechanism for capital transfer for development, and sceptics who view LSLAs as means of foreignising of local resources (Zoomers, 2010). The arguments are rooted in the socio-economic and environmental (SEE) impacts of the phenomenon. Positive or negative, government policies are important in shaping LSLA outcomes, and their sustainability depends on the capabilities of state institutions (Manda *et al.* (2019).

Deininger & Byerlee (2012) underscore the pivotal role of policy and institutional frameworks in transferring resources to more efficient producers and protection of property rights so that LSLAs contribute to overall development. This transfer of resources to efficient producers translates into enclosing community resources for the exploitation by non-community members with financial resources and power. This is premised on the assumption of 'surplus land and surplus labour' in the global south that need to be exploited (Li, 2011). In this way, political ecological identities are created, that is, defining identities of actors, marginalisation and those that bear the brunt of environmental degradation and conflicts ensuing from marginalisation (Robbins, 2012).

Counterintuitively, Schoneveld (2011) finds that governance and land availability in host countries in sub-Saharan Africa are not correlated with the level of LSLA deals, but rather with host government proactive support and incentives to investors. In Zambia, for example, the government through the Zambia Development Agency, has proactively provided incentives to investors such as the abolition of price controls, liberalization of interest rates, abolition of exchange rate controls, and 100% repatriation of profits (Zambia Development Agency, 2017). These incentives are partly driven by government plans to ensure a win-win

situation with investors, but partly also as a way of courting them by easing the business environment. In this way, policy and institutional frameworks and LSLAs influence each other (Nolte & Vãth, 2013). In Zambia, for example, besides free investment in virtually all sectors of the economy and privatization of state-owned enterprises, investors with support from development partners pushed for trade reforms aimed at simplifying and harmonizing the tariff structures (Zambia Development Agency, 2017).

Despite the favourable policy environments, LSLA research recognises that there are many LSLA deals that have failed in that they have been cancelled, scaled down or simply abandoned for various reasons (see Cotula *et al.*, 2011; Edelman, 2013; Messerli *et al.*, 2014; Locher, 2015; Scheidel, 2016; Hufe & Heuermann, 2017). Schoneveld (2017) attributes the failure of LSLA projects to conflicts of interests, overlapping and competing roles and mandates, lack of community-level resistance in many cases, lack of alternative local development prospects, investor failure to integrate affected communities and use of incompatible business models.

The failure of LSLA deals has been recognised, however few attempts have been made to frame within host country specifics an understanding of what happens when both state policy and implementation of land deals fail. That is, to improve our understanding of the SEE impacts of LSLA deals, there is need to understand the political ecology of failed, cancelled, abandoned or LSLA deals in limbo of development. Host countries have their own land governance structures, biophysical and socio-economic idiosyncrasies, and therefore, case studies offer a nuanced research opportunity to unravel what happens when both state policy and implementation of land deals fail at local level.

Evidence from case studies can contribute to meta-analyses beyond national level dynamics.

As a contribution to this discussion, this study was undertaken to answer the question: in what ways and why has the failure to fully develop Nansanga farm block led to the emergence of new economic players to grow tobacco and mine manganese in an area planned for food crop production? Nansanga (~155 000ha) is part of the 2002 government of Zambia-led LSLA programs to commercialise agriculture for food security, reduce rural-urban migration and rural development (GRZ, 2005). Customary land was converted to leasehold. An exploratory approach was used that relied on participatory rural appraisal methods.

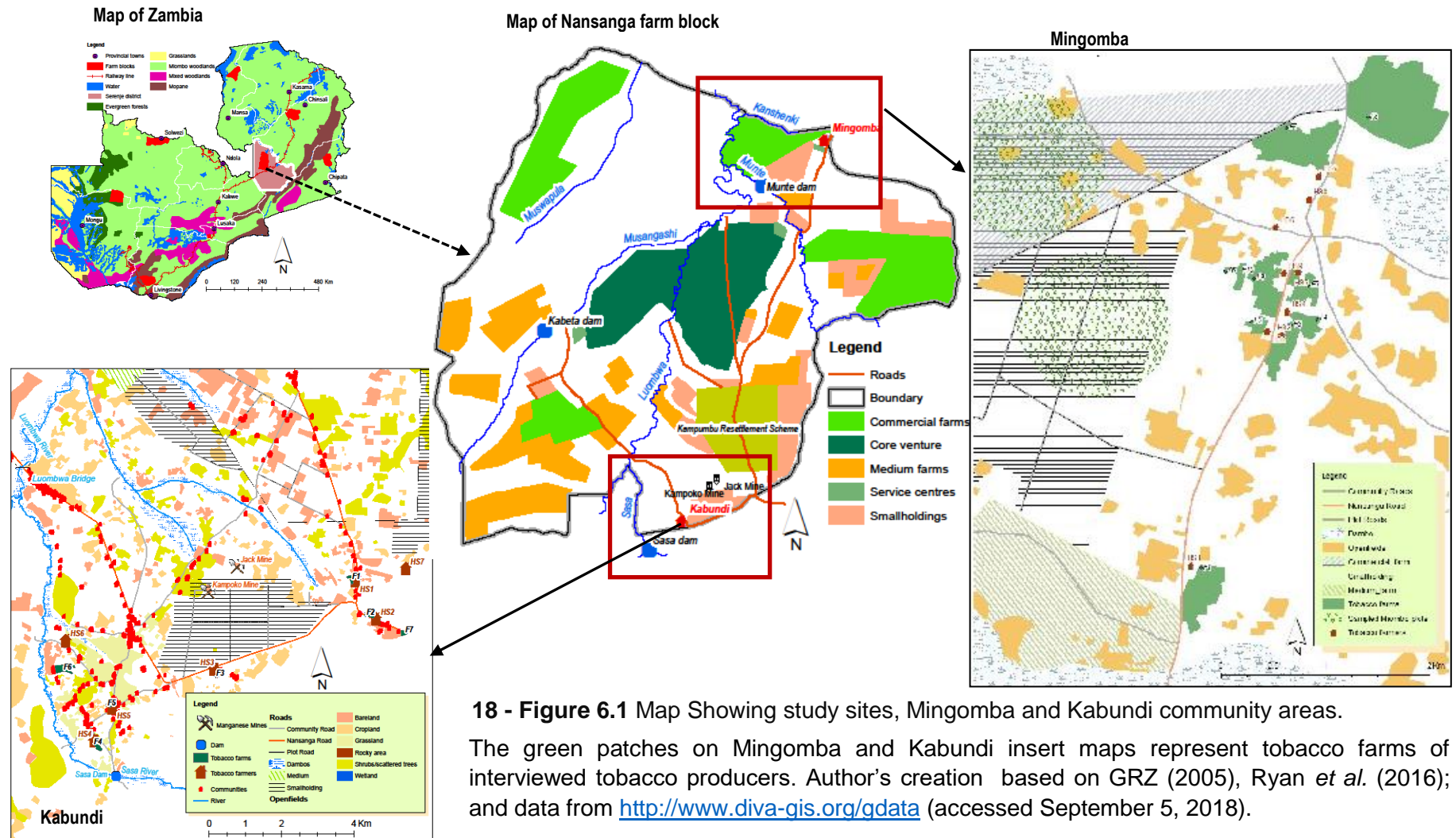
The chapter is structured as follows: we first present the research design and methods in Section 6.2, before presenting the results on tobacco production and manganese open pit mining in Section 6.3. To clarify the embeddedness of this case study in political ecology, we start the discussion of results in Section 6.4 by briefly highlighting the basic tenets of political ecology, and how political ecology is relevant to the emergence of tobacco production and manganese mining on previously habited customary land but whose tenurial arrangements were converted and designated as farm block for food crop production. We conclude in Section 6.5.

## **6.2 Research design and methods**

### **6.2.1 Study area**

This study was carried out in Mingomba and Kabundi communities of Nansanga farm block (henceforth as Nansanga) (12° 47'S to 13° 0'S and 30° 5'E to 30° 4'E, with elevation between 1210.4 m and 1347.4 m), among Lala people of Senior Chief Muchinda in central Zambia. Mingomba and Kabundi are areas where tobacco production and mining (Kabundi only) are happening. Mingomba and Kabundi benefitted from infrastructure development from Nansanga program. The government planned to invest ~\$11 410 000, though only 17% of that amount was actually invested between 2002 and 2006 (GRZ, 2006) to develop infrastructure: roads, dams, bridges, electricity and irrigation canals. Those who bought land (commercial and medium scale) have not moved on site since 2012, and the government did not finish infrastructure development, including finding an enterprise to run the core venture of the farm block. Land buyers in Nansanga were issued with title deeds, as part of the farm block program. However, at the time of this study, developed infrastructure had already collapsed, and roads and demarcations were overgrown with bushes. The selection of Mingomba and Kabundi community areas enabled an understanding of the emergence of tobacco production and mining, and how communities are experiencing them.

Before settling in Mingomba, households were clustered together in Kanshinke village, north of Mingomba. Land was distributed according to local clans. In 1973 the government forced communities to settle near passable roads to facilitate extension services. However, lack of water,



18 - Figure 6.1 Map Showing study sites, Mingomba and Kabundi community areas.

The green patches on Mingomba and Kabundi insert maps represent tobacco farms of interviewed tobacco producers. Author's creation based on GRZ (2005), Ryan *et al.* (2016); and data from <http://www.diva-gis.org/gdata> (accessed September 5, 2018).

disputes over land and witchcraft forced people to return to Kanshinke. Years later, the Senior Chief Muchinda began allocating land to households again in Mingomba. Households were isolated from one another to lessen social conflicts experienced in 1973.

Kabundi, on the other hand, was the first palace of Senior Chief Muchinda years before 1960. Given the palace, Kabundi was established as a sub-district when Serenje town was established as the main district town in 1940. A health post, local court and school were established, rare as these were in those days. The Kabundi area has also Kampumbu resettlement scheme, occupied mainly by the Tonga people from southern Zambia. Some of them are retirees, and others moved to the resettlement scheme as farmers. Therefore, compared to Mingomba, Kabundi has had more development programs, and is more culturally mixed. Nansanga lies within the third ecological zone of Zambia. With an annual rainfall of ~ 1200mm, it is characterised as a wet miombo woodland (Chidumayo, 1987; Frost, 1996).

Until the 1990s, the Lala people practised shifting cultivation on customary land. Lala communities are mainly smallholder farmers, cultivating maize, cassava, groundnuts, and beans on 0.1 – 2 ha. A traditional Lala calendar has 13 months, and throughout the year, Lalas are involved in agriculture-related activities. The life of the Lalas therefore revolves around farming (see appendix 2). The Tonga community within the resettlement scheme are more subsistent, socio-economically wealthier than the local Lala people in Nansanga. Some Lala people are employed to work on the farms for the Tonga people.

### **6.2.2 Participatory Rural Appraisal Approaches for co-production of knowledge**

To understand the political ecology of tobacco production and manganese mining, participatory rural appraisal methods were used. These methods are a convergence of a number of research programs that are commonly used in participatory action research, agroecosystem analysis, applied anthropology, and farming systems (Campbell, 2001). They represent a set of approaches that offers a platform for rural communities to present, share and analyse their knowledge of life and conditions (Abbot, 1996).

The choice of participatory rural appraisal for this study was based on two considerations: the establishment of the farm block in the context of the contemporary LSLAs in Zambia is incipient and therefore, beyond the political and media rhetoric, very little is known about the socio-ecological changes as land deals unfold at community level. Second, the research was carried out in an area where an LSLA deal is unfolding, and therefore community members who have been impacted by LSLA are the same ones that were part of the participatory rural appraisal, as they are directly related to the nature of the phenomenon being investigated. Thus, lack of information about the phenomenon and direct interaction with the affected people justified the use of the participatory rural appraisal methods (Campbell, 2001). This enabled the involvement of community members as co-producers of knowledge about LSLAs; giving them the opportunity to reflect on their own experience and draw meaning from LSLAs to enhance the understanding of the impacts of the phenomenon on their socio-ecological system.

### 6.2.2.1 Focus group discussions and key informant interviews

According to Kitzinger (1995 p299), 'focus groups are a form of group interviews that capitalises on communication between research participants in order to generate data.' With the support of traditional leaders, the *Sulutanis* and *Chilolos*, village headmen and Senior Chief advisors, respectively, groups of community members were convened in different areas for focus group discussions (FGDs) on the impacts of establishing the farm block in Muchinda chiefdom. With a questionnaire guide, the researcher brought up topics of relevance (Calder, 1977) to facilitate the understanding of the emergence of tobacco production and mining in Muchinda chiefdom. As DiCicco-Bloom & Crabtree (2006) suggest, there was flexibility in following the planned topics to explore community members' interests, knowledge and themes as they emerged during the discussions. FGDs revealed community level perceptions of the socio-ecological changes (Morgan, 2008), beyond experiences of individual tobacco producers and mine workers. Thus, FGDs supported the understanding of the collective but diverse and divergent perceptions and opinions about LSLAs on the livelihoods of rural communities beyond those of individuals (Chandra, 2010). In this way, FGDs helped to check expert opinions from key informants (Morgan, 2008). Focus group discussions therefore served to triangulate the data that was collected from key informants.

Through snowball sampling technique, the *Sulutanis* and *Chilolos* supported the identification of key informants. For an exploratory and critical qualitative study like this one, snowball sampling offered practical advantages for gathering data on a difficult-to-observe phenomenon (Faugier & Sargeant, 1997) like Nansanga farm block in *limbo of*



*development.* The key selection criteria were the interviewees' involvement in producing tobacco, work in the manganese mines, and then their participation in activities during the demarcation of parcels. Another consideration included community respect that an individual commands as this benchmarked credibility of what they would say. Within the chiefdom, the mix of both FGDs and key informants enabled 'greater depth from the latter and greater breadth from the former (Morgan, 2008 p134).'

Outside the farm block, by the same snowball sampling technique, key informant interviews were conducted with government and quasi government institutions, researchers, agri-business entities, civil society organisations and development practitioners. It is through snowball sampling that interviewees with expertise and first-hand information on the subject under study were efficiently identified and included in the study (Faugier & Sargeant, 1997; Kendall *et al.*, 2008). The leaf company, Tombwe Processing Limited, Kampoko and Jack Manganese mines were identified through FGDs. Outside Nansanga, the Ministry of Agriculture was first approached as the locator. During the interview, the researcher was referred to two departments at the Ministry of Lands for additional information. The Ministry of Lands referred the researcher to the Zambia Development Agency, then the Zambia Environmental Management Agency, then the Departments of Resettlement and Disaster Management at the Office of the Vice President. The process went on similarly to interview other relevant stakeholders.

### 6.2.3 Estimation of woodfuel consumption in tobacco production

A total of 17 tobacco producing households in Mingomba (n=10) and Kabundi (n=7) were snowball-sampled and interviewed using a structured questionnaire. We sought to understand the motivations for producing tobacco. Growers were also asked about the socio-economic benefits and concerns of tobacco farming, labour demands, amount of land under tobacco farming, quantity of wood used for tobacco curing, production methods of tobacco and deforestation related to tobacco production. The farmers are in contractual production arrangements with Tombwe Processing Limited (TPL), a tobacco leaf company with a national office in Lusaka, Zambia. TPL distributes inputs and offers training to its farmers in Nansanga to produce tobacco, which it later buys for export mainly to China.

Different approaches can be used to estimate fuelwood consumption. These include household surveys that include recalls (Démurger & Fournier, 2011; Fox, 1984; Khuman *et al.*, 2011; Shyamsundar & Bandyopadhyay, 2004), and estimates based on bundles and truckloads (Marsinko *et al.*, 1984). Other estimates use economic models (Halvorsen, 2017). The weighing method has widely been used (Brouwer & Falcão, 2004; FAO & UNHCR, 2017; Fox, 1984). We used an analog hanging scale to weigh individual logs in a bundle, then we multiplied by the total number of bundles used by the farmer to estimate their fuelwood consumption for curing tobacco per growing season. The practice is that fuelwood is heaped in bundles called *ifikoto* of ~2m x 1.5m x 1m. Firewood collected during land preparation was weighed separately from the freshly cut one. The average was then calculated and reported. Fox (1984) reports that weighing is the most

accurate. We found it accurate and also convenient for irregularly shaped logs.

**Table 6.1** below presents the categories of respondents and how they have been coded in this chapter. The respondents have been anonymised. In this regard, the coding starts with an identity code, the number, the place of the interview and the date. For example, an interview in March 2018 with number 4 key informant in Nansanga, will be written as follows: K-KII # 4, Nansanga, March 2018. A detailed description of respondents has been given in Chapter 2.

**13 - Table 6.1** Summary of categories of respondents

No.	Identity code	Respondent
1.	Mm-KII	Key informant mining company foreman
2.	TF-KII	Key informant tobacco farmer
3.	LT-KII	Key informant tobacco leaf company employee
4.	M-FGD	Focus group interviews in Mingomba
5.	M-KII	Key informant interview in Mingomba
6.	K-FGD	Focus group interview in Kabundi
7.	K-KII	Key informant interview in Kabundi
8.	C-KII	Civil society key informant interview in Lusaka
9.	G-KII	Government worker key informant interview in Lusaka
10.	Qg-KII	Quasi government worker key informant interview in Lusaka
11.	Dp-KII	Development practitioner key informant interview in Lusaka
12.	I-KII	Farmer developing their farm in Nansanga as an investor

## 6.3 Results

### 6.3.1 Tobacco production

Tobacco is produced in contractual agreements with TPL. Lala producers grow the crop on land allocated by traditional authorities, and

non-Lalas grow it on titled land because they recently moved to Nansanga on titled land. Contracts are written down and signed. Farmers are organised in cooperatives. Through cooperatives, TPL provides technical knowledge on best practices for growing, picking and curing high grade tobacco that earns more money for both parties.

Though leaf tobacco companies are unwilling to disclose how many farmers are in contractual arrangements with them (KM-KII # 3, Nansanga, April 2018), data collected for Nansanga area indicate a steady rise in the number of farmers producing Virginia tobacco with TPL farmer-support initiatives. As the number of tobacco farmers continues to rise, the following have emerged: (1) non-tobacco growers sell standing trees as fuelwood to growers; (2) tobacco growers are migrating to other places to grow tobacco where they can find more trees for fuelwood; (3) some are quitting growing tobacco; and (4) others are taking a break from its production till they find alternative sources of fuelwood. Points 1 and 2 are associated with Lala people within the farm block, while points 3 and 4 are more associated with non-Lala who have recently settled in Nansanga. Lala people have more family social networks and comparatively, more land to permit them to rotate crops while opening new areas for tobacco. On the contrary, non-Lalas are limited in this regard.

By local accounts, tobacco production is associated with affluence for two reasons: (1) TPL only allows those with potential to repay loan to join cooperatives that they support; and (2) tobacco is labour intensive and therefore, the grower needs to have means to hire additional labour beyond what the family is able to provide (TF-KII #2 & LT-KII #3, Nansanga, March 2018). **Table 6.2** below details the profile of tobacco producers in Nansanga.

**14 - Table 6.2** Status of tobacco producers in Nansanga over three growing seasons

Details	Mingomba	Kabundi
Profit range	Between \$935 and \$9,800	Between \$300 and \$4,700
Number of farmers	From initial 30 to 131 (2017-2018 growing season)	From initial 4 to 91 (2017-2018 growing season)
Land under tobacco	250ha (2017-2018 growing season)	60ha (2017-2018 growing season)
Average production	1,500kg/0.5 ha	1,500kg/0.5 ha
Loan compliance	100 percent	100 percent
Contractual arrangements	Out-grower scheme with signed contracts with TPL	Out-grower scheme with signed contracts with TPL.
Production system	Crop rotation, cultivation with hoes using casual labour force.	Crop rotation, cultivation with hoes using casual labour force.

Tobacco farms start closer to the houses and barns, and then continue expanding outwards for two reasons: 1) to reduce labour and carrying time during harvesting from the farm to the barns; and 2) during curing period (February-March) it is easier to watch over tobacco in the farms and in the barns during the day and night.

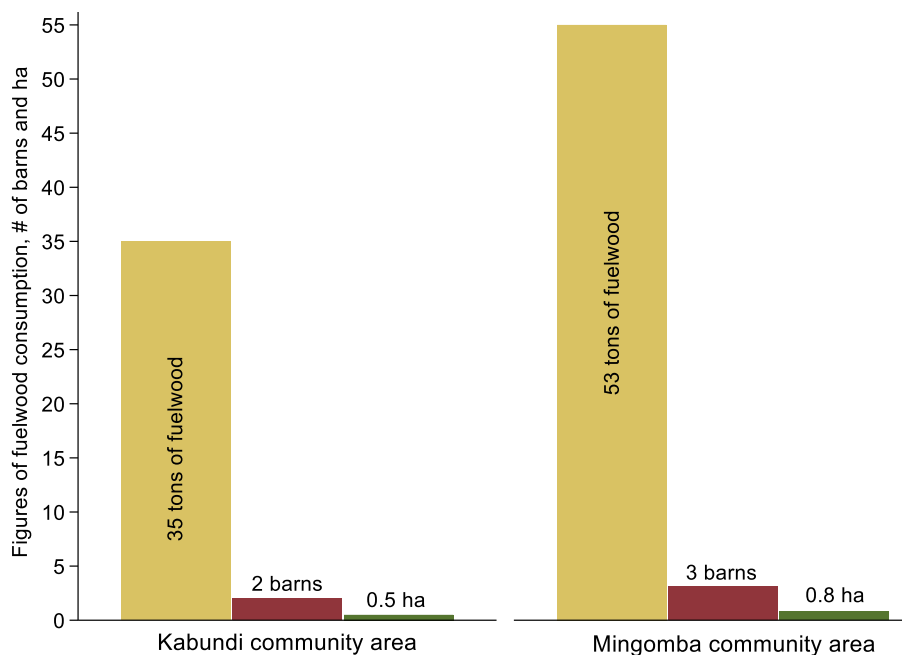


Tobacco farm behind the trees left standing to sit under. The house is in front of the barn.

**19 - Figure 6.2** A typical barn for curing tobacco in Nansanga. (Picture: A.Chilombo, Nansanga, March 2018).

Primary fuelwood that is used comes from cleared land for planting tobacco. The barns were of different sizes, generally measuring about 3.5m x 3m x 3m (**Figure 6.2** above) Tobacco production is currently the leading cause of deforestation and land degradation in the area (TF-KII #3, M-FGD #3 & researcher observation, Nansanga, March 2018).

In Mingomba the average fuelwood consumption is 53 tons year<sup>-1</sup>, average size of farms is 0.8ha; and number of barns is three per tobacco producing household. In Kabundi, average fuelwood consumption is 35 tons year<sup>-1</sup>; average size of farms is 0.5 ha; and average number of barns is two (**Figure 6.3**).



**20 - Figure 6.3** Average fuelwood consumption, # of barns and hectares per community.

The tobacco production profiles for Mingomba and Kabundi are different. This can be attributed to the development trajectories of the two community areas. The Kabundi area has the Kampumbu resettlement scheme dominated by Tonga people who are traditionally pastoralists, and the Mingomba area is only Lalas depending on production of food crops on 0.1-2 ha. Manganese mining, offering casual jobs, is also happening in Kabundi. Human population density is higher. Therefore, Kabundi has alternative economic activities that do not depend on tobacco-related fuelwood use. In addition, tobacco farms for non-Lalas are generally smaller because non-Lalas grow tobacco either on their titled land (which is smaller in size compared to customary land occupied by Lalas) or on rented land which tends to be smaller compared to customary land occupied by Lalas.

Land preparation for planting begins in August. Trees from cleared land are kept to be used for curing. However, this fuelwood dries up by February when tobacco curing begins. Part of it is also used for cooking and for evening family gatherings. Dry fuelwood burns quickly. To meet fuelwood needs, more trees are therefore cut at knee height from ground surface. Those with branches >15cm in diameter are cut at about 5-10cm from the main trunk. This way of cutting is inherited from the cultural practice of shifting slash and burn farming system (locally known as *chitemene* system). This is traditional knowledge that informs the cutting of trees to allow them to coppice (TF-KII # 8, Nansanga, March 2018). The only tree that is not often cut for tobacco curing is *Erythrophleum africanum*, locally known as *Akayimbi*. The reason is that it is extremely hard and therefore difficult to cut down.

When asked about the motivations for growing tobacco, farmers unequivocally mentioned lack of government support with agricultural

inputs, poor marketing system of maize, including delayed payments and lack of extension services. As an example, farmers cited the outbreak of armyworms, *Pseudaletia unipuncta*, during the growing season 2017-2018 for which they got no support from the government. They also cited the failure of the e-voucher system that had recently been introduced for delivering inputs.<sup>10</sup> On the contrary, TPL provides farmers with tobacco inputs, training, and pays without delays. It also supports farmers with maize seed and fertiliser in their second year of contract. They are provided with knapsack sprayers and protective clothing, receive a 10kg seed of hybrid maize and 1 x 50kg bag of basal dressing and 1 x 50kg of top dressing fertilisers for every 0.5 ha of tobacco cultivated. Second, tobacco has significantly higher returns than maize. For example, a 0.5 ha of high quality maize gives a profit of ~\$300. Growing tobacco on the same size of land can earn a farmer ~\$4 700, that is, more 15 times more (TF-KII #6 & LT-KII #1, Nansanga, March 2018). Based on reported estimates, revenues from 0.5 ha of tobacco is almost  $\frac{3}{4}$  annual salary of a postgraduate civil servant in Zambia.

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<sup>10</sup> Government of Zambia's agriculture sector reform to improve the delivery of inputs to farmers, giving them a chance to access inputs of their choice based on their needs. This is part of the Farmer Input Support Program





21 - Figure 6.4 Tobacco production and mining in Nansanga

Picture 1: Land clearing for tobacco production at the foot of Kalonga hills in Nansanga, with fuelwood cut during land clearing to be used in February-March for tobacco curing and domestic use (this is a return to the same plot after 3 years (TF-KII #13, Nansanga, March 2018)). The insert is a typical bundle, *icikoto*, of additional fuelwood for tobacco curing. Picture 2: Casual workers at Jack manganese open pit mine with a Tanzanian truck loading manganese. Picture 3: Seasonal rotation and frontier expansion for tobacco cultivation, and proximity of the farms to the kiln to ease transportation (TF-KII #3, Nansanga, March 2018). Picture 4: Estimating fuelwood consumption by weighing individual logs (Pictures by A.Chilombo in Nansanga, 2017 - 2018).

In Nansanga tobacco farmers have a 3-4 year crop rotation in the following order: virgin land is cleared and planted to tobacco in year 1. Maize is planted in year 2 for the crop to benefit from tobacco fertiliser residue. In year 3 beans, soya beans or sweet potatoes, and in some cases, cassava are planted. In year 4 tobacco is planted again. In between, new frontiers of land are cleared for tobacco production and fuelwood. For farmers with limited land, the cycle goes only to year 3. With the same level of fertiliser application and the same size of land, productivity is lower in years 2 and 3 of the rotation compared to year 4. For farmers growing on 0.25 ha and those on 0.5ha, and having a rotation of 4 years, they clear 1ha and 2ha of land, respectively every 4 years to primarily produce tobacco. This excludes trees that are felled for additional fuelwood for curing. TPL reported the promotion of planting trees such as *Sesbania sesban* among its farmers. Interviews and researcher's observations did not confirm any tree planting programs in Nansanga.

### **6.3.2 Manganese open pit mining in Nansanga**

At the time of the fieldwork in March 2018, two manganese mines, commonly known as Kampoko and Jack mines were in operation in the Kabundi area, southern Nansanga. Kampoko had been in operation 3 years earlier, and Jack began in 2017. The mines are partially in the farm block, and so the mining companies bought land from land owners. Land in the farm block is titled. Mine foremen that we interviewed revealed that the companies would continue buying land from willing land owners as they expand the mining operations in Nansanga. Land is bought on a 'willing seller, willing buyer' basis (MM-KII #2, Nansanga, March 2018).

For those on customary land where the mining operations are encroaching, they are also negotiating with the companies to be paid and then relocate (K-FGD #4, Nansanga, March 2018). Geologically, Nansanga sits on near surface manganese deposits where open pit mining is the preferred method of extraction (MM-KII #2, Nansanga, March 2018).

The mines offer casual jobs. The requirements are simple: willingness to work and being energetic. Those who meet these minimum requirements get registered (MM-KII #3, Nansanga, March 2018). No official contracts were reported during the interviews. At Kampoko mine, workers manually select manganese from heaps of stones that have been dug out by company machinery. At Jack mine, land is cleared by the company using company machinery for workers and then they dig the ground with pickaxes and shovels.

At Kampoko mine employees receive K30 (~\$2.72) for a heap of manganese, which is equivalent to 1 ton. At Jack mine, workers receive K25 (~\$2.27) for the same amount of manganese. Payments depend on the number of tons a worker has been able to make per month. Those who make 3 tons and are able to work for about 20 days in a month, receive ~K1, 800 (~\$163.20) and K1, 500 (~\$136.20) if employed at Kampoko and Jack mines, respectively (**Figure 6.4 pic 2**). Interviews with employees revealed the following:

- The payment from manganese is far much better than from farms of white farmers in the neighbouring farm block called Luombwa farm block;
- From Kabundi area and surrounding villages, more married women work in the mines than married men. Men remain to work in the farms as their wives work in the mines. The reason is that

women among the Lala people are independent because no dowry is paid to marry them. They are able to control family finances. Men remain at farms with little access to financial resources. This is contrary to studies elsewhere that have reported men's access to more lucrative economic activities (see for example Jumbe *et al.*, 2009; Kalaba *et al.*, 2013; Katz-Lavigne, 2016);

- Most male employees at the mining companies are those that have travelled from outside Nansanga, or unmarried men from different parts of Nansanga;
- There is generally labour flight from farming to mining in the following ways: the strong ones are opting to work in the mines, leaving the weak and aged to work on the farms; and even if employees get more money from mining, they use the money on clothes or beer drinking, particularly male employees. This has raised concerns over food security in the area; and
- Some people have profited from working in the mines to improve their socio-economic situations - building better houses, buying bicycles and sending children to schools.

The mining activities in Kabundi area have attracted urbanites and internationals to the area, including young people from other parts of Muchinda chiefdom. Truckers from Tanzania come to take manganese from Kabundi, while urbanites are coming from as far as Lusaka, almost 500km away, to do small scale businesses e.g selling clothes, kitchen utensils and bicycles. Local people are sometimes employed to sell items for business people coming from outside Nansanga. Mine workers also provide markets for small baking businesses such as making fritters, and

the local brew, called *umunkoyo* made based on *Rhyncosia spp* roots and maize (see **Figure 6.5** below). Registered employees in the mines get items on credit and pay money at the end of the month when they are paid.



**22 - Figure 6.5** Small businesses at Jack mine.  
(Picture: A.Chilombo, Nansanga, March 2018)

Kabundi therefore, has become a hub of socio-economic activities around manganese mining. In an interview with a health professional at Kabundi clinic, it was revealed that with the coming of internationals and urbanites, the clinic has been recording an exponential increase in sexually transmitted infections. The *Sulutani* of Kabundi also revealed that he has been receiving an increased number of marital related disputes attributed to the fast changing socio-economic dynamics in the area.

## 6.4 Discussion

In discussing the results, we first highlight the basic tenets of political ecology and its relevance to land use change attributed to the

government of Zambia's failure to successfully establish a functional farm block program. The program was an LSLA land deal that saw the conversion of about 155 000 ha of customary land to leasehold to pave the way for commercial agriculture. To the extent that LSLAs do not happen in a policy and institutional vacuum, the state is critical in shaping LSLAs deals and outcomes. In this regard, political ecology can help to provide a nuanced and necessary perspective on the relationship between land deals and the state (Wolford *et al.*, 2013), and to examine the links between conflict and the use of forest resources that underpin rural livelihoods (Deligiannis, 2012). As it 'seeks to understand how local resource use and perception are mediated by a combination of regional biophysical characteristics and processes, and the discursive-material manifestations of power that operate across geographic scales (Offen, 2004 p22),' political ecology helps to understand meanings, definitions, and identities of rural resources and environment for community survival, that are culturally constructed (Wolford *et al.*, 2013).

The conversion of land tenure has *de jure* and *de facto* reshaped the socio-ecological system in Nansanga, including relations of power among actors. In this regard, the land tenure conversion is relevant to political ecology as it seeks to understand and explain linkages in the condition and change of the social-environment nexus, with explicit consideration of relations of power among actors (Robins, 2004). As access and use of land changed, and tobacco production and mining emerged, political ecology becomes relevant to this case study based on the following assumptions: there are costs and benefits that come with change in the social-environment nexus that are unequally distributed; the unequal environmental distribution inevitably reinforces existing social

and economic inequalities; and the reinforced social and economic inequalities alter power relations among actors (Bryant & Bailey, 2004).

From the interviews with different stakeholders, it was established that tobacco production and manganese have ridden on the government's infrastructure for the farm block program on one hand, and the failure to establish a functional farm block, on the other. This underscored and confirmed the pivotal role of the state in shaping LSLA deals but also their outcomes. Thus, three factors are relevant to the understanding of the role of the state in the context of LSLA. According to Wolford *et al.* (2013), these are:

- The physical environment is characterised and presented in ways that shape land deals. For example, Nansanga area was advertised as an area with rivers for irrigation that offer huge agricultural potential, and is found in the third ecological zone with highest annual rainfall;
- LSLAs highlight expressions of different forms of power and institutions (such as the state over leases and state land, and traditional authority over customary) and how these different forms of power shape access to land as well as to labour, income or capital, technology, and rights; and
- LSLA has triggered the emergence of inner workings of states and other power dynamics as demonstrated by urbanites, people in the diaspora and other political elites who have contributed to shaping new understandings and articulations of territory, sovereignty, authority and subjects. This includes the new understanding of the value of land triggered by the Lands Act 1995 that allowed for land tenure conversion thereby creating land markets; and the usurpation

of power from formal institutions by political cadres to illegally allocate land. In this array of actors, there is a constantly shifting dialectic in interactions between society and land-based resources, and also within classes and groups within society itself (Robins, 2004). *Political cadres* in Zambia are political party sympathisers who unlawfully engage in land distribution as a way of compensating themselves for supporting political parties. They are an inner working group within the political system that is however influential in land issues, among others (for example, see a media story in Lusaka Times<sup>11</sup>).

Converting land tenure from customary to leasehold introduces a new bundle of property rights that puts controls on the usufruct rights to land of rural communities. This creates resource scarcity for rural communities with concomitant social effects such as household economic decline, migration, or local social segmentation (Deligiannis, 2012). In the specific context of Nansanga, manganese mining has emerged as a new land use but also as a double-edged sword development project. According to Cernea (1995), development projects that involve resettlement of communities generally lead to landlessness, joblessness, homelessness, marginalisation, increased morbidity, food insecurity, loss of access to common property and social disarticulation. Allocating land and labour to mining is slowly disabling local systems of livelihoods, production, and socio-political organisation, but also creating resource

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<sup>11</sup> Cadres warned against land grabbing. Lusaka Times, August 11, 2016 retrieved on October 23, 2018 from <https://www.daily-mail.co.zm/cadres-warned-against-land-grabbing/>



and labour scarcities through enclosures and appropriation by private company with state facilitation (Robbins, 2012). For Nansanga, it is logical to suggest that as the open pit mining of manganese continues, communities will experience these aspects more and more.

Land is not only a factor of production where communities in Nansanga apply their labour. Nansanga is Lalaland, that is, it is a Lala territory. The emergence of mining is not only leading to labour flight and landlessness through land sales, it is also leading to '*de-lalalisation*' of Lalaland, that is, '*de-territorialisation*,' or foreignisation (Zoomers, 2010) of land as a local resource but also as a territory.

Political ecology has been used in various similar case studies to explore the human-environment interaction. For example, Gillon (2010) analyses the environmental fix centred on biofuel production as a socio-ecological project in the United States of America. Ariza *et al.* (2010) reveal a discrepancy between field results and policies that promoted the production of jatropha in India using political ecology. Le Billon (2001) analyses how armed conflict are related to the geography and political economy of natural resources and the power dynamics that they generate. Baba (2014) uses political ecology as a lens to understand environmental management and resource control in oil-rich Niger Delta region of Nigeria.

Against this background that briefly highlights basic tenets of political ecology, in the following sections we discuss tobacco production and manganese mining. We do so in light of the findings presented in the previous sections. We also include a section that reflects on the parallels between tobacco production and manganese mining in Nansanga.

#### **6.4.1 The political ecology of tobacco production in Nansanga**

Tobacco production has exponentially risen citing better contractual arrangements with Tombwe Processing Limited (TPL), a tobacco leaf company. The government's failure to successfully implement the farm block program has boosted tobacco production that has reportedly improved the socio-economic situation of those growing it, and indirectly benefited others through spillovers. As in this study, benefits from growing tobacco have been documented in other studies (see Geist, 1999; Geist *et al.*, 2009; Hu & Lee, 2015; Jimu *et al.*, 2017; Otañez & Glantz, 2011). Despite these benefits, tobacco is associated with deforestation and land degradation (see Lecours *et al.*, 2012; Mangora, 2015; Mwita, 2012; Sauer & Abdallah, 2007); health problems (Van Minh *et al.*, 2009; World Health Organization, 2004); and labour concentration (Goma *et al.*, 2017). The most important distinguishing factor between our study and those we have cited above is the failed role of the government which has created a vacuum that TPL is filling.

Through interviews and researcher's observation, this study confirmed that tobacco is currently the leading cause of localized deforestation in Nansanga as more land is brought under tobacco growing, and as producers look for more fuelwood for curing tobacco. Other studies have also reported on the increased hectareage of land for tobacco (see Jimu *et al.*, 2017; Mangora, 2015; Mwita, 2012; Novotny *et al.*, 2015). There is inconsistency among results regarding fuelwood consumption for tobacco curing by smallholders (Abdallah & Monela, 2007). The average land under tobacco per household for both Mingomba and Kabundi is 0.7ha, and wood consumption 44 000kg (44m<sup>3</sup>). Observed fuelwood requirement is 29kg to cure 1kg of tobacco.

This figure is above 11kg, 12kg, 14kg and 19kg estimated by Musoni *et al.*, (2013) in Zimbabwe, Jew *et al.* (2017) in Tanzania, Munanga *et al.* (2017) in Zimbabwe and Mangora (2015) in Tanzania, respectively. However, it is very close to the 31kg reported by Jimu *et al.* (2017) in the miombo ecoregion. Despite the different figures, Jimu *et al.* (2017) observe that tobacco production threatens the miombo ecoregion, and accounts for 15% of deforestation in Zimbabwe and 26% in Malawi.

Though Goma *et al.* (2017 p1) assert that 'it is not at all clear if tobacco farming is even a livelihood worth pursuing for Zambians,' the findings of the current study suggest that under the current contractual conditions with TPL and the failure of the farm block, farmers will continue growing tobacco, and growers see it a livelihood worth pursuing. Based on the interviews with farmers and field observations, there are only two conditions that can stop tobacco production in Nansanga: i) lack of fuelwood or other means of acquiring it; and ii) providing alternative livelihoods that would be more lucrative than growing tobacco. Since point 2 is less plausible in the current agricultural policy dispensation in Nansanga, point 1 is more important. It is providing employment, and farmers have additional income, enabling some of them to even buy cars, oxen and bicycles. For now, findings suggest a win-win situation between TPL and tobacco growers. In the long term, as Rasmussen *et al.* (2018) noted, tobacco production will not lead to a win-win social-ecological outcome to sustain its production. As in Geist (1999 p18), tobacco production in Nansanga has emerged as 'a particularly difficult dilemma for development as it generates a range of employment, income, foreign exchange, and other cash-contributing effects, while the damage to public health and to the environment in the long term appears substantially to outweigh the benefits.'

#### **6.4.2 The political ecology of Manganese open pit mining in Nansanga**

Narratives around the biophysical and demographic characteristics, and land tenure of the area drove the investments in Nansanga for commercial agriculture or mining. The government understood Nansanga as an area with commercial agricultural potential given the rainfall patterns (ecoregion III with ~1000 – 1200 mm annual rainfall) and multiple rivers that would support irrigation system. Manganese mining began after the mining license was issued by the Ministry of Mines in Lusaka, the nation's capital. Land in Nansanga was characterised and presented in ways that attracted interest for both agriculture (by the Ministry of Agriculture) and mining (by the Ministry of Mines). Institutionalised and power-laden policies (Robbins, 2012) have led to the emergence of new actors with their own understanding and use of land in Nansanga. Though the mining companies obtained mining licenses from the Ministry of Mines to start mining in Nansanga (Inv-KII #1, Nansanga, March 2018), other interviews with key informants at the Ministries of Agriculture and Lands, and the Zambia Environmental Management Agency revealed lack of knowledge about the mining operations within the farm block. This revelation highlights silos within government institutional structures and policy inconsistencies (see Kalaba *et al.*, 2014).

Manganese mining has become a lucrative economic activity for people within Nansanga and others coming from urban areas for small businesses. More people are drawn to mining chiefly because payments are faster and more predictable. Every month they are paid while for tobacco and other crops they have to wait for almost seven to eight

months. Manganese mining has also come as an alternative source of income that is not agriculture-related which Lalas do throughout the year.

Manganese mining is mainly being done on titled land that is part of the farm block program. With the titling of land in Nansanga, some community members who are in socio-economic difficulties are using their land as a coping mechanism by selling it to mining companies (more details in **Chapter 7**). As Chimhowu & Woodhouse (2006) observed, land titling for economically poor communities can be a curse as it can lead to landlessness when they are in distress. Community members do not have access to information about the actual value of titled land, and therefore, sell land at 'give away' prices, particularly if they urgently need money. For example, 1 ha of land could be sold for K5 000 (~£320) (K-KII #, K-FGD #4, Nansanga, March 2018). The promise to establish a farm block after converting land tenure has led to GRZ mistrust by communities. *'We don't know what will happen next, it is better to sell the land, you get something rather than being evicted like our friends* (K-FGD #3, Nansanga, March 2018). False promise and mistrust are therefore driving the sale of land by some community members. They are selling their labour to the mines and tobacco producers, and their land to mining companies. They are therefore selling land and labour, the most important assets that they have for coping with shocks.

The flourishing manganese mining in Nansanga as an economic activity fills the gap that crop production has left owing to the failure of the farm block to function as it was planned. Failure here is in terms of government's vanished role in the farm block, constrained financial resources to complete the farm block infrastructure (even though only 17% of the total budget was spent on infrastructure development), the

collapsing of dams and irrigation canals and lack of visible agricultural production linked to the farm block outgrower scheme plan.

### **6.4.3 Parallels between tobacco production and manganese mining**

Tobacco production is currently being done on customary land (by the Lala people) and titled land (by non-Lala people who have recently moved to Muchinda chiefdom) following a contract farming model. In this model smallholder farmers are assisted with seasonal inputs, finances, technical support and quality monitoring systems that they need to meet production and quality contractual obligations (Burch *et al.*, 1990; Poulton *et al.*, 2010). In this way, resource deficient farmers are integrated into the wider national and global economy by separating land ownership from the power to make land use decision (Burch *et al.*, 1990). From the perspective of new institutional economics, contract farming emerges as an agricultural institution in response to market imperfections, pervasive risks, information asymmetry and access to finance which smallholder farmers face (Key & Runsten, 1999; Deininger, 2011). Contract farming, as an institutional arrangement, requires that parties agree on terms that reduce transaction costs from market failures, or the failure of the government to provide input, credit, insurance, infrastructure and the required market institutions (Terenggonu *et al.*, 2010). In the context of understanding the precise role of agriculture in economic development (Christiaensen *et al.*, 2011), contract farming remains one of the hotly debated institutional arrangements of production and marketing of agricultural commodities in developing countries (Oya, 2012).

Contract farming is generally associated with the availability of cheap labour and land resources to ensure production at scale;

production of cash crops which are not locally consumed but exported; involvement of financially empowered domestic actors and state bureaucracy; and vertical integration which typically creates a power structure class of employers and employees, given that the relative bargaining power of the contracting parties is seen as pervasive (Oya, 2012). Consequently, although the corporation is not necessarily the land owner, contract farming system separates land ownership by farmers and farm families from the power to make decisions about land use, thereby marginalizing them (Burch et al., 1990).

While tobacco production has flourished based on contract farming, manganese mining has emerged using a different production model. At the time of fieldwork, mining was being done on titled land which the mining companies had bought from land owners who had bought it during the establishment of Nansanga. Thus, land owners, including Lalas and non-Lalas, have had to sell land to the mining companies. Besides land appropriation, mining is flourishing on the use of labour of both Lalas and non-Lalas who have emigrated to the chieftdom from other villages and towns.

The purchase of land from land owners in Nansanga farm block did not involve the Ministry of Lands. The mining companies dealt directly with land owners (MM-KII # 2, Nansanga, March 2018). In this way, the transaction costs in land purchase were almost none. As the open pit mining of manganese continues in the area, more land will be bought from land owners, and more customary land will need to be converted to allow mining to continue. Indications are that households on customary land will be resettled to have the land tenure converted for mining operations. This means the process of moving land from customary tenure into private hands is likely to continue as mining prospects in the

Kabundi area continue. In this particular case, the mining companies are directly interacting with community members who are willing to sell the land knowing that it is a matter of time before they lose it to the companies (K-FDG #4, Nansanga, March 2018).

The case of Nansanga farm block has particular resonances with other cases of scaling down, cancellations, abandonments or transformations of business investment models of LSLA deals. As Locher & Sulle (2015) indicate, when LSLA projects fail, investors abandon projects or transform investment models. In Ghana, failed jatropha LSLA deals have been transformed into rice production and other crops, and solar production (Ahmed et al., 2017; Antwi-Bediako, 2018). In Madagascar, after a civil unrest the maize and palm oil project by Daewoo Logistics in Madagascar was cancelled (Cotula et al., 2009). In Ethiopia, citing land unsuitability, investors abandoned land after clearing forest areas. Elsewhere, investors started the production of timber and charcoal in Ethiopia, contrary to contracted plans of land use (Moreda, 2017). In Mozambique, Fingermann (2015) attributes the failure of the ProSavana program to unreconciled political interests and expectations between Brazil, Japan and the Mozambican government.

Finally, while Nansanga farm block is unquestionably in *limbo of development*, the pieces of infrastructure that were developed at the start of the farm block, particularly roads, have supported the emergence of mining and tobacco production. In this regard, the development status of farm block is a backbone on which tobacco production and mining as economic activities have opportunistically flourished. There are obvious environmental impacts (e.g deforestation, land degradation, chemical application), power dynamics (e.g users of customary land vs companies with financial power), and social impacts (e.g landlessness, displacement,



food insecurity) of tobacco production and open pit mining both in the short and long terms. As these activities continue, it is not non sequitur to suggest that the local systems of livelihood, production, and socio-political organisation and resource and labour scarcities are increasing, embedded in institutionalised and power-laden land management, access and use (Robbins, 2012). Though there are these social and environmental impacts, based on the interviews with tobacco producers and employees in the two mines, and our observations as researchers, there are positive economic benefits that are coming to the area.

## **6.5 Conclusion**

This study aimed at understanding the emergence of tobacco and mining as economic activities in Nansanga farm block, an area that was designated for food crop production following an LSLA deal. The study sought to understand ways and reasons why the failure to fully develop Nansanga farm block has led to the emergence of tobacco production and manganese mining.

The findings confirm that the development of Nansanga has failed in that the government has decided not to allocate any more funds to complete the development of the farm block. In addition, the developed infrastructure such as dams and irrigation canals have already crumbled, and plot demarcations and roads to farms are overgrown with bushes. We did not find any policy guidance on the future development of the farm block. Those who bought land as potential investors, have not begun any developments on their farm plots. Some of them are even selling land to mining companies. It was in this context that we have defined Nansanga farm block as a failed LSLA deal. Tobacco production

and manganese mining have emerged linked to the failure of the farm block. Results show that these two economic activities have emerged following the vanished state role in the development of Nansanga. The economic activities have led to job creation thereby increasing incomes for those who are participating in them directly or indirectly.

Land titling of previous customary land has created land markets on which manganese mining is flourishing. While this is cushioning the socio-economic situation of some landowners, it is slowly creating a class of landless people whose livelihoods are tied to the exploitation of land and associated resources. Currently, labour is an important resource in both tobacco production and manganese mining. With age or in case of illness or other shocks, people will still need land to fall back on.

The case of Nansanga farm block shares similarities but also dissimilarities with other LSLA deals that have failed to achieve their objectives. The similarities include the following: first, having a legal and financial leverage in development projects (Cernea, 2008), the state plays an active role in promoting LSLAs, mediating the access to land, including checking and validating claims to land. Second, once the LSLA deal is concluded, the state's role in LSLAs vanishes even if it is still critical in ensuring compliance to contracted implementation standards. Third, failed LSLA deals become a mechanism through which land is expropriated from communities in that land is never given back to previous users or reverted to previous tenurial status. Finally, failed LSLA deals change into other economic activities if not completely abandoned. The defining dissimilarity that sets the case of Nansanga farm block apart is that the change of investments and economic activities, and land use change and concomitant socio-economic and environmental vicissitudes have not been orchestrated by investors with whom the LSLA deal was

made, that is, land buyers. The changes have been triggered by economic players who took advantage of the government's absence and vanished role in the farm block. These economic players, the tobacco leaf company and manganese mining companies, were not at all involved in the farm block development either as land buyers or settlers.

Agriculture for rural development as the farm block program was initiated, remains the state's policy space. The study has highlighted that the policy failure and the state's vanished role in Nansanga led to the unintended creation of a 'when the cat is away, the mice will play' scenario of two lucrative but also highly extractive economic activities. Land for the local Lalas in Nansanga is not only a means of production, but it is their territory and mark of their identity. As more customary land gets into private hands through the production of tobacco and manganese mining, these two economic activities are leading to labour flight, cases of landlessness and *de-lalalisation* of land.

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## **7. Coping with Impacts of Failed Large Scale Land Acquisitions: Lessons from Nansanga Farm Block in Zambia**

Andrew Chilombo and Dan van der Horst  
School of GeoSciences, University of Edinburgh

**Abstract:** In recent years, a surge in large-scale land acquisitions (LSLAs) in the global south has captured the attention of activists, policy makers and academics. Whilst proponents of LSLAs cite the benefits of enhanced food security, biofuels, eco-tourism etc., opponents have been concerned with the fate of local communities suffering from land dispossession and involuntary displacements, environmental degradation, diminished local food security and sovereignty and casualisation of farm workers. Most academic work has focused on understanding drivers and impacts. But LSLAs can be lengthy and complex operations; cancelled or abandoned, reshaping and being influenced by diverse biophysical, socio-cultural and political landscapes in which they unfold. Few attempts have been made to understand how local communities cope as LSLA projects evolve, and sometimes cancelled or abandoned. Addressing this gap, this chapter examines coping mechanisms of local communities in Nansanga farm block, a government of Zambia-led LSLA program on 155 000 ha of customary land. Participatory rural appraisal methods were used in two community areas. Our fieldwork shows Nansanga is an LSLA in limbo of development: state-funded infrastructure has crumbled; many private investors have not developed the land they bought; and there is no policy clarity on the program. Tobacco contract farming linking producers to

markets, and manganese open pit mining have emerged as important economic activities. There are planned and spontaneous relocation of people, land dispossession in some places and insecure future access to dambos that used to be communal land. Our findings suggest that pre-existing socio-economic status is key in understanding the coping strategies of local households to respond to Zambia's dynamic LSLA landscape. Low wealth households tend to lose out while high wealth households are more likely to take advantage of emerging opportunities. In addition, LSLAs (can) reinforce pre-existing socio-economic community challenges by transforming livelihood opportunities rather than creating them. The findings suggest that for most households, asset portfolios are too lean to adequately enable them to cope with the socio-economic and environmental impacts of unfolding LSLAs.

**Author contributions:** AC collected data and designed data collection approaches with input from DvdH. AC analysed the data and wrote the manuscript. DvdH reviewed the manuscript and suggested improvements. An edited version of this chapter has been submitted for publication in the *Journal of Agrarian Change*

## 7.1 Introduction

Large scale land acquisitions (LSLAs) have been supported by national governments in the global south and by overseas investors for poverty alleviation, food security, rural development, employment creation and energy security (see German *et al.*, 2011; Schoneveld, 2011; Abbink, 2011; Deininger & Byerlee, 2012; Robertson & Pinstrip-Andersen, 2010; Rulli & D'Odorico, 2014; African Union *et al.*, 2014). However, LSLAs are also criticised on account of land expropriation, evictions, land conflicts,



reinforcement of inequalities, landlessness and corruption (see Deininger, 2011; FIAN, 2010; Borrás, 2010; De Schutter, 2011; Deininger & Byerlee, 2012; Osabuohien, 2014; Abbink, 2011; Ali *et al.*, 2014). The generic validity of such claims needs to be treated with some care; LSLAs may vary in design and intent, and their outcomes are diverse in specific socio-ecological contexts at different spatial but also jurisdictional scales (Oberlack *et al.*, 2016). LSLAs are shaped by socio-economic conditions, current production systems, perceived resource potentials and power dynamics among stakeholders and state institutions in which they unfold (Suhardiman *et al.*, 2015; Dell'Angelo *et al.*, 2017).

Implementations of LSLAs deals are characterised by cancellations, abandonment, scaling down and transformations of investments models (Schoneveld, 2017; Locher & Sulle, 2015). Examples include the transformed failed jatropha projects in Ghana (Ahmed *et al.*, 2017; Antwi-Bediako, 2018); government repossession of land of failed projects in Ethiopia (Moreda, 2017), and the failure of ProSavana in Mozambique (Fingermann, 2015). Cotula *et al.*, (2009) also report on the cancellation of the controversial maize and palm oil Daewoo Logistics in Madagascar.

Limited positive LSLA impacts such as increased monetary income, improved food and water security and food consumption expenditure have been reported (see Bottazzi *et al.*, 2018 in Sierra Leone and Herrmann (2017) in Tanzania). However, negative ones abound in literature (see for example Dwyer, 2014; African Union *et al.*, 2014; Shi, 2008; Milgroom, 2015). In a meta-analysis, Oberlack *et al.* (2016) identify the following adverse impacts of LSLAs: loss of access to land and natural resources, more conflictual livelihood contexts, increased intra-community inequality, contested compensation, ecosystem degradation,

adverse labour transformation, maladaptive livelihood strategies, food security decline and erosion of social capital. Limited reports on positive impacts and outcomes could be attributed to the incipience of LSLA deals. In other words, when the implementation of an LSLA deal begins, there might be displacements that will be reported on more rapidly than other socio-economic benefits that may come years later.

Following the Lands Act 1995 that liberalised land markets in Zambia, the government decreed the establishment of 9 farm blocks in the country in 2002 to develop rural areas, improve food security and reduce rural-urban migration (GRZ, 2005). Nansanga, established on 155 000 ha of previously held customary land, is the most developed farm block, and the most heavily state funded single farm block since independence in 1964. The government's plan was to carve up customary land into commercial farms of different sizes, sold to both domestic and foreign investors, whilst the local communities were to be compensated and locally resettled with improved facilities and new income opportunities (GRZ, 2005). Commercial farms would provide employment to local communities, in addition to participating in contract farming on their own (remaining) plots of land (see Sambo *et al.*, 2015).

Nansanga farm block is in *limbo of development*. Developed infrastructure (dams, irrigation canals) has crumbled; electrification has not been done; demarcated parcels of land, including roads leading to the parcels are overgrown with bushes; the government does not have the financial resources anymore to continue with the development of the farm block; and there is no policy clarity to guide investments in the area. Meanwhile, land has been converted from customary land to leasehold. Tobacco contract farming linking producers to markets, and manganese open pit mining have emerged as important economic activities. There

are planned and spontaneous relocation of people, land dispossession in some places and insecure future access to dambos that used to be communal land.

Against this background, the aim of this chapter is to explore the coping mechanisms of rural communities to an LSLA program in *limbo of development*. To the best of our knowledge, there was no socio-economic and environmental baseline data to enable an impact assessment or any longitudinal study. We used participatory rural appraisal methods to explore the coping mechanisms of communities in the absence of status quo ante data, which would have favoured a more analytical than exploratory approach of coping mechanisms and livelihoods. Therefore, participatory approaches enabled a qualitative exploration of stereotypical narratives regarding processes, relations and structures (Oya, 2004) of coping mechanism of communities in Nansanga farm block (henceforth Nansanga). The coping mechanisms are embedded in the use of land for agriculture and exploitation of forest resources. Conceptually, an exploratory approach to understand coping mechanisms for this study is embedded in the sustainable livelihood framework. This is because coping mechanisms are intertwined with livelihoods in rural communities. Livelihoods constitute capabilities, assets and activities for a living, and they are sustainable if they can cope with and recover from stresses and shocks without undermining the natural resource base (Scoones, 1998).

This chapter is structured as follows: we first present the materials and methods in Section 7.2, and then results in Section 7.3. We then discuss the findings in Section 7.4, and relate the findings to political ecology in Section 7.5. We finally conclude, highlighting the key findings of the chapter in Section 7.6.

## 7.2 Materials and methods

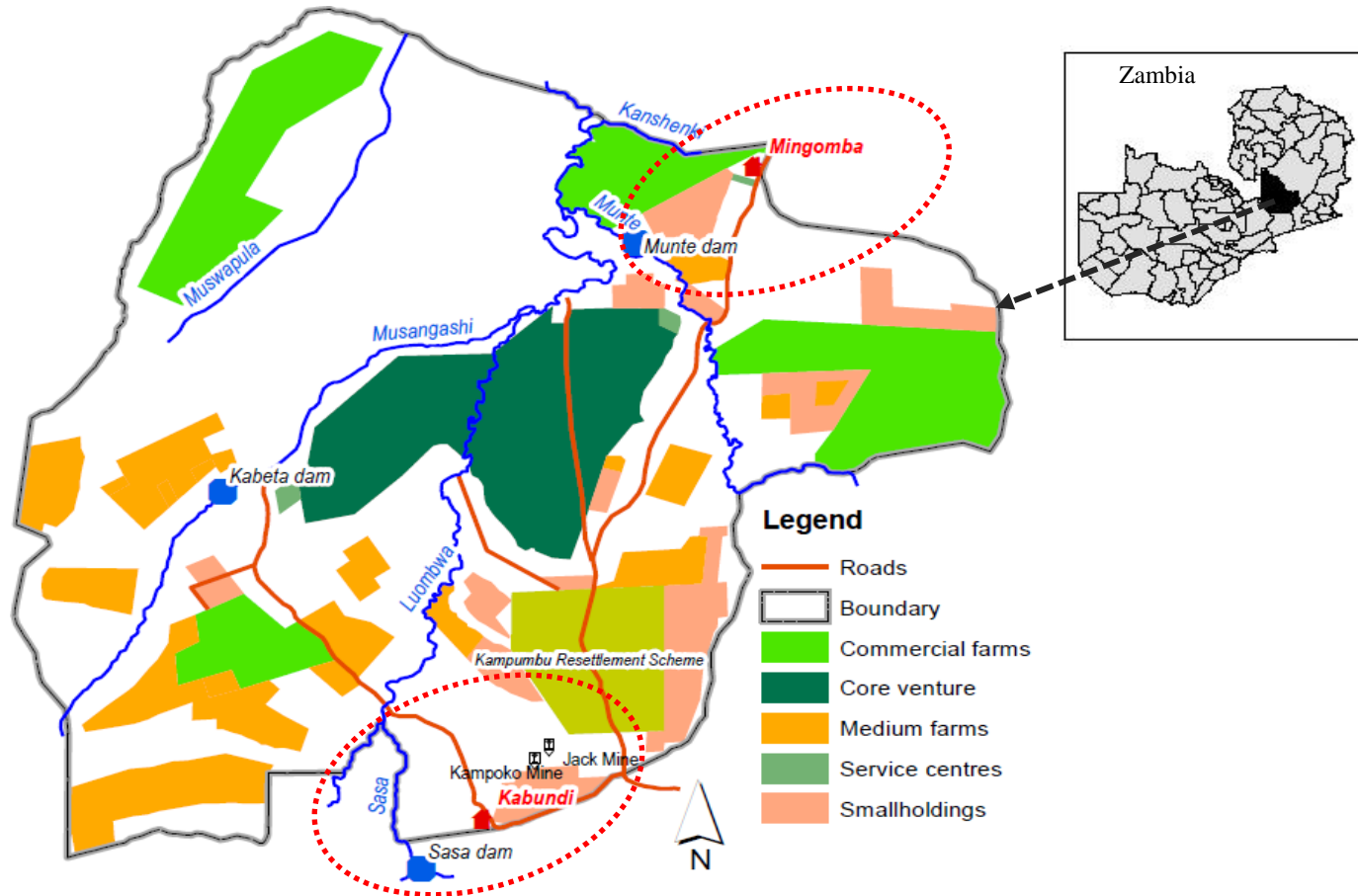
### 7.2.1 Study area

Fieldwork was carried out among the Lala people of Mingomba and Kabundi, two communities in the north and south of Nansanga farm block, respectively. **Map 7.1** shows the two communities, and their key characteristics are summarised in **Table 7.1** below.

**Table 7.1** Mingomba and Kabundi communities of Nansanga

Details	Community	
	Mingomba	Kabundi
Sub-sections	16	17
Population	~650 registered households/~3,900 people.	~465 registered households/~2,790 people.
Infrastructure	Trunk road, Munte dam and Munte bridge.	Trunk road, Sasa dam and unusable Luombwa bridge.
Evictions	Threats beyond Bwande river, and Mingomba central by 'Badcock's Farm.	Threats of evictions.
Others	Peasantry, tobacco production and community small businesses.	Peasantry, Manganese mining, tobacco production and small businesses.

Source: Author's compilation from fieldwork (December 2017).



**23 - Figure 7.1** Map of Nansanga farm block map showing Mingomba and Kabundi community areas. Source: Author's creation based on data collected during the initial scoping fieldtrip in 2017, combined with the map provided by the Zambian government (GRZ, 2006).

In Mingomba people historically lived in large settlements in Kanshinke, north of current day Mingomba that got its name from the now non-existing *mingomba* birds (hornbill, scientific name *Bucerotidae*). Traditionally, umugomba (singular) is a sign of good omen. Land was allocated according to clans, particularly the wasp, goat, rain, elephant and warthog. In 1973 the government forced communities to regroup near passable roads to facilitate agricultural extension services. However, lack of water, disputes over land and witchcraft forced people to return to Kanshinke. Years later, the Senior Chief Muchinda began allocating land to households again in Mingomba. Households were set apart from one another.

Kabundi, on the other hand, was the first palace of Senior Chief Muchinda years before 1960. Given the presence of the palace, Kabundi was established as a sub-district when Serenje town, about 54km away, was established as the main district town in 1940. A health post, local court and school were established, which were rare facilities in those days. Among Lalas, the successor to the throne is always a man and comes from the Nyendwa clan who initially settled in Kambili near the source of Bwande river. This area is a sacred burial place for the Senior Chief Muchinda who died in 2010. Nansanga is largely a cashless economy, and communities depend on agriculture and the exploitation of forest resources for the livelihoods. They mainly cultivate maize, sorghum, beans, cassava and groundnuts. Their socio-economic wellbeing is therefore, tied to land and forests (see seasonal calendar – appendix 2). Socio-culturally, communities in Nansanga are homogenous. They are Lala people, and their traditional ceremony, *Icibwela mushi* (return to then village), is tied to the use of land for small-scale farming. *Icibwela mushi* indicates people's return to the village from farming activities with big

harvests to celebrate. They also rear village chickens, ducks, goats and pigs.

### 7.2.2 Methods

To understand the coping mechanisms of community members, the study focused on the micro-level processes at the community level. The study used qualitative participatory rural appraisal methods: focus group discussions (FGDs) (n= 4 in each community area), key informant interviews (n=6 in each community, plus n=11 outside the farm block), participatory resource mapping, transect walks and participatory wealth ranking (n=50 households, i.e 25 in each community area). The number of households was guided by data saturation. The lead author of this chapter conducted the interviews in Bemba, the local language.

With the support of the *Sulutani* and *Chilolos* (village heads and chief advisors, respectively), households were selected using convenience sampling technique. The selection criteria in Table 1.2 in Chapter 1 were used. The households were classified into 3 wealth classes, based on the knowledge of *Sulutani* and *Chilolos* of the sampled households. As in Oya (2004) the categorisation of households into 3 wealth classes was based on two factors: i) the nature of labour appropriation, that is, forms of labour mobilisation and labour surplus appropriation of each household; and (ii) the degree of reliance on their own means of production (including land) as opposed to labour-power. Households were notified in advance, and after an introduction by the *Sulutani* or *Chilolo*, the head of each sampled household was interviewed in the presence of the spouse who also contributed in giving responses. FGDs and key informant interviews served to triangulate the findings from

household interviews, particularly to confirm characteristics of asset portfolios of each household wealth class.

Additionally, ‘evening fire’ discussions were used to ask more detailed questions about issues that were not clear during day interviews. ‘Evening fire’ discussions were informal, however informative and allowed for the exploration of the socio-cultural fabrics, including information about the socio-cultural ‘secrets’ of life in communities, such as witchcraft and traditional medicines for non-publicly discussed ailments.

**Table 7.1** below presents the categories of respondents and how they have been coded in this chapter. The respondents have been anonymised. In this regard, the coding starts with an identity code, the number, the place of the interview and the date. For example, an interview in March 2018 with number 4 key informant in Kabundi, will be written as follows: K-KII # 4, Nansanga, March 2018. A detailed description of these respondents has been given in **Chapter 2**.

**15 - Table 7.1** Summary of categories of respondents

No.	Identity code	Respondent
1.	Mm-KII	Key informant mining company foreman
2.	TF-KII	Key informant tobacco farmer
3.	LT-KII	Key informant tobacco leaf company employee
4.	M-FGD	Focus group interviews in Mingomba
5.	M-KII	Key informant interview in Mingomba
6.	K-FGD	Focus group interview in Kabundi
7.	K-KII	Key informant interview in Kabundi
8.	C-KII	Civil society key informant interview in Lusaka
9.	G-KII	Government worker key informant interview in Lusaka
10.	Qg-KII	Quasi government worker key informant interview in Lusaka
11.	Dp-KII	Development practitioner key informant interview in Lusaka
12.	I-KII	Farmer developing their farm in Nansanga as an investor



## 7.3 Results

This section presents results from the field. Coping mechanisms in Nansanga are tied to land and the exploitation of forest resources, as these constitute livelihoods. In Section 7.3.1 we present results on caterpillars and mushrooms as these two were spoken about frequently and in details during FGDs. In Section 7.3.2 we present other community forest resources focusing on how communities use them for their livelihoods in Nansanga. Forest resources define the socio-economic wellbeing, and therefore an understanding of forest resources, harvesting patterns and perceived abundance is relevant to the community coping strategies. In Section 7.3.3 we present on the development of Nansanga and concomitant community-level changes, before presenting on community wealth ranking in Section 7.3.4. Finally, we present the community coping strategies in Section 7.3.5.

### 7.3.1 Caterpillars and mushrooms

Three types of locally recognised caterpillars (black, green and white) were reported and their associated tree species. Five main species of mushrooms were also reported (**Table 7.2**). Mushroom and caterpillars constitute sources of relish. Mushrooms are moderately scarce while caterpillars were reported to be in the scarcest category.

**16 - Table 7.2** Reported caterpillars and mushrooms in Nansanga farm block

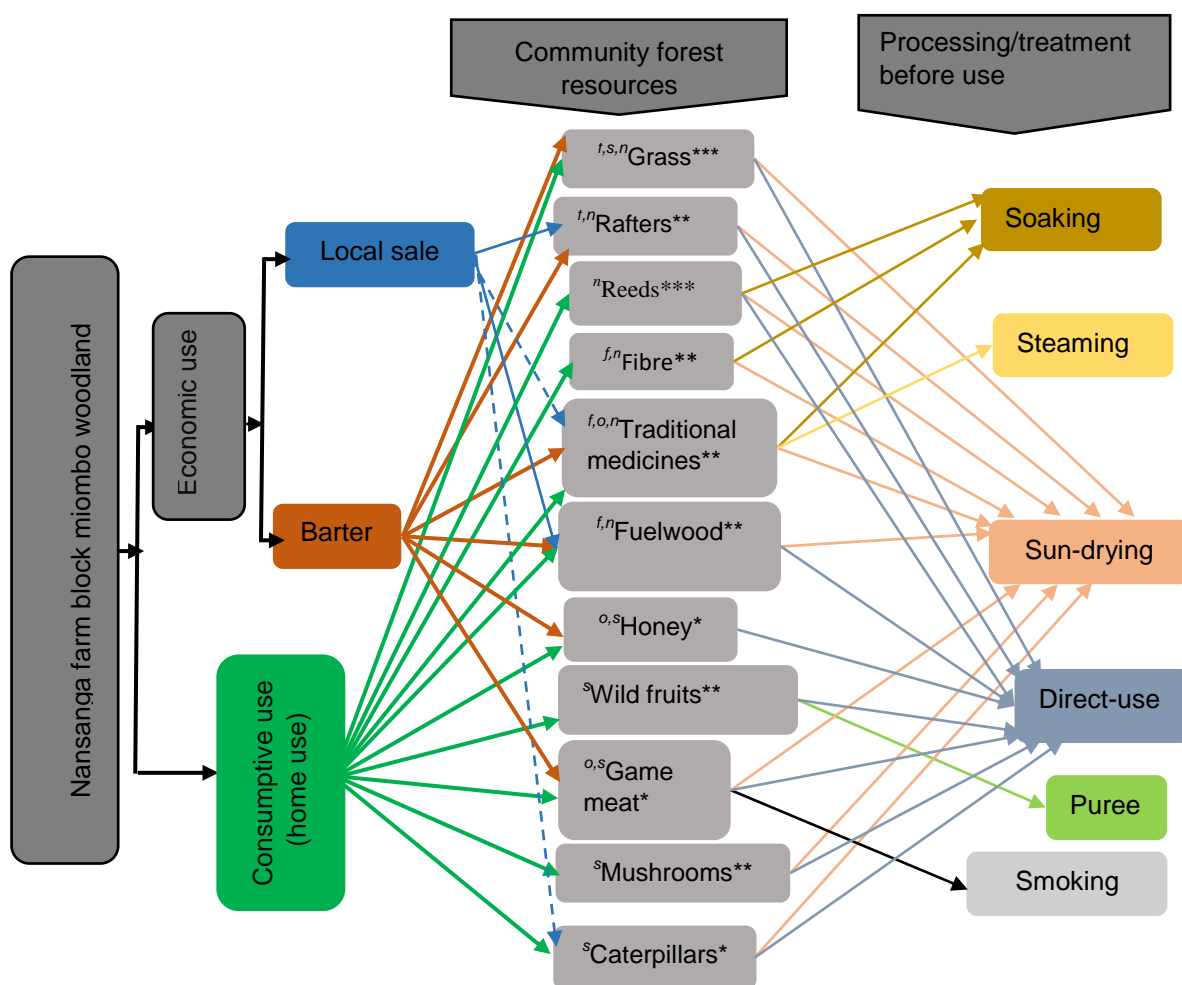
Local name	Scientific name	Associated tree species
<b>Caterpillars</b>		
Mumpa (black)	<i>Gonimbrasia zambesina</i>	Mainly <i>J. paniculata</i> and <i>I. angolensis</i>
Ifisukubilya (black)	unknown	<i>U. kirkiana</i>

Imishila (black)	unknown	<i>B. longifolia</i>
Cipumi (green)	<i>Gynanisa maja</i>	<i>J. paniculata</i>
Imikoso (white)	<i>Cirina forda</i>	Various but mainly <i>B. africana</i>
Mushrooms		
Bwitondwe	<i>Cantharellus afrociarius</i>	Generally associated with <i>Brachystegia</i> , <i>Julbernardia</i> , <i>Isobertinia</i> , <i>Monetes</i> and <i>Uapaca</i> species.
Ubukungwa	<i>Termitomyces titanicus</i>	
Tente	<i>Amanita zambiana</i>	
Kabansa	<i>Lactarius kabansus</i>	
Chiteleshi	<i>Russula ciliata</i>	

Communities reported perceived change in the level of abundance of trees associated with caterpillars and mushroom. From the most abundant to the least, communities reported the following order: *J. paniculata*; *I. angolensis*; *B. longifolia*; *M. africanus*; and *U. kirkiana*. That is, community members perceive *J. paniculata* to be relatively abundant, and *U. kirkiana* to be relatively scarce. The relative abundance of the species has implications on the relative abundance of caterpillars and mushrooms in Nansanga. This is attributed to tobacco production, demarcation of plots and making of roads that involved cutting down of trees, open pit manganese mining, and population growth particularly in Kabundi with its mining operations and Kampumbu Resettlement Scheme. However, there is also a belief that caterpillars are spiritual. Their availability has been affected by the coming of non-Lalas in Nansanga. Non-Lalas, through non-adherence to Lala people's way of life (indiscriminate felling of trees, fights, licentious behaviours, uncontrolled fires) have angered the spirits that have rendered forests unproductive in terms of caterpillars (M-FGD #4 & K-FGD #3, Nansanga, December 2018).

### 7.3.2 Community forest resources in Nansanga farm block area

Community members are forest-dependent and smallholder farmers, and Nansanga is still largely a non-monetised local economy.



24 - Figure 7.2 Summary of harvesting patterns and use of miombo community forest resources.

Superscripted letters indicate harvesting patterns: *o* = opportunistic collection; *f* = frequently harvested; *n* = harvested out of necessity; and *s* = seasonal harvesting. Asterisks indicate relative availability of resources: \*scarcest; \*\*moderately scarce; and \*\*\* least scarce. The forest resources are for both economic (including barter and local sales) and home use. The blue dashed lines indicate resources saleable outside of Nansanga farm block (caterpillars and traditional medicines). Caterpillars, game meat and honey were reported to be the scarcest, and grass and reeds the least scarce. Sun-drying and direct-use are the most commonly used methods of handling forest resources in Nansanga.

This is beginning to change with the coming of manganese mining and tobacco production. However, only those who are able to work in mining and tobacco production are compensated monetarily (see details in **Table 7.5** for a comprehensive characterisation of coping strategies in Nansanga). Community members reported that the most important forest resources include grass, rafters, reeds, fibre, traditional medicines, fuelwood, honey, wild fruits, game meat and caterpillars. **Figure 7.2** above summarises the resources, harvesting patterns, perceived relative availability and processing/treatment before use.

### **7.3.3 The development of Nansanga and concomitant community-level changes**

The development of Nansanga led to the construction of a trunk road that connects Mingomba to the southern side of the block in Kabundi area. Other pieces of infrastructure include collapsed Munte dam (6 000 000m<sup>3</sup> capacity) and Munte bridge that gets submerged after heavy rainfall. Feeder roads to demarcated plots have become overgrown with bushes. The development of Nansanga has threatened the relocation of some households from planned service centre in Mingomba, and a community around Kambili, between Munte and Bwande rivers. In Kabundi area, there is a now collapsed Sasa dam (10 000 000m<sup>3</sup> capacity). There is also a crumbled irrigation canal and a trunk road connecting the area to Serenje town. Reported community-level changes include:

- Land tenure conversion from customary land to leasehold that has led to limiting community access to land for mushrooms, caterpillars, fuelwood and grazing land, particularly dambo

areas which, traditionally, were communal (M-FGD #4 & K-FGD #3, Nansanga, December 2017);

- The creation of dams and irrigation canals that have already collapsed, has disrupted the seasonal movement of *Hippopotamus amphibious* (Munte river), *Alcelaphinae*, *Kobus vardonii*, *Tragelaphus spekii*, *Kobus leche* and *Raphicerus sharpie* (animals traditionally hunted from the nearby Kasanka National Park) and community fishing (Researcher observation & M-KII #5, Nansanga, December 2017);
- The two manganese open pit mines in Kabundi, while providing casual jobs, is also providing ready market for land. This is slowly creating a landless class of local communities as some community members with socio-economic hardships are selling their land (K-FGDs #3; K-II #5 & Mg-KII #1, Nansanga, April 2018)
- Increased number of farmers participating in contract farming of tobacco with tobacco leaf companies while having casual jobs, tobacco production has led to localised deforestation and land degradation (K-FGDs #3; M-FGDs # 4 & Researcher observation, Nansanga, April 2018);
- In Mingomba area there are households threatened with involuntary relocations, and at the time of the study, a community had sued 'Baddock' Farm, the Serenje District Commissioner and other local government officials for threats of involuntary displacement and alleged corruption. More households face threats of involuntarily resettled because they are still within demarcated parcels of land. At the time of this

study, no compensations had been paid out to those affected, and there was no plan for any payments to be done. In the meantime, communities reported to *illegally* enter private parcels for forest products, knowing owners have not yet begun developing them (M-FGD #1, Nansanga, October 2016);

- There is migration of economically active community members from the north of Nansanga to the south to work in the mines, abandoning the production of food crops (M-FGD #4 & K-FGD #3, Nansanga, December 2018); and
- Kabundi has become a socio-economic hub of Nansanga, attracting different people, including internationals. Sexually transmitted diseases were reported to have increased (Researcher observation, M-FGD #4 & K-FGD #3, Nansanga, December 2018).

In Table 7.3 low wealth class households (LWCHs) have the highest dependency ratio, and the high wealth class households (HWCHs) have the lowest. The level of asset ownership and well-being increases from left to right, that is, as you move from low, middle and high class. In other words, HWCHs have all assets that middle and low classes have. Similarly, middle wealth class households (MWCHs) have all that low class have. Mode of land acquisition is common to all the wealth classes (either inheritance or allocation by Senior Chief). While traditional ecological knowledge, including knowledge of names, harvesting methods and techniques of forest resources that underpin livelihoods in the area is common to all the three wealth classes, the value of the knowledge is highest in HWCHs and lowest in LWCHs.

### **7.3.4 Community wealth ranking**

According to community criteria, households were identified and categorised into three classes: LWCHs, MWCHs and HWCHs. The characterisation and categorisation of households into three groups considered forms of labour mobilisation and degree of dependence, use and possession of means of production (assets) as in Oya (2004). Table 7.3 below summarises their characteristics.

**17 - Table 7.3** Characteristics of households based on wealth ranking

Community assets	Community wealth ranking		
	LWCHs	MWCHs	HWCHs
<i>Formal education</i>	Maximum primary school up to grade 4 or 5.	Primary school between 1-7th grades.	Primary school 1-7th grade with 1 secondary scholar and 1 college level education.
Labour dependency ratio*	1.3	1.1	0.7
Cultivated land	0 - 1.1 ha	3 - 6.3 ha	4 - 8.8 ha
<i>Farm assets</i>	Hoes, axes and sometimes, slashers.	Same as LWCHs plus wheelbarrow and shovel.	Same as MWCHs plus sometimes tractors, ox-drawn plough, scotch carts, harrows, rippers, disc plough, cultivators; planters
Non-farm assets	Make shift sleeping beds and mats from reeds	Sleeping beds, TV, radio, Generator, solar panel, car battery and bicycle	As MWCHs plus a vehicle (3 members interviewed reported having vehicles each).
<i>Crops</i>	Maize; sorghum/millet/beans; groundnuts/cassava/sweet potatoes.	As LWCHs plus soy beans; tobacco.	As MWCHs
Mobile phones	Absent in households.	Absent in some households, and present in others.	Present in households.
<i>Water source</i>	From rivers and neighbours' boreholes.	Own borehole, and from neighbours' boreholes.	Own borehole.
House type	Thatched and non-kiln baked bricks houses.	Thatched and kiln baked bricks, and iron-roofed houses.	Kiln baked bricks, and iron-roofed houses.

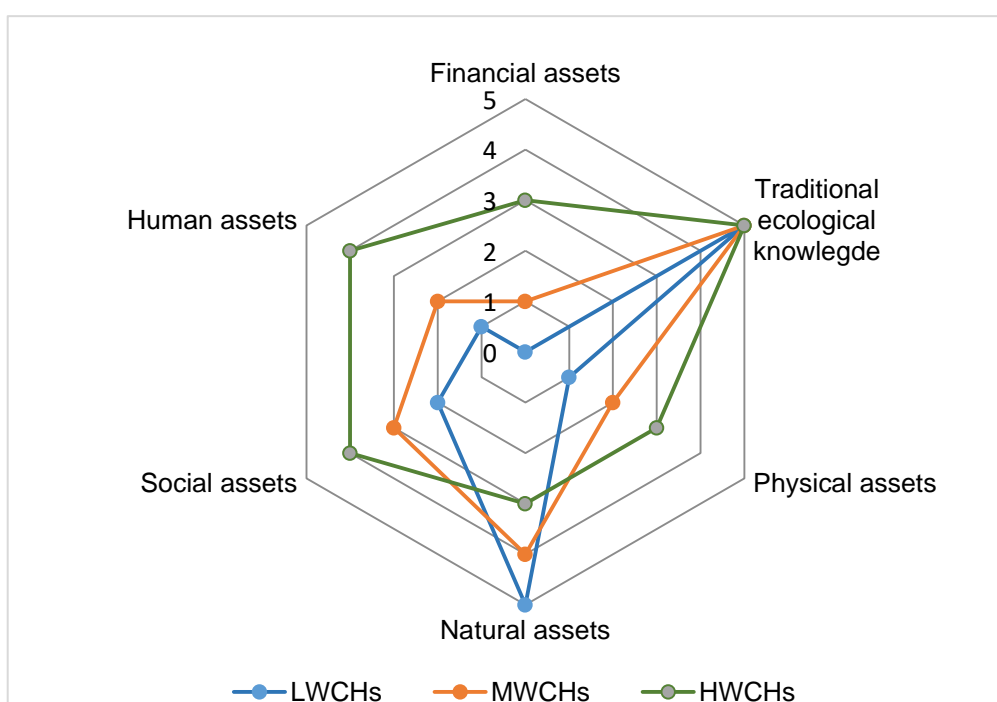


<i>During block establishment</i>	Farming, some with casual jobs in road and dam construction.	Farming, some with casual jobs in road, dam construction and plot demarcations.	Farming, some with casual jobs in road, dam construction and plot demarcations.
Livelihood source after farm block	Farming as before.	Farming as before, with some reporting improved farming (related to tobacco) in addition to other activities.	Farming as before, with some reporting improved farming (related to tobacco) in addition to other activities.
<i>Association and memberships</i>	Church groups.	Farmer cooperatives, self-help social groups, church groups and women clubs.	Farmer cooperatives, self-help social groups, church groups and women clubs.
Business opportunities	None.	Curio/carving/brick-laying/carpentry/traditional healing and beer-selling	Curio/carving/brick-laying/carpentry/traditional healing, beer-selling and retailing
<i>Employment opportunities</i>	Engaged in own farming, agriculture-related employment, including working for food.	Engaged in both agricultural and non-agricultural employment, including sometimes working for food.	Engaged in both agricultural and non-agricultural employment, including engaging others to work for food.
Traditional knowledge	Knowledge of the socio-ecological system, but not consulted.	Knowledge of the socio-ecological system, and sometimes consulted.	Knowledge of the socio-ecological system, and very often consulted.
<i>Perception of socioeconomic change</i>	No perceived changes that are beneficial, and in some aspects, they are worse off.	Some socio-economic aspects have improved (related to tobacco and manganese mining) while others have worsened.	Some opportunities have emerged (related to tobacco and manganese mining) while some aspects have stagnated and others worsened people's lives.

\* Dependency ratio is the measure of the number of persons per household that is unable to provide labour for the household's livelihoods divided by the number of persons per same household that is able to provide labour for the household's livelihoods.

### 7.3.5 Community coping mechanisms

Across all wealth classes, the measure of dependence on assets was obtained on a 5-point scale, ranging from most depended on (5) to least depended on (0) asset criterion (**Figure 7.3**). Dependence implied 'possession and use of a particular asset for livelihood' because households only depend on and use what they possess. Thus, the measure of dependency is in terms of possession, use, and indispensability.



**25 - Figure 7.3** Household dependence on assets by wealth class, based on household interviews.

A simple and easily comprehensible technique of stone count was used for households to indicate their level of dependence on the 6 categories of livelihood assets: financial, human, social, natural, physical and

traditional ecological knowledge. The scores were added and the mean recorded to represent each wealth class (Favretto *et al.*, 2016). The use of stone count technique proved useful as time and resources were a constraint. Traditional ecological knowledge scored the highest out of 5 points. Except in natural assets, HWCHs scored highest in all other assets, followed by MWCHs and then LWCHs. That is, for HWCHs 73% of the livelihood strategies depend directly on the use of their physical, financial, social, human, financial and traditional ecological knowledge endowment. For MWCHs and LWCHs, it was 57% and 47%, respectively. Household labour burden is highest in LWCHs and least in HWCHs, indicated by the highest and lowest labour dependency ratios, respectively. That the HWCHs scored the highest suggests the relative diversity of their livelihood strategies and coping mechanisms compared to LWCHs and MWCHs.

From **Table 7.4**, casual and seasonal jobs, straddling, migration from village of birth or homesteads and dependency on social groups, selling of land to others and trees to tobacco producers have emerged as coping mechanism associated with LWCHs. Casual and seasonal jobs, tobacco production, selling non-alcoholic brew, selling land, informal loans and migration are coping strategies associated with MWCHs. The strategies for HWCHs include tobacco production, small shops and transport services to Serenje town, selling both alcoholic and non-alcoholic beverages as well as providing informal loans (locally known as *kaloba*). Strategies of displaced households are limited to casual and seasonal jobs as they wait for the verdict from the courts in Lusaka. While the positive views are specific to each wealth class in **Table 7.4**, negative views are general community concerns.

In terms of general trends influencing the coping strategies, communities reported about population growth, scarcity of resources, heightened levels of awareness of household land boundaries and circulation of money in an area that was dominated by barter. The heightened level of awareness was reported to often cause conflicts over fuelwood collection. This is because of perceived scarcity of fuelwood, fuelled by the growing demand from tobacco growers who are buying from community members (see **Table 7.4**). There is limited formal education and consequently, low technological skills. Churches are promoting both vertical and horizontal networks and

**18 - Table 7.4** Summary of community coping strategies in Nansanga

Category	Coping strategies	Positive views	Negative views
Low wealth class	Farm and mine casual/seasonal jobs	Mines, increased tobacco producers and Silverlands (farm enterprise in a nearby farm block) are sources of jobs for cash income.	More time on liquid cash income activities causing food insecurity concerns.
	Working for food and straddling	Nansanga has triggered socio-economic activities, including improved agriculture by some on whom low class households are relying to work for food, particularly between December and February/March.	Nansanga has reinforced social differentiation. Low class households are not grabbing opportunities as some middle and high class households are.
	Migration from villages of birth	Community members in the north of Nansanga are migrating to the south where mines have been opened.	Emerging opportunities are more labour demanding, require knowledge and physical fitness, which most low class households don't have.
	Social networks and Social welfare funds	Churches and tobacco cooperatives are active. Churches give support to the vulnerable. All households belong to Christian denominations. Unsystematic government social welfare cash transfer of ~\$18 per household.	Migrants and high class households occupy church/cooperative positions. Only few benefit from the unsystematic social welfare cash transfers.
	Sell of land and trees for curing tobacco	Market for land and trees (to tobacco producers), earning cash for households.	Households are risking landlessness and fuelwood shortage to simply respond to immediate socio-economic needs.

	Farm and mine casual/seasonal jobs	After tobacco work, mines offer additional income, and some work for Silverlands farm. More cash in the area.	Payments are low: cultivating 0.5ha = £8.60; planting 0.5ha = ~£2.85; weeding 0.5ha = ~£3.60; and applying fertiliser 0.5ha = ~£1.43.
Middle wealth class	Tobacco production	The leaf tobacco companies provide incentives and extension services support that the government does not give.	Tobacco production is number one cause of deforestation and land degradation in the area.
	Selling local brew	Increased population is a market for non-alcoholic local brew.	None
	Informal loans ( <i>kaloba</i> )	With socio-economic improvements, some middle class households qualify for <i>kaloba</i> and recruitment in tobacco production.	Exploitation from lenders: interest rate is 100%.
	Migration from villages of birth	Some members of middle class households migrate to work in the mines in the south, and finally leave the farm block.	The energetic age group is lost to mining activities and other nearby towns.
	Sell of land to others	Market for land and trees (to tobacco producers), earning cash for households.	Households are risking landlessness and fuelwood shortage to simply respond to immediate socio-economic needs.
High wealth class	Tobacco production	The leaf tobacco companies provide incentives and extension services support that the government does not give.	Tobacco production is number one source of deforestation and land degradation in the area.
	Roadside makeshift shops and public transport	Seasonal improved incomes and increased population offer prospects for market for non-forest products, and transport to Serenje town.	None
	Selling alcohol and local brew ( <i>munkoyo</i> )	Seasonal improved incomes and increased population offer ready market for non-forest products.	Alcoholism has become a problem, and use of money earned from other activities on alcohol.

	Informal loans ( <i>kaloba</i> )	With socio-economic improvements, some high class households qualify for <i>kaloba</i> and recruitment in tobacco production.	Exploitation from lenders: interest rate is 100%.
Displaced	Recourse to the courts of law (2 cases in court)	The government has not helped as needed. Some of the people taken to court are actually government workers, e.g District Commissioner.	Communities are powerless, and investors come unannounced, and no compensation discussions.
	Farm and mine casual/seasonal jobs	Mines, tobacco production and Silverlands farm offer additional income generating activities.	Payments are low: cultivating 0.5ha = £8.60; planting 0.5ha = ~£2.85; weeding 0.5ha = ~£3.60; and applying fertiliser 0.5ha = ~£1.43.

interconnectedness. With customary land going into private hands, the pendulum of power and traditional allegiance are shifting from traditional leadership to new private land owners.

## **7.4 Discussion**

The discussion about the coping strategies of communities in Nansanga focuses on household assets and the role of forest resources, and the role of new developments, local and state institutions. We therefore first discuss household assets and the role of forest resources in Section 7.4.1. In Section 7.4.2 we discuss the role of new development as well as local and state level institutions in the livelihoods of the community members. Conceptually, these relate to the sustainable livelihood framework. This is because Nansanga has its particular context, livelihoods and institutional processes related to customary land and state land, and informal institutions and formal institutions mediate the ability of community members to carry out strategies to sustain themselves (Scoones, 1998). In Section 7.5 an attempt is made to relate the findings to the theory of political ecology to illuminate how these emerging roles fit within the conditions and changes in how communities interact with their environment, mediated by power relations (Robins, 2004) and the environment to which their livelihoods are tied (Ryan *et al.*, 2016; Scherr, 2000; Scholes & Biggs, 2004).

### **7.4.1 Household assets and the role of forest resources**

Nansanga is a farming area, and therefore communities regard farm rather than non-farm assets more important for livelihoods. Ecologically,



Nansanga is homogenous, and therefore, natural and traditional ecological knowledge (TEK) as assets have an equal value among the three wealth classes. TEK is highly specific to local environments and ecosystems (Agatha, 2016), and all the 3 wealth classes expressed same level of dependence on it though LWCHs are less likely to benefit from it. Those seeking traditional medicines or visitors in the area tend to approach people of influence. Affluence, influence and social recognition are associated with each other. Wealthier households tend to have more influence and are generally perceived to be more credible. Physical, human and financial capital assets are more important livelihood strategies for HWCHs. They are important for both farm and non-farm purposes. Assets such as iron-sheet roofed houses, bicycles, cars (for some), more human labour (including the ability to hire) and more disposable income (including ability to borrow 'informal' loans) have enabled HWCHs to cope better with Nansanga in *limbo of development*. The assets are also a marker of social status.

While some MWCHs take advantage of the emerging opportunities such as tobacco growing and mining to socio-economically empower themselves, LWCHs are tending into deeper socio-economic doldrums. Besides natural and TEK assets common to the 3 wealth classes, natural assets are the most important that LWCHs depend on for coping, followed by social and human capital assets. They have land that they either inherited or were allocated by the Senior Chief. They are also able to provide labour to work for food, and through social networks, are able to receive support from church groups, neighbours and clan members, particularly in sickness or bereavements. Some of them are also on social welfare benefits, however the amounts are symbolic (~\$18 per household) and are not given every month. This finding is consistent with

Smith *et al.* (2001) who found that begging and labouring were the only means of the poorest households for their sustenance.

Assets at household level influence the appreciation of the socio-economic and environmental impacts of Nansanga. The poorer the household, the more the assets tend to be a mere means of survival, and the wealthier the household, the more the assets tend to be a means for improving the household socio-economic situation. LWCHs generally feel worse off compared to MWCHs and HWCHs by Nansanga in *limbo of development*. LWCHs reported that within the farm block, they have become farm workers for food to eat, with no social recognition by new comers. Migrants have weakened the socio-cultural fabric, creating a sense of anomie more for LWCHs than MWCHs and HWCHs who are taking advantage of Nansanga in limbo of development to improve themselves. This sense of anomie was summarised at a FGD in Kabundi as follows:

We have regulations in Nansanga that people, these who are coming don't know, or know but simply ignore because they are not from here. Look, tobacco farming is leading to cutting trees indiscriminately. Dambos which belonged to everyone are now in private hands. Bush fires are everywhere and at any time of the year. Sexual interactions, insults and fights are not allowed as these disturb the spiritual integrity of the forests that we depend on for caterpillars. Caterpillars don't like these vices, and you can understand why the last big harvest of caterpillars that we had was in 2009 when Nansanga development began (K-FGD #3, Nansanga, November 2017).

Livelihood dependence on forest products by rural communities has been documented in various studies (for example, Hua *et al.*, 2017; Kalaba *et al.*, 2009; Ryan *et al.*, 2016; Scholes & Biggs, 2004; Syampungani *et al.*, 2009). This study found that depending on the

household wealth class: 1) wealthier households use their asset to access forest products to improve their socio-economic circumstances; 2) wealthier households engage in more lucrative farm and non-farm activities; 3) in the absence of improved post-harvest handling techniques, forest products alone are not enough to sustain livelihoods; and 4) forest products are for survival (LWCHs and some MWCHs) and socio-economic improvement (some MWCHs and HWCHs). Point 4 is attributed to labour dependence and involvement in more lucrative activities. With labour dependency of 1.3 and 1.1 for LWCHs and MWCHs, respectively, compared to 0.7 of HWCHs, it means more straddling for LWCHs. This further limits labour and their ability to benefit more from forest products. The exception are households with boys and girls too young to work for food elsewhere, but old enough to collect some forest products such as fruits. This finding resonates with the findings of Kalaba *et al.* (2009) who found that house wealth status plays a key role in the use of forest resources, and Kamanga *et al.* (2009) who note that the poorest in Zambia depend more on forest income than the least poor. Consistent with the indication of Fisher *et al.* (2014), asset portfolio differentials among community members influence levels of dependence and benefits derived from forest resources, but also opportunities emerging from development of LSLA deals.

The Nansanga case however, differs from Kalaba *et al.* (2009), Kamanga *et al.* (2009) and Fisher *et al.* (2004) in that the availability of labour in an almost entirely cashless rural economy, seems to be an important factor that determines coping strategies. Being a cashless economy, forest dependent livelihoods are not valued in monetary terms.

Counterintuitively, charcoal production for sale or domestic use is not done in Nansanga, attributed to two reasons: i) culturally, households

use fuelwood fireplaces for cooking and evening family gatherings; and ii) Nansanga is far from urban centres, and therefore, it is not economically viable to make charcoal to sell in urban centres. Isolated from cash based centres, there is generally no market for most forest products.

Forest products support household needs, are a valuable safety net in hard times and contribute to poverty alleviation (Babulo *et al.*, 2009). LWCHs almost entirely rely on forest products and provision of their labour for livelihood. Sometimes they eat food and work for it 3 - 4 months later during planting, weeding or harvesting (M-FGD #3 Nansanga, December 2017). Forest resources that are harvested by opportunity, are seasonal and scarcest (that is, game meat, honey and caterpillars – see appendix 2), and they tend to be more for direct consumption as Kamanga *et al.* (2009) note. Mushrooms and wild fruits are seasonally harvested and moderately scarce for two reasons: 1) limited access to parcelled land where they can be extracted; and 2) felling of ectomycorrhizal trees of the miombo woodland associated with mushroom production (Frost, 1996). Culturally, the scarcity of mushrooms and caterpillars is attributed to the sacrilegious behaviours that have come with the development of Nansanga from non-Lalas.

According to communities in Nansanga, if there were no new comers in the area who ignored or violated local regulations that govern their interaction with forests, the spirits would not be upset and they would still have copious mushrooms and caterpillars. In the distant past, there were cycles of 4 years of reduced caterpillars. The last one was 2009 that coincided with the development of Nansanga. They hoped they would harvest caterpillars in 2013. It didn't happen. They waited for 2017. It did not happen. This confirmed the annoyance of the spirits. Resource management based on socio-cultural practices and beliefs is not unique

to Nansanga. For example, the Lugba people in Uganda are reported to use norms and local regulation to guide their resource use and management (Agatha, 2016). Additionally, Dell'Angelo *et al.* (2017) assert that traditional communities use their ethical beliefs based on traditional knowledge to manage land and forest resources that they directly depend on, making them resilient to social and environmental disturbances.

#### **7.4.2 The role of new developments, local and state level institutions**

Roads, bridges, canals and dams are a direct result of establishing Nansanga. The government of Zambia has not pursued the implementation policy of Nansanga as initially planned, and this has given rise to other players, notably manganese miners and tobacco leaf companies. Owing to poor workmanship and use of cheaper materials, the dams and canals have collapsed. However, some HWCHs have taken advantage of this 'failed situation' to engage in lucrative activities such as tobacco production which earn them money to afford cars and oxen for cultivation. This finding is consistent with the assertions of Chimhowu and Woodhouse (2006) that when land is titled for development programs, people of influence are advantaged, and land does not necessarily provide safety nets for forest resource extraction.

Since the arrival of new comers, and following the issuing of title deeds, some people have sold land to others such as manganese miners. The coming of non-Lalas in Muchinda chiefdom has led to the following: 1) creation of a cultural enclave dominated by the Tonga people from southern Zambia. These have mostly settled in Kampumbu resettlement scheme; and 2) erosion of the Senior Chief's influence in the

chiefdom because his influence is limited to customary land. Interviewing the Senior Chief Muchinda in November 2016 before his assassination in May 2017, he indicated his fears, saying, *‘as a Senior Chief, I am worried about the coming of Nansanga because land is given away to other people, called investors. How can I be a Senior Chief without land? Land is what defines my power and influence as a Senior Chief in this chiefdom.’* The co-existence of customary tenure and state tenure at local level is confusing and disadvantaging Lalas on customary land. *‘The Senior Chief increased very much the farm book renewal fee from ~\$5 to ~\$30. There are fewer people paying now, and so he has to increase the fee to make up for the difference. Also, he thinks people have money because of the mines where some are working (K-FGD #2, Nansanga, March 2018).’* While this comes out as the Senior Chief’s strategy of making up for lost income from his people, the charge stifles people’s ability to cope with the negative impacts or improve their ability to take advantage of emerging opportunities. As a penalty for failure to pay the farm book fee, the head of the household has to work in the Chief’s farm for days to be determined by the local establishment. This further deepens the food security concerns of particularly LWCHs and some MWCHs. The specialisation of LWCHs and limited options of MWCHs, and the ability to diversify incomes by HWCHs, as Smith *et al.* (2001) found in Uganda, contribute to households’ abilities to cope with the impacts of LSLAs. It is a matter of ‘diversify to cope, or die out.’

## **7.5 The political ecology of the findings: theoretical reflections**

In the previous sections, we have discussed how communities categorised in three groups are coping with the socio-economic and

environmental (SEE) impacts of Nansanga in *limbo of development*. These impacts include conversion of land tenure, collapsing of developed infrastructure, manganese mining and tobacco production, labour flight from food crop production, and threats of involuntary displacements (see section 7.3.3). In this section, we attempt to relate the findings to political ecology.

As an empirical and research based exploration, political ecology seeks to understand and explain linkages in the condition and change of the social-environment nexus, with explicit consideration of relations of power among actors (Robins, 2004), that is, how power operates across geographic scales and biophysical characteristics and processes that mediate local resource use and perception (Offen, 2004). It seeks to understand access to, and control over, natural resources, particularly as a source of livelihoods, including the costs of environmental destruction (Escobar, 2006). In this regard, it seeks to understand the complex relations between society and nature (Peet & Watts, 1996) . Its relevance to the SEE impacts of LSLAs is based on three assumptions: there are costs and benefits that come with change in the social-environment nexus that are unequally distributed; the unequal environmental distribution inevitably reinforces or reduces existing social and economic inequalities; and the reinforced or reduced social and economic inequalities alter power relations among actors (Bryant & Bailey, 2004).

The findings of the study show the differential access and use of opportunities that have emerged following the establishment of Nansanga. Nansanga did not render any household richer or poorer. On the contrary, it reinforced the already existing socio-economic disparities; with the HWCHs improving more their socio-economic situations, and the LWCHs being further locked in the spiral of poverty. It has reshaped the use of

asset portfolio of households with concomitant social effects such as household economic decline, migration, or local social segmentation (Deligiannis, 2012).

The reinforcement of the socio-economic disparities is embedded in pre-existing historical, cultural and power dynamics. At state level, the government used its machinery to sell the rights to use land in Nansanga to the highest bidders, and by the same process, converted land tenure that gave land new meaning and new value without the consent of community members. This encapsulates the state power involvement (Wolford *et al.*, 2013) in the land deal. State involvement foreignised customary land (Zoomers, 2010) from communities as it was neo-liberalised into private hands (Chimhowu, 2018). Communities were simply informed about the farm block program.

At the micro level, older community members have a stronger sense of belonging and ownership of Nansanga than younger ones. This is also linked to the local culture. Married men live and cultivate land that belongs to their wives. Thus, men have a reduced sense of ownership and this contributes to the level of labour input and investments in land. '*Being uxorilocal, women rule in Lalaland* (M-FGD #3, Nansanga, December 2017).' Consequently, this contributes to their household wealth ranking. People with power such as *Sulutanis* and *Chilolos*, including older community members have more land and more alternative incomes (settling dispute charges by the *Chilolos*, traditional healing, and gifts from visitors). For any development programs, they are the first points of contact in the community, and this reinforces their power within the community.

Nansanga is in limbo of development and lacks any policy clarity in terms of its future. This situation has given rise to increased production of



tobacco and open pit manganese mining. These two land use types have led to the deforestation of the miombo woodland in Nansanga that is a 'pharmacy, a supermarket, a building supply store, and a grazing resource, providing consumption goods not otherwise easily available, particularly in subsistence economies (Deweese *et al.*, 2010 p61).' As has been reported on the relative abundance and patterns of collection of forest resources, LWCHs are the most disproportionately affected. Finally, as the Senior Chief himself was quoted before his death in May 2017, Nansanga has led to altering power relations around land, with the Chief himself ceding land to the government and other urbanites. Establishing Kampumbu resettlement scheme within the farm block has also created a socio-economic and cultural enclave of non-Lalas that has shifted power to the new comers because, as Nawrotzki *et al.*, (2014) note, urban-rural migrants have more financial, physical, human, and social capital assets than non- migrants, including levels of education. Conflicts over the use of land and forest resources that underpin rural livelihoods is partly attributed to the exercise of power of new comers that is leading to threatened and actual evictions in some cases (Deligiannis, 2012). This because the establishment of Nansanga has led to 'transformation of resource use as resource exploitation shifts from one type of human-nature relationships to another type (Deligiannis, 2012 p85).'

## 7.6 Conclusion

LSLAs are touted for poverty alleviation, food security, technology transfer, rural development, employment creation and energy security. They are also criticised as they often entail land expropriation, evictions, land conflicts, reinforcement of inequalities, landlessness, environmental

degradation and corruption due to poor land governance in host countries. Impacts of LSLAs have been diverse in specific socio-economic and ecological contexts at different spatial but also jurisdictional scales, including implementation stages of land deals. These stages relate to cancellations, scaling down, abandonment and transformation models of LSLA deals. Power as well as systems of production and resources, historical factors and formal and informal institutions also play a role in determining LSLA deal outcomes. The aim of this chapter was to understand how communities cope with the establishment of Nansanga in limbo of development and policy uncertainty. While there are development and policy uncertainties, land tenure has been converted and is legally in private hands. Communities live with the implications of the land tenure conversion.

The development level is low; developed infrastructure has already crumbled, and general development prospects are dim. On the one hand, in the face of this *development limbo*, tobacco production and mining have emerged to directly create socio-economic opportunities, and indirectly created favourable environments for other alternative community livelihood options to thrive. On the other hand, evidence from this study suggests that even with this level of development, there is socio-economic and environmental collateral damage particularly for the LWCHs and some MWCHs. LWCHs and some MWCHs sell their valuable assets such as land, labour and trees for daily consumption or short term gains, while HWCHs and new comers use the same assets for more investments. It is important to point out that the development of Nansanga has not created wealth classes. The socio-economic status is embedded in the historical and socio-cultural fabric of the community. It was however beyond the scope of this chapter to understand class

formation in Nansanga. Evidence from this study suggests that the way Nansanga has been developed has reinforced the historically and socio-culturally existing socio-economic differentials that influence the level of dependence and access to forest resources (Fisher *et al.*, 2014).

Nansanga is a predominantly cashless economy. Looking at the asset portfolio of households, socio-economic status is the dominant factor for coping and adapting to SEE impacts of LSLAs. An outgrower scheme designed for Nansanga to horizontally and vertically integrate communities in the production chain, needs to be reconsidered to reflect the livelihood asset portfolios of rural communities, if they have to benefit. At higher levels, only a handful can be integrated, the rest will be relegated to seasonal casual labourers. The farm block program, including developed infrastructure and the business model that targets more technical know-how are not reflective of the socio-economic status of rural people and their ability to benefit from the investments, putting into question the possibility of LSLA deals to contribute to wealth creation for community members, the primary users of land that is taken away for commercial investments.

## 7.7 Chapter 7 References

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## 8. Synthesis and Conclusion

### 8.1 Introduction

The aim of this thesis has been to understand the socio-economic and environmental (SEE) impacts of large scale land acquisitions (LSLAs). To do that, I have used Nansanga farm block in central Zambia as a case study. Nansanga farm block is in *limbo of development*, and its infrastructure has already begun crumbling. To understand the SEE impacts of Nansanga farm block, an LSLA deal in *limbo of development*, I focused on addressing five areas that comprise the specific aims of the thesis. These are listed in Chapter 1, Section 1.8 as follows:

1. To understand the biophysical characteristics and socio-cultural uses of the miombo woodland where the Nansanga farm block has been established – linked to **Chapter 3**;
2. To propose a conceptual framework to enable a more comprehensive understanding of the socio-economic and environmental impacts of LSLA deals - linked to **Chapter 4**;
3. To understand the role of formal and informal institutions in LSLAs and how these institutions shape LSLA deals and their outcomes - linked to **Chapter 5**;
4. To understand how LSLA deals in limbo of development (re)shape and are (re)shaped by different socio-economic and biophysical landscapes in which they unfold in order to improve the

understanding of the political ecology of failed or stalled LSLA deals - linked to **Chapter 6**; and

5. To understand the coping mechanism of communities in LSLA deals in limbo of development - linked to **Chapter 7**.

In this chapter, in Section 8.2 I begin by summarising the key findings of the thesis based on the five aims above. In Section 8.3 I attempt to contextualise Nansanga farm block, as a particular case of an LSLA deal within the broader LSLA literature. I also briefly reflect on the methodological approaches for the study. In Section 8.4 I reflect on some limitations and on future research that can build on the findings of this research, before giving the final concluding thoughts in Section 8.5.

## 8.2 Key findings

**Chapter 3:** Assessments of LSLAs outcomes in Africa are incomplete on environmental aspects (Cotula *et al.*, 2014). According to Messerli *et al.* (2013 p.529), LSLA assessments show a ‘considerable lack of information about environmental impacts and even more so about systemic effects on socio-ecological systems.’ This is partly attributed to the incipience of LSLA deals (German *et al.*, 2011; Nolte, 2014), and lack of (reliable) baselines (Cotula *et al.*, 2014), but also to the implementation of LSLA deals that are punctuated with scaling down, cancellations, abandonments or transformations of business investment models (e.g from food crop production to mining). In addition, lack of attention to environmental concerns of LSLA deals is attributed to the ‘marginality’ narrative of land

where LSLA unfold. Chapter 3 provides background to the study site. In this chapter, the thesis focused on understanding the biophysical characteristics and socio-cultural uses of miombo woodland where Nansanga farm block has been established (aim 1 of the thesis). I used forest surveys, focus group discussions, key informant interviews, walking interviews with traditional botanists, participatory resource mapping and transect walks. The assessment was based on ecological indicators of environmental parameters idiosyncratic to miombo woodlands.

Overall, the results reveal that Nansanga has been established on a structurally complex, diverse ecosystem, and on soils with a fertility status that is characteristic of miombo woodlands. The results also indicate that communities rely on miombo woodland of Nansanga for their livelihoods, and the status of environmental parameters considered in this chapter can in part be attributed to community land use. The socio-cultural uses indicate that the miombo woodland of Nansanga is 'a pharmacy, a supermarket, a building supply store, and a grazing resource, providing consumption goods not otherwise easily available, particularly in subsistence economies (Deweese *et al.*, 2010: 61).' The seasonal calendar (**appendix 2**) shows that the life in Nansanga revolves around the use land throughout the year. The characterisation of biophysical aspects and the socio-cultural uses of miombo woodland have provided evidence about the marginality of Nansanga. Specifying land marginality in terms of biophysical characteristics and socio-cultural uses, Nansanga cannot be discounted as marginal land. By understanding the biophysical characteristics and socio-cultural uses of the miombo woodland of Nansanga, the chapter has contributed to

developing an ecological and socio-cultural perspective that marks a research path for understanding impacts in the area without baseline data. In this light, the chapter contributes to LSLA research call to improve the understanding of environmental outcomes of LSLA deals.

**Chapter 4:** This chapter is in the 'literature review section' of this thesis. Literature review revealed a gap in conceptual frameworks to support a more comprehensive understanding of factors that underpin LSLAs that are of global, regional, national and community scope. The aim of the chapter was to develop a conceptual framework to improve the understanding of LSLAs (aim 2 of the thesis). Conceptual frameworks to understand LSLAs do not sufficiently and simultaneously reflect the local, national, regional and global level scope of LSLA deals (see Doss *et al.*, 2014; Meinzen-Dick *et al.*, 2019; Osabuohien *et al.*, 2019). The chapter was in response to a research call that has noted that 'the full implications of the new wave of land deals can only be assessed if the deals are examined not in isolation, but within the wider political and economic projects they form part of (Cotula *et al.*, 2014 p905).' Assessing LSLA deals within the wider political and economic projects that they are part of therefore, calls for scholarly attention to conceptualise frameworks. These frameworks need to sufficiently capture the interplay and cascading and escalating factors of LSLA deals at global, regional, national and local levels.

LSLA deals lead to land, a local resource, to being marketed as a commodity (Chimhowu, 2018); foreignising and globalising it (Zoomers, 2010) beyond the reach of rural communities. Dominant approaches to



understand the SEE impacts of LSLAs suggest a binary lens through which the global north is the 'land rusher,' and the global south is the 'host.' This is a geopolitical lens that categorises the global north as 'resource poor, financial haves' and the global south as 'resource rich, financial have-nots.' The conceptual framework that I have proposed in **Chapter 4** does not pretend to be a panacea for the methodological and epistemological challenges of researching LSLAs (for methodological and epistemological challenges (see Borrás *et al.*, 2011; Oya, 2013; Messerli *et al.*, 2014). However, the conceptual framework most importantly points to the danger of researching cases of LSLAs in isolation from their drivers/causes and effects/impacts at different policy and geographic levels. The conceptual framework recognises that locally-implemented LSLA deals have global implications (Roudart & Mazoyer, 2015), and that global political and economic drivers lead to local level implementation of LSLA deals. Given the scope of LSLA deals, in this chapter, my point is that it is good to do a case study, but it is even better when a case study is informed by higher levels of policy and geographic spaces that drive LSLAs but also to which repercussions reach.

**Chapter 5:** The aim of Chapter 5 (aim 3 of the thesis) was to understand the role of formal and informal institutions, how they shape LSLA deals and their outcomes in Zambia. This enabled an understanding of how land governance in Zambia interplays with LSLA deals and LSLA outcomes. LSLAs are (re)shaped by diverse biophysical, socio-cultural and institutional policy landscapes in which they unfold. Institutions shape land

deals (Bujko *et al.*, 2014), and land and food politics are intertwined (Borras *et al.*, 2015). Institutions and their policies are therefore critical in shaping LSLAs and their outcomes. LSLA empirical studies have, in isolation and through a particular and narrow lens, been done to understand legal status of customary property regimes and state discourse ( e.g Nolte, 2014), land governance (see Lay & Nolte, 2017), the role of domestic elites and power imbalances (see German *et al.*, 2013; Herrmann, 2017; Sitko & Jayne, 2014), local resistance (see Baird, 2017; Hall *et al.*, 2015) and the process of alienation of local resources (see Chimhowu, 2018; German *et al.*, 2011; Zoomers, 2010). However, Schoneveld (2017 p121) notes that despite the relevance of understanding institutions and policies in LSLA debate, ‘the interplay between domestic institutional dynamics and agricultural investment inflows is yet to be comprehensively assessed.’ Chapter 5 contributes to understanding the interplay between domestic institutions and LSLA deals in Zambia.

Chapter 5 draws on a sample of policy documents, key informant interviews within Nansanga farm block, and with government departments, investors, development practitioners, researchers and civil society stakeholders outside Nansanga farm block. Overall, the LSLA-policy interplay is plagued with national economic and institutional challenges linked to national party politics. The evidence suggests that agriculture as a development strategy of rural areas in Zambia needs to be reconsidered, taking into account the (in) ability and (lack of) political will of Zambian governments to successfully carry through agricultural programs in which

they invest significant amounts of public funds at planning stages (more details in Section 8.5).

First, the results reveal that the level of institutional frameworks and policies that promote LSLA deals is not matched by an equivalent level of LSLA management and governance structures. Second, party politics meddles in national land governance system leading to corruption, underfunding of the agriculture sector, overriding of key decisions by government institutions with legal mandate, and *cadreism*, an unruly and unlawful yet tolerated behaviour by political party sympathisers, particularly the unemployed youth. Third, traditional chiefs, local councils and commissioner of lands represent the multilevel governance mechanisms of land governance in Zambia. Fourth, where government policy and implementation of LSLA fail to succeed, there are other economic players who take advantage of the failure to fill up the gap. For the case of Nansanga farm block, manganese mining and tobacco production have thrived instead of food crop production as intended in the government farm block program (GRZ, 2005). Finally, the results revealed eight factors as policy thrusts for LSLA deals in Zambia. These are: rural development; commercialisation of the agriculture sector; food security; rural poverty reduction; Zambia's natural resource endowment; stable policy and political environment; socio-economic and demographic factors; and minimising rural-urban migration.

**Chapter 6:** This chapter builds on Chapter 5 on how land governance interplays with LSLA deals and their outcomes in Zambia. The aim of

Chapter 6 (aim 4 of the thesis) was to understand what happens when LSLA deals and government pro-LSLA deal policies fail within Zambia's land governance structure, biophysical and socio-economic context. The study in this chapter was informed by focus group discussions and key informant interviews within Nansanga farm block, and key informant interviews with government and quasi government institutions, researchers, investors, civil society organisations and development practitioners. To estimate the level of fuelwood consumption for tobacco production, we used the weighing method.

In Chapter 6 I have argued that framing LSLA deal cancellations, scaling down and abandonments within host country specifics offers a nuanced research opportunity to unravel the political ecology of what happens on local communities and the environment when both state policy and implementation of land deals fail. This is because host countries have their own land governance structures, biophysical and socio-economic idiosyncrasies that contribute to LSLA deal cancellations, scaling down and abandonments (as discussed in Chapter 3). Evidence from case studies regarding what happens when LSLA deal fail can then contribute to meta-analyses beyond national level dynamics.

The findings in Chapter 6 suggest that the development of Nansanga farm block has failed in that the government has decided not to allocate any more funds to complete the development of the farm block. In addition, the developed pieces of infrastructure such as dams and irrigation canals have already crumbled, and plot demarcations and roads to farms are overgrown with bushes. People who bought land to develop it have not done so.

Results show that the state's failure to complete the development of Nansanga, and its vanished role in the development of Nansanga have created a development vacuum that tobacco production and open pit manganese mining have filled. Tobacco production and manganese mining have taken advantage of the infrastructure from the farm block development program to flourish. Tobacco and mining, heavily extractive as they are of forest resources, have increased financial returns and job creation in Nansanga. An important result from the findings is that the new economic players that have reshaped the socio-economic development of Nansanga are opportunists, 'empty-space-fillers' who were not initially part of the Nansanga program. Second, while they contribute to creating casual jobs, their negative impacts on livelihoods are similar to typical SEE concerns of LSLAs. These include labour flight from production of food crops raising concerns over food security, landlessness ensuing from selling land to mining companies, human and environmental health and displacements.

**Chapter 7:** Chapter 7 logically follows from Chapters 5 and 6 to understand how communities in Nansanga cope with the SEE impacts of an LSLA deal in *limbo of development*. The aim of **Chapter 7** (aim 5 of the thesis) was to examine the coping mechanisms of communities to an LSLA deal in limbo of development. Chapters 5 and 6 have set a stage and context within which to understand how communities cope with the SEE impacts, and the community mechanisms that have evolved in response to the SEE impacts of Nansanga farm block in *limbo of development*. Customary land has been converted to leasehold, therefore despite the development status of the farm

block, communities live with the implications of the land tenure conversion. In literature on LSLA deals, such implications are generally reported on as negative (e.g Dwyer 2014; Milgroom 2015; Oberlack *et al.*, 2016). Positive one are few (e.g Bottazzi *et al.*, 2018; Herrmann 2017).

Overall, the findings suggest that low wealth households tend to lose out while high wealth households are more likely to take advantage of emerging opportunities of LSLA deals. In Nansanga, low wealth households almost entirely depend on the exploitation of land and associated resources, and the provision of their labour to other more affluent farmers, tobacco producers and mining for their livelihoods. In this regard, this study found that LSLAs (can) actually reinforce pre-existing socio-economic community differences and challenges. The findings also suggest that for most households, the livelihood asset portfolios are too lean to adequately enable them to cope with the SEE impacts of unfolding LSLA deals. This is in terms of taking advantage of emerging opportunities as Nansanga farm block unfolds, but also in terms of coping with negative impacts such as land dispossessions, reduced labour and food insecurity. Another important finding in this chapter is how culturally, communities in Nansanga attribute the increasing scarcity of non-wood forest products, particularly caterpillars and mushrooms to the sacrilegious behaviours that they perceive to have come with the development of Nansanga. Non-Lalals are not living according to the traditional and cultural values of the area, thereby profaning the forests that give local communities caterpillars and mushrooms.

### 8.3 The politics of LSLAs as development schemes

Within the context of the summarised key findings in Section 8.2, I reflect on the politics of LSLAs as development schemes in Section 8.3. Based on public-private partnership (PPP), I revisit the contested concepts of development promises and how they are related to the meaning of the *development in limbo* concept that has generally framed the central theme of this thesis. In light of development promises, I reflect on the competing visions around land as it is assembled as a means of investment. Finally, I extend and reflect on the political ecology of the thesis as it relates to political and social processes of LSLAs.

The Zambian government sought to partner with the private sector in the implementation of the farm block program. The government played its role in the *partnership* by reviewing investment policies (giving incentives to investors) and development of infrastructure (see Chapters 1 and 5). The private sector, commercial farmers more especially the business entity to invest in the core venture (refer to Section 1.3 for details) was going to provide the technical competence, efficiency and financial resources to operate the farm block. However, the Zambian government had not formalised any contracts with any private sector before beginning to play its role of infrastructure development. Assembling land by converting its tenure, and investing national meagre financial resources to develop infrastructure based on a PPP model while being the only partner in the *imagined* PPP proves the private sector's normative belief that the state is inefficient and ineffective (Brinkerhoff & Brinkerhoff, 2011; Poulton & Macartney, 2012). In a

PPP, partners are connected by a contract which spells out elements of mutuality (Brinkerhoff & Brinkerhoff, 2011) and partners' division of tasks (Ferroni & Castle, 2011) and conditions of their commitment in the collaborative pursuit of a *public good*.

Critics of LSLAs point to widespread land alienation, evictions and destruction of livelihoods, while supporters of LSLAs cite rapid agricultural modernisation, mechanised farming, employment creation, and positive spill-overs across the economy (Baglioni & Gibbon, 2013). Ideologically, land for the state is a *not-for-profit* resource, while for the private sector, it is a *for-profit* resource. This suggests that land for partners in PPPs in the context of LSLAs means different things, and so is the *common public good* that is said to rationalise PPPs (Brinkerhoff & Brinkerhoff, 2011). What happens when the pursued public good does not reconcile with partner or individual interests? Given that the meaning of land, its use and users change (Li, 2014), what happens when that happens in the course of an LSLA deal? These questions lead to a reflection on the concept of *development in limbo* that has framed the central theme of the thesis.

The government of Zambia began the farm block program with the following objectives: i) to commercialise agricultural land and exploit its full potential in order to attain economic diversification and growth; ii) to enhance food security through production of adequate food for the nation and export; iii) and to open up undeveloped rural areas, reduce poverty and minimize rural to urban migration (GRZ, 2005). The government defined *development* in terms of these three objectives. If these objectives were the end, and land the means, it is plausible to assume that the private sector would not have



the same objectives as the government. Land is the same means that both the government and the private sector would use to achieve their respective objectives, and assemble the definitions, meanings and contestations around their objectives. Land in Nansanga had affordances that attracted the state and private sector attention, however for different reasons. In the context of the four broad global crises attributed to the contemporary wave of LSLAs – food, energy, environment and finance, the private sector's objectives would be to increase its profit or shareholder value rather than, for example, being concerned with increasing employment because this is a public policy government concern (Shepard, 2012).

Nansanga farm block was conceived as a PPP program at two levels: government partnership with the private sector (commercial producers, including the main agribusiness entity to invest in the core venture); and the main agribusiness entity to invest in the core venture partnership with all other producers in the farm block (commercial, medium size and smallholders through contract farming). The government however did not have any formal contracts (as it would be expected) with any would-be investors in the farm block to indicate that the government's efforts to build infrastructure in Nansanga would be complemented by the private sector to achieve the government's *public good* (that is, *development* as expressed in the three objectives of the farm block program). It was a PPP in which the government was the sole partner, built on the *assumption* that investors would come to invest in *food crop production* after the government had invested in infrastructure development. As has been reiterated in Chapters 6 and 7, the government did not finish infrastructure development, and some

people bought land in the farm block for purely speculative reasons (see Chapter 5). Therefore, the development of Nansanga in terms of physical infrastructure, actors, objectives and interests of actors and the PPP business model adopted has been characteristically uncertain. Based on these uncertainties, some forward-looking questions can be posed: is it a matter of time the Nansanga program will be completed - will it ever be done as initially conceived? Can the perceived political risk (see Chapter 5) be overcome so that the core venture of the farm block can have an investor? Can Nansanga be a food crop farm block given the flourishing open pit manganese mining and tobacco production? What will become of Nansanga in terms of its socio-economic and agricultural development? The uncertainties (based on what is known) and the forward-looking type of questions related to the future of Nansanga encapsulate the concept of a farm block in *limbo of development* that has framed the central theme of the thesis. Throughout the thesis, I have reiterated the failure of LSLA deals and how some deals are cancelled, abandoned, scaled-down or transformed into other economic activities. Some of the uncertainties and forward-looking questions I have raised regarding the development of Nansanga will be pertinent to other *failed* LSLA deals involving government interventions in defining land for capital accumulation by the private sector. Therefore, the concept of LSLA in *limbo of development* is relevant to *failed* LSLA deals, and it can serve to offer insights to explain and understand *failed* LSLA deals. Is a win-win-win scenario therefore, possible with LSLA deals? Or, are the objectives of the Nansanga farm block achievable while investors increase the value of their assets and maximise profits?

In responding to these two related questions above, it is important to underscore two elements of the contemporary LSLA deals: the deals are ‘in natural resource-rich but finance poor’ countries (Chilombo *et al.*, 2019) needing financial resources from both national and foreign entities; and there is a ‘willing giver and willing buyer’ of land. Therefore, by default, having any LSLA deals necessitates at least two actors to partner. The government joins the partnership contributing land and associated resources and to set ‘rules of the game’ for the private sector. The private sector, on the other hand, offers finances and competence and technical know-how to the partnership. As an example, the government’s interest would be job creation. However, to effectively and as a measure of business management competence, the private sector might work to reduce job creation as much as possible (through e.g use of machinery) to cut operation costs and increase profits. In addition, making a country food secure, the government would be interested in the production of maize (on which Zambia’s staple food is based), however the private sector would rather grow tobacco or any other cash crop like soy beans for regional and international markets to increase the profit margins. A partnership where partners have different business ideologies is less likely to succeed in first, setting a common goal that can be called a public good, and second, pursuing together that public good. Additionally, it is possible that partners succeed in defining a common goal. However, common goals are not necessarily a public good. The outcry of community members in the Jeremy Baddock case (see Section 1.3) is an example. Some government officials and Jeremy Baddock sought to pursue a common goal of developing the land by getting it away from less efficient

users, however the fact that the case attracted attention and was contested in court suggests that the getting of land for development by Jeremy Baddock was not in pursuit of a public good. In the case of LSLA PPP deals, win-win-win situations are less likely to be achieved. As shown in the two examples above regarding job creation and food security, the visions of partners can be irreconcilable and antagonistic.

Results from this thesis reveal inherent contradictions between promises or visions of stakeholders and what actually happens as LSLA deals unfold. In the case of Nansanga, tobacco production and manganese open pit mining as detailed in Chapter 6 reveal one of the ways in which contradictions have been revealed. Nansanga is in *limbo of development*, and given this fact, it can plausibly be suggested that a win-win-win situation as initially envisioned through the farm block program objectives is not possible. However, it should be mentioned that tobacco production and manganese open pit mining represent a partial window into the vision of the farm block to the extent that a cash economy is slowly becoming a reality and (some) community members are having access to casual job opportunities, including emerging small business opportunities (see details in Chapter 7). This does not underplay or disregard the environmental and socio-economic concerns of tobacco production and manganese mining (see details in Chapter 6), but it is an acknowledgement of positive elements that are present in Nansanga in *limbo of development* that would be present had the farm block been fully developed according to the initial plan. That is, it is an acknowledgement that in the absence of a *win-win-win situation* according to the original plan, the emergence of other economic players in

tobacco production and manganese mining partially contributes to the realisation of some objectives laid down in the farm block program. This therefore, offers insights into the evolution of Nansanga in *limbo of development* as a case whose investment model has taken a different turn.

It is important to recall that the state (through the ministry of agriculture and the ministry lands as lead ministries) assembled and defined Nansanga as a food crop producing area. The same state (through the ministry of mines, and without the knowledge of the lead ministries) *redefined* the use and users of Nansanga to promote mining by issuing mining licenses in an area that was initially assembled for food crop production. Building on the thoughts on the politics of LSLA deals as development schemes that I have presented in this section, I will focus on the political and social processes in Nansanga in the next section.

## **8.4 The Nansanga farm block case in LSLA literature and reflections on methodological approaches**

### **8.4.1 The political ecology of the political and social processes in Nansanga**

In this section I reflect on Nansanga farm block as a particular case within LSLA literature. I first reflect on the political ecology of the political and social processes as they are situated in Nansanga's structurally complex, diverse miombo woodland ecosystem. Second, I reflect on the methodological approaches.

An understanding of the political and social processes as they are situated within Nansanga's biophysical realities needs to be nested within the prevailing bifurcated state and customary land tenure system in Zambia. This is because the definition of the meaning, value and uses (including the management outcomes and impacts from the use) of land is determined by the administration levels of state land and customary land. *De jure*, all land belongs to the President. *De facto*, customary land is administered by traditional authorities and state land is administered by the Commissioner of Lands (details in Chapter 5). However, the state can effect changes to management regimes and priorities to customary when it is judged that doing so is in public interest (GRZ, 1995), thus overriding the decisions of traditional authorities who are the *de facto* administrators. Using its legitimacy, the state in Zambia, therefore, is able to decide what land in a particular area can be useful for, when, by who, for how long, and who can benefit from it. This is how, not having an intrinsic quality, the *resourceness* of land is assembled and made up, waxes and wanes, or morphs. Additionally, as technologies are added, values change and material qualities of land shift (Li, 2014) through state mediation. The state is therefore powerful in the political and social processes as they unfold in particular biophysical realities. According to Parenti (2015 p.830), 'managing, mediating, delivering, and producing the environment is a core and foundational feature of the modern, territorially defined, capitalist state.' How is the state's role pertinent to the biophysical characteristics of Nansanga as presented in Chapter 3 and the impacts as articulated in Chapter 6?

Ethnically, Nansanga belongs to the Lala people in chiefdom Muchinda that is legally recognised by the state. The state also recognises that land under traditional authority is customary land. The legal recognition makes it possible for the Lala people to define the value (non-monetary) of land – what they can use it for, when, how, and set boundaries that mark exclusion of access and use. It should be noted that this particular legal recognition of customary land renders it *resourceless* in the sense that customary land does not have a market value and cannot be collateralised to allow its users to access financial services. Therefore, the way that the state has *made* customary land as an environmental resource (Parenti, 2015) is that it has no *direct* monetary value in the capital accumulation equation to directly benefit community members as primary users of land. This needs further substantiation – customary land has no financial value, and therefore, no role in capital accumulation. For it to play a role in capital accumulation, it has to be re-defined, re-assembled and given a new meaning (Li, 2014) through land tenure conversion. This re-definition gives land a new meaning and value for exploitation in capital accumulation. By extension, the re-definition of land also sets new political and social processes and boundaries regarding how old (community members) and new users (investors) will interact with land. Relating this to the Nansanga case, while the old users, the Lalas, have lost the political control (traditional rules of land governance) and social processes (community uses and values of the miombo woodland as detailed in Chapter 3) that are associated with the use of Nansanga miombo woodland, the new users (investors who have bought land) have acquired the new *value attributed* to leased land. The investors

have equally gained new political and social processes around the land that they have acquired – how to govern and manage leased land as lessees and decisions regarding what to do with the land.

It should be noted that the political and social processes for both new and old users of Nansanga are influenced by the *environmental resourcefulness* or the *affordances* of land, including the physical size of the area. In other words, land in Nansanga has the material presence and location with rich and diverse uses and values, including the capacity to sustain human life (Li, 2014) that influence political and social processes of both new and old users. As reported in Section 7.4.2, the Senior Chief lamented, ‘...*how can I be a Senior Chief without land? Land is what defines my power and influence as a Senior Chief in this chieftom.*’ If the Senior Chief with his legitimacy, expressed his fears in those words, it is understandable that his powerless subjects had even deeper fears. Therefore, the re-definition of customary land through the conversion of land tenure has spatial dimensions with implications on the political process that is of concern to community members as old users of land. The type of land use by new users with impacts as detailed in Chapter 6 have raised concerns regarding the social processes in Nansanga as detailed in Chapter 7. These concerns include the scarcity of caterpillars, scarcity of certain socio-cultural tree species (Chapter 3), deforestation and land degradation from increasing tobacco production and open-pit manganese mining (Chapter 6), increased sense of anomie because of the presence of unknown non-Lalas in the area, disturbed management regimes of land in



Nansanga (e.g bushfires at wrong times of the year) and threats and actual cases of deracination.

In terms of *environmental resourcefulness* as has been detailed in Chapter 3, Nansanga cannot be discounted as marginal land. As has already been alluded to, the political and social processes of both community members and investors are linked to the *environmental resourcefulness* of the area. The re-definition of Nansanga land through the conversion of land tenure from customary land to leasehold has been the re-definition of the *environmental resourcefulness* of the area but also the political and social processes. This re-definition has led to the transfer of the *environmental resources* and their *resourcefulness* from community members to investors. That is, a transfer and conversion of largely *non-monetary use values* to *monetary use values* in which community members are not *owners* or *co-owners*, but for capital accumulation by entities coming from outside the resource base. It should be noted here that Nansanga's local socio-economic situation is cashless, and would have possibly remained as such in the foreseeable future had it not been for the establishment of the farm block, or unless another capitalist development program was initiated.

#### **8.4.2 A brief reflection on LSLA literature and reflections on methodological approaches**

The debates regarding LSLAs are largely polarised between those who see LSLAs as mechanisms for spurring socio-economic development by exploiting '*under-utilised* or *idle land*,' and those who are concerned about LSLA associated SEE impacts. Socio-economic benefits for which LSLAs

are supported include job creation, knowledge transfer, food security, rural development (e.g Deininger & Byerlee, 2012; Deininger, 2011; Schoneveld, 2013). The SEE costs include displacements and land dispossession, land degradation, food insecurity, land tenure insecurity (e.g Zoomers, 2010; Abbink, 2011; De Schutter, 2011; Rulli & D’Odorico, 2014; Chimhowu, 2018).

Through this thesis I have attempted to contribute to the understanding of LSLA deals as they unfold in different socio-economic, political and biophysical conditions. In my contribution, the analyses of my research work focused on the *processes* and the *impacts* of LSLA deals. On the *processes*, I have attempted to answer the *what*, *how* and *why* questions related to LSLAs as they unfold in different socio-economic, political and biophysical contexts. On the *impacts*, I have attempted to answer the *what* and *why* questions related to LSLA implementations. By focusing on the *processes* and *impacts*, I have challenged the simplistic views about LSLA deals that tend to evaluate LSLA deals in isolation from socio-economic and politically differentiated realities and national, regional and global dynamics that continually re(shape) LSLA deals. LSLA deals are part of socio-economic and politically differentiated dynamics at sub-national, national, regional and global levels, and understanding *processes* and *impacts* of LSLA deals needs to consider these levels.

This thesis is largely embedded in the Zambian context. However, there are cross-cutting thematic areas that situate Nansanga as a case study within broader discussions of LSLAs. The first thematic area is the commodification of rural resources for the benefit of non-rural interest

groups. These non-rural interest groups include investors (both national and foreign) and elites with financial resources and access to power (see Sitko & Jayne, 2014; German *et al.*, 2013). The second thematic area is LSLAs as a mechanism for rural development where host countries re(shape) institutional and policy landscapes to attract investments to spur socio-economic development. Under these two overriding thematic areas, I have attempted to address five specific themes within the broader discussions about LSLAs. These specific themes are related to, first, the role of national state institutions and policies, including informal institutions in shaping LSLA deals and the outcomes. Second, the challenges of implementing LSLAs related to scaling down, abandonment, cancellations and change of business models. Third, the under-representation of environmental concerns in LSLA analyses. Fourth, de-territorialisation and the commodification of land and labour, local resources, for corporate interests. In Nansanga, these corporate interests are the tobacco leaf company and manganese mining companies. Finally, I have addressed how LSLAs (can) produce results that contradict socio-economic conditions that they were meant to combat by reinforcing pre-existing socio-economic community level situations.

As indicated in Chapter 4, the post 2013 LSLA research agenda has focused on understanding processes rather than quantifying hectares of land that have been acquired (Oya, 2013) to improve our understanding of how micro-processes at local levels interact with wider dynamics. By using a case study, this thesis has related LSLAs to the role of state institutions and policies (see German *et al.*, 2013), including informal institutions (see Ahmed *et al.*, 2018) in supporting LSLAs. Second, the Nansanga case reveals

results that are related to the challenges of implementing LSLA land deals punctuated with cancellations, scaling down or abandonment (see Cotula *et al.*, 2011, 2014; Edelman, 2013; Locher & Sulle, 2015). Third, the findings from Nansanga case are related to the methodological and epistemological challenges of understanding environmental impacts of LSLAs, particularly because LSLA deals do not usually have (reliable) socio-economic and environmental baseline information to enable longitudinal studies to inform assessments of actual impacts (see Cotula *et al.*, 2014; German *et al.*, 2013). Fourth, the results also resonate with LSLA literature on the foreignisation and globalisation of local resources (see Robertson & Pinstруп-Andersen, 2010; Zoomers, 2010; Chimhowu, 2018). Finally, the Nansanga case has also showed that LSLAs re (shape) the socio-ecological system in ways that enable more affluent community members to take advantage of changing socio-economic dynamics to make themselves better off, while poorer community members tend to be made worse off. Generally, community asset portfolios are too lean to enable them to favourably compete with others from the project site. Thus, for example, local community members are more likely to participate in more manual oriented labour needs, and more and better paying technical jobs are given to others coming from outside the project site with higher levels of education.

It has been possible to understand the SEE impacts of LSLAs because the research project was nested in a case study that engaged community members who have directly been involved in the farm block program. This level of analysis has also been possible because I was able to interact with other stakeholders outside Nansanga (government

departments, quasi government institutions, development practitioners) who were directly involved in the establishment of the farm block, including drafting the policy agenda for the farm block program. Within the broader LSLA literature, this micro-level investigation has permitted the unravelling of micro-level and national level, as well as formal and informal dynamics as they relate to LSLAs in Zambia.

Reflecting on the methodological approach to nest Nansanga within the broader LSLA deals, participatory rural appraisal methods proved useful on the following grounds: first, the process of understanding the *processes* and *impacts* of LSLAs as detailed above, was a process of co-production of knowledge about the phenomenon. This co-production was possible and made sense because I was interacting with individuals and institutions that were directly relevant to the establishment of Nansanga farm block. I was getting information from ‘the horse’s mouth.’ Second, Nansanga farm block, as has been noted in the empirical chapters, is in limbo of development. To the best of my knowledge, there was no reliable baseline information that could support a meaningful longitudinal study about the SEE impacts of an LSLA deal in *limbo of development*. Therefore, beyond community members who were directly involved and affected by the farm block establishment, answering the *processes*-related (*what, how* and *why*), and the *impact*-related questions at community level, would never be possible. It would not reveal the richness of lived experiences of community members of Nansanga. To the best of my knowledge, Chapter 3 on the biophysical characteristics and socio-cultural uses of the Nansanga miombo woodland is the pioneering work to develop a socio-cultural and ecological perspective

and boundary that mark a research path for understanding environmental impacts later in Nansanga.

I went to Nansanga 3 times between 2016 and 2018. Through the interactions with the community members, I realised there was a deeper sense of trust that was built. Evening fires as detailed in Chapter 2 on methods, were a golden opportunity to learn about the cultural idiosyncrasies of the Lala people. These were shared with us because of trust which we earned out of continued and respectful interactions with the community members. With trust, there were no expectations in terms of material benefits for interacting with me as the principal researcher. Material expectation could easily influence information sharing, or lead to jealousy among community members.

Finally, the questions of labour and property rights are important to the LSLA deals debate. Addressing the labour question has been done in relation to labour flight and levels of compensations for casual jobs in tobacco production and manganese mining. The question on property rights has been addressed in the land tenure conversion from customary land to leasehold to pave the way for investors. This level of addressing the questions of labour and property rights was necessitated by the nature of the case study itself and the methodological approaches that were used. Within the LSLA deals debate, I have included sections in Chapter 1 that highlight the questions of labour and property rights.

## 8.5 Future research

Nansanga farm block has provided a unique case to study the socio-economic and environmental (SEE) impacts. First, it was a government-engineered process, therefore embedded in the government policy space. The conception of farm blocks included development practitioners, and therefore the development of Nansanga farm block was boosted as a rural development strategy. The farm block was established on previously held customary land with its own informal administrative and institutional arrangements, as has been explored in **Chapter 5**. It therefore, offered a research opportunity to understand how informal and formal institutions interact when (re)shaping and being (re)shaped by LSLA deals. After the land tenure was converted, and financial investments to develop infrastructure were done, the actual development of the farm block is in limbo. In this regard, Nansanga as a case study presented an opportunity to understand what happens when LSLA deals fail and why. As a case study using the methods I used, knowledge has been created that speaks to community members, policy makers, researchers, civil society organisations, investors and development practitioners.

In addition to the questions of labour and property rights as alluded to in the previous section, understanding the SEE impacts of an LSLA deal without baseline information could benefit from a different general research design that incorporates counterfactual cases of areas with similar SEE characteristics. Incorporating counterfactual cases in the understanding of SEE impacts would add another layer of knowledge to the findings of this

research. This would also enable robust econometric analyses of the socio-economic costs and benefits of an LSLA deal *in limbo of development*. This proposes a research path that can build on the findings presented in this thesis. This study was constrained by both time and financial resources to enable incorporating counterfactual cases.

In Chapter 1, I reported on a case that was in court at the time of the fieldwork. The case of the 30 Bwande households in Mingomba is a potential research topic to be pursued to understand self-organisation of communities to resist land expropriation by investors, and the role of traditional authorities and government officials. It will lead to a nuanced understanding of Nansanga as a contested space that is 'created and maintained using a variety of tactics, including authoritarian interventions alongside collaborative and participatory governance (Symons, 2016 p150)' that involves government officials, traditional authorities, community members themselves, civil society organisations, development partners and investors. It was beyond the scope of this research to investigate this case to understand local community contestation and resistance. Time was also a constraint.

## **8.6 Concluding thoughts**

In this concluding section, I first refer back to the aims of this thesis to indicate that I have achieved them in specific chapters. I then refer to the methodological approach that enabled me to achieve the aims of this thesis. Finally, I situate Nansanga farm block within some key agrarian change as



well as general socio-economic development questions. I conclude by suggesting that the emergence of tobacco production and manganese mining are transforming livelihoods rather than creating them.

In this thesis, I set out to understand the SEE impacts of an LSLA deal, Nansanga farm block, in *limbo of development*. The Nansanga land deal in Senior Chief Muchinda of the Lala people in central Zambia, involved the conversion of 155 000 hectares of customary land to leasehold to pave the way for agricultural investments. The deal was facilitated by the government with specific development objectives (see section 8.3.1).

In **Chapter 1** I outlined the research aims based on research gaps I identified on LSLA deals. In terms of situating my work within the broader LSLA research, Nansanga farm block makes a case that strengthens the relevance of case studies in improving our understanding of LSLA deals. There is more academic appeal to investigate the SEE impacts of LSLA deals that are functioning or have run their course. To the best of my knowledge, academic investigations into failed LSLA deals, using the mixed methodological approach as I have done in this thesis, are still rare.

I believe that I have been able to achieve the five aims of the thesis that I outlined in **Chapter 1**, section 1.9. Aim one was to understand the biophysical characteristics and socio-cultural uses of the miombo woodland where the Nansanga farm block has been established. I have achieved this aim in **Chapter 3**. Aim two was to propose a conceptual framework to enable a more comprehensive understanding of the SEE impacts of LSLA deals. I have proposed a conceptual framework in **Chapter 4** (an edited version of **Chapter 4** has already been accepted for publication in the *Journal of Land*

*Use Policy*). Aim three was to understand the role of formal and informal institutions in LSLAs and how these institutions shape LSLA deals and their outcomes. I have achieved this aim in **Chapter 5**. The fourth aim was to understand how LSLA deals *in limbo of development* (re)shape and are (re)shaped by different socio-economic and biophysical landscapes in which they unfold in order to improve the understanding of the political ecology of failed or stalled LSLA deals. I have achieved this aim in **Chapter 6**. Finally, the fifth aim to understand the coping strategies of communities in LSLA deals *in limbo of development* has been achieved in **Chapter 7**.

From the findings, my conclusions are that LSLA deals on customary land are more likely to reinforce pre-existing community-level socio-economic disparities, and more likely to benefit community members who are already better off. In addition, socio-economic benefits to community members are more fortuitous. This is because LSLA deals are businesses for socio-economic interests of investors, and not primarily for the benefit of community members. Also, land and labour are important resources in Nansanga that define socio-economic wellbeing of households. Land is not only a factor of production, but it is also a territory and mark of identity. That is, Lalaland is for the Lala people. Converting customary Lalaland to leasehold for private and or corporate interests is therefore, tantamount not only to physical land expropriation but also to *de-territorialisation* that strips people of their identity. In the same vein, for traditional leadership, land is a mark of power and authority, as indicated by the Senior Chief Muchinda: *How can I be a Senior Chief without land? Land is what defines my power*

*and influence as a Senior Chief in this chiefdom* (see Chapter 7 - interview with Senior Chief Muchinda, Nansanga, November, 2016).

Community members have had to start splitting their labour between their own farms and working in emerging economic opportunities (tobacco, and migrating to work in manganese mines and farms outside Nansanga). While some community members have had part of their land taken away, others have been threatened of displacement, and others are actually selling it as coping mechanism. Despite the successful conversion of customary land to leasehold, the findings presented in this thesis suggest that the farm block program, as conceived and implemented by the government, is less likely to achieve its objectives.

The Nansanga case has presented complex and contradictory ways in which the area is generally having socio-economic benefits from the production of tobacco for a tobacco leaf company and manganese mining. Land is a factor of production, and labour is the resource that people need for their livelihoods tied to the use of land. From the findings, the Nansanga case brings to the fore some important classic agrarian change questions. First, to what extent does the Nansanga farm block in *limbo of development* contribute to the proletarianisation of community labour in favour of the production of tobacco and manganese mining? Second, given the extractive nature of tobacco production and manganese open pit mining, to what extent are these socio-economic activities leading to the *marginalisation of crop production* in both the short and long terms? Given the labour flight and land sales that are leading to the *de-territorialisation* of Lalaland, what kind of

agrarian change are tobacco production and manganese mining activities likely to facilitate in Nansanga?

In addition to the questions above related to agrarian change, there are also relevant development questions that the findings of this research work raise. For example, in the short and long terms, what socio-economic development trajectory can be imagined in a farm block in *limbo of development* where tobacco production and open pit manganese mining are flourishing? With many non-Lalas migrating to Nansanga to work in the mines, what form of rural class formation is slowly emerging in Nansanga, and how is that influencing the socio-ecological system of the area? What is the political ecology of the transition and or transformation of the socio-ecological system of Nansanga?

The findings have prompted the agrarian change and general development questions raised above however, it was beyond the scope of this research to provide answers to these questions. The findings suggest that the failure of the Nansanga farm block program has led to a transition from a food crop production area to a development of capitalist agriculture (tobacco production) and mining development. Also, the findings indicate that labour flight, and land sales that are leading to *landlessness* and *de-territorialisation*, are transforming livelihoods rather than creating them in Nansanga. As noted in **Chapter 7**, the transformation of livelihoods is reinforcing pre-existing socio-economic situations of the people which are shaped and conditioned by their dependence on land and informal regulations of access and use of it (as discussed in **Chapters 3** and **5**). Finally, tobacco production and manganese mining, flourishing socio-

economic extractive activities, are leading to deforestation and land degradation in ways that are slowly influencing food crop production. It is perhaps too early to tell the direction and trajectory that the food crop production will take. However, it is likely that the direction will be influenced by labour flight from food crop production at household level to working in tobacco farms and manganese mines, and the general degradation of farmland.

Finally, the findings prompt the question: should farm blocks be continued in Zambia, or should they be developed differently? The farm block policy response in Zambia can be informed by a response from one of the key informants: '*The government cannot financially sustain itself courting investors with infrastructure development in farm blocks* (Quasi government-KII #1, Lusaka, April 2018).' This quoted response is unpacked and substantiated by a detailed review in Section 1.6 on the public-public partnership model on which the farm block program has been based. There are inherent ideological contradictions and therefore practical challenges in successfully implementing an LSLA deal that would ensure a *win-win-win* situation for the state, the private sector and community members. Different claims to legitimacy in land administration and use rights, quality of jobs and levels of compensation, unbalanced power dynamics in defining the use and value of land and access to financial resources and technology for the exploitation of land as a resource are some of the factors that make a win-win-win scenario elusive in LSLA deals.

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## Appendix 1: Published version of Chapter 4

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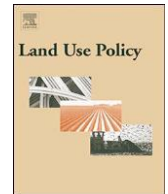
# A conceptual framework for improving the understanding of large scale land acquisitions

Andrew Chilombo\*, Janet A. Fisher, Dan van Der Horst

University of Edinburgh, School of GeoSciences,

## Land Use Policy

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### ABSTRACT

Efforts to improve the understanding of large scale land acquisitions (LSLAs) have been marred by methodological and epistemological challenges. Dominant approaches take a geopolitical lens that categorises the global north as 'resource poor, financial haves' and the global south as 'resource rich, financial have-nots' to generate data with often questionable accuracy. Case studies have prevailed to generate knowledge at community level that contributes to meta-analyses of LSLAs. However, as the post 2013 LSLA research agenda shifts from quantifying seized hectares of land and naming 'land grabbers' towards understanding processes of LSLAs, case studies have proved limited in sufficiently and systematically reflecting dynamics that underpin LSLAs that are local, national, regional and international in scope. The focus on case studies isolates studied cases from drivers and effects of LSLAs at different policy and geographic levels. This paper proposes a conceptual framework for improving our understanding of socio-economic and environmental implications of LSLAs at different policy and geographic levels. Literature has been reviewed on the methodological and epistemological challenges that have rendered elusive a comprehensive understanding of LSLAs. In addition, focus group discussion interviews were done in Nansanga farm block, a Zambian government-led LSLA program to complement reviewed literature. The framework is applied to the farm block. The interviews were therefore, done to qualitatively contribute to the understanding of positive and adverse lived experiences of community members following the LSLA program. Without claiming to be a panacea for challenges of researching LSLAs, the framework makes a compelling case for a mix of methodological approaches that simultaneously consider context specific micro level processes and how they are linked to broader, higher policy and geographic level spaces and contexts. The framework points to the danger of researching cases of LSLAs in isolation from their drivers/causes and effects/impacts at different policy and geographic levels.

### 1. Introduction

The early 2000s have seen a growing number of large scale land acquisitions (LSLAs), especially in Africa. LSLAs are not a new phenomenon (Deininger, 2011) but compared to historical accounts, including the era of colonialism of the global south, the recent LSLAs are taking place in an era of more developed and matured democratic rights, on paper (law) as well as in practice (civil society organisations; free press). LSLAs are happening in a time with more eclectic but developed social science disciplines with overlapping methodological and epistemological approaches. The era is also characterised by technological advancements that facilitate the exploitation of natural resources. Despite this level of sophistication, a comprehensive understanding of LSLAs remains elusive to social science research (Borras et al., 2011a). Thus far, LSLAs have mainly been researched from the perspectives of political economy, political ecology, and agrarian change

(Messerli et al., 2013). Some approaches take a geopolitical lens that categorises the global north as 'resource poor, financial haves' and the global south as 'resource rich, financial have-nots.' Others focus on case studies, isolating cases of LSLAs from drivers and effects at different policy and geographic levels.

LSLAs have spurred polarised debates. Pro-LSLA actors view LSLAs as avenues of rural development, employment creation, technology transfer and food security. Anti-LSLA actors, on the other hand resist LSLAs citing displacement of communities, environmental degradation, loss of community access to water, land and forest resources that underpin their livelihoods. Evidence on these negative and positive impacts is often patchy and anecdotal (Oya, 2012). A shift from anecdotal claims requires localised investigations because that is where processes of exclusion or inclusion happen that yield different relationships

\* Corresponding author.

E-mail addresses: [a.chilombo@sms.ed.ac.uk](mailto:a.chilombo@sms.ed.ac.uk) (A. Chilombo), [janet.fisher@ed.ac.uk](mailto:janet.fisher@ed.ac.uk) (J.A. Fisher), [Dan.vanderHorst@ed.ac.uk](mailto:Dan.vanderHorst@ed.ac.uk) (D. van Der Horst).  
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between producers, labourers and larger capitalist enterprises (Borras et al., 2010). According to McCarthy (2010), micro-processes at local levels and how they interact with wider dynamics, shape outcomes of LSLAs. While this offers a cautionary tale on what is generalisable regarding positive and negative impacts (Cotula et al., 2014a), it also strengthens the need for generating 'solid evidence through detailed, field-based research' (Hall & Scoones, 2011) that brings out the micro-level operations of micro-processes that influence LSLA outcomes. This call acknowledges that impacts vary and this needs to be reflected in analyses of impacts of LSLAs (McCarthy, 2010; Suhardiman et al., 2015). The micro level investigation of socio-economic and environmental implications entails an evaluation of the socio-ecological system of where LSLAs are taking place.

Micro-level grounded investigations through cases studies have prevailed in LSLA research, serving to improve the quality of evidence and data to inform political decisions and social action (Bräutigam and Zhang, 2013). Useful as micro level investigations into LSLA may be in providing more accurate and reliable data to inform meta-analyses, they remain incomplete. This is because the analyses are done in isolation from different higher policy and geographic level dynamics that drive LSLAs on the one hand, and their effects, on the other. In a multi-country study to test claims about LSLAs in Africa, Cotula et al. (2014b p905) note that 'the full implications of the new wave of land deals can only be assessed if the deals are examined not in isolation, but within the wider political and economic projects they form part of.' Similarly, in a study into the failure of LSLAs to contribute to sustainable development, Schoneveld (2017) observes that the interplay between domestic institutional dynamics and agricultural investment inflows from LSLAs are usually studied in isolation. Despite the acknowledgement of the broader dynamics of LSLAs, the research agenda on LSLA has not been sufficiently explicit about any conceptual framework that reflects the interconnectedness of LSLA cases at different geographic and policy levels. Research into LSLAs has not sufficiently been able to link different characteristics of the phenomenon to reflect its complete anatomy. A conceptual framework to link different characteristics and dimensions of LSLAs is therefore required, particularly as LSLA research agenda has shifted from quantifying seized hectares and naming 'land grabbers' towards understanding processes and impacts of the phenomenon (Oya, 2013a).

This paper responds to this scholarly call. It proposes conceptual framework to improve our understanding of the socio-economic and environmental implications of LSLAs in a systematic and integrated way at different policy and geographic levels. The paper builds on the contributions of case studies for generating evidence that contribute to meta-analytical studies. This paper proposes an LSLA conceptual framework which acknowledges different drivers of LSLAs (see Hall, 2010) and the socio-ecological contexts in host countries in the global south (see Messerli et al., 2014; Schoneveld, 2017). We posit that a comprehensive understanding of socio-economic and environmental implications of LSLAs needs to account for macro, meso and micro level policy and economic drivers but also implications of the phenomenon at the same policy and geographic levels. It argues that understanding policy and economic drivers of LSLAs at global, regional and national levels is as important as understanding the socio-economic, cultural and environmental dynamics at community level where LSLAs actually happen and immediate implications are experienced. Case studies are invaluable in generating evidence, but remain incomplete if not complemented by an understanding of higher level drivers and effects. The proposed framework is an attempt to encourage a research agenda on LSLAs that uses a mix of methodological approaches to holistically and integrally understand socio-economic and environmental implications at the macro, meso and micro levels. This is because drivers and effects of LSLAs have local, national, regional and international linkages and dimensions (Table 1).

The paper is structured as follows: We first present what Edelman et al. (2013) refer to as the 'making sense' phase of LSLA research. It

Table 1

Examples of Pro-LSLAs official documents in Zambia.

Name of official document	Year
Lands Act	1995
Zambia Farm Block Development Plan	2005
The National Adaptation Plan of Action on Climate Change	2007
The National Policy on Environment	2007
The National Energy Policy	2008
The National Climate Change Response Strategy	2010
Zambia National Agricultural Investment Plan (2014-2018)	2013
The National Forestry Policy	2014
Nationally Appropriate Mitigation Actions	2014
National Strategy for Reducing Emissions from Deforestation and Forest Degradation	2015
Second National Biodiversity Strategy and Action Plan	2015
Zambia's Intended Nationally Determined Contributions	2015
Zambia Forest Investment Plan	2017

highlights the research focus and methodological, epistemological and data quality challenges during this phase. A section on the 'post 2013 LSLA research agenda' is presented that builds on the 'making sense' phase with attempts to improve LSLA research through case studies. In this section, scholarly calls for case studies are reviewed, highlighting their limits in understanding a phenomenon of local, national, regional and global scope. Consistently, a section is presented to rationalise an LSLA framework. The framework is presented before it is applied to Nansanga farm block (as Nansanga henceforth) in Zambia. Nansanga is part of the government of Zambia (GRZ)-led commercial agriculture program that began in 2002 (see GRZ (2005) to establish one farm block in each of the then nine provinces.

In terms of approach, this paper combines literature review with a case study to illustrate the proposed framework within a concrete case of an LSLA that is unfolding. Between September 2016 and June 2018 in three phases, we carried out 26 focus group discussions within Nansanga, 59 key informant interviews (41 within Nansanga with community members, and 18 outside Nansanga with GRZ institutions, NGOs, development practitioners, researchers and investors). Thus, the proposed conceptual framework was informed by field interviews and literature review, particularly the methodological and epistemological themes developed in Borras et al. (2011b), Scoones et al. (2013) and special commentaries on LSLA research methods by Oya (2013a), Edelman (2013), Edelman et al. (2013) and Messerli et al. (2014). The framework emphasises the importance of accounting for micro level benefits and costs of phenomena such as LSLAs within national, regional and global dynamics of which they are part, through cause and effect. Nansanga was selected because at the time of fieldwork, it was the most advanced in terms of government investments for infrastructure development, and farms had already been demarcated and on lease. There were also socio-economic activities, particularly tobacco production and manganese mining that were associated with the level of its development. It was therefore the farm block that enabled the application of the proposed conceptual framework.

## 2. The 'making sense' phase of LSLAs

When the contemporary LSLAs caught media attention following the 2007/2008 food price spike crisis (see Taylor and Bending, 2009; Woodhouse, 2012), pro and anti-LSLA actors focused on the socioeconomic and environmental benefits and costs of the phenomenon in host countries (Borras et al., 2011b). Research focused on understanding what was happening regarding LSLAs by asking questions related to 'where and when, who is involved, how much land is involved, and how many people are being expelled from their land? How do we define land grab? What do we count? How do we count? How do we interpret our sources?' (Edelman et al., 2013 p.1520). These questions were tackled between 2007 and 2012, a time that Edelman et al. (2013) refer to as the 'making sense' period. During the same period, there was what Oya (2013a) refers to as 'literature rush' about LSLAs, evidenced by media reports, NGO reports and academic publications.

The dominant discourse during this phase among NGOs, academia, think-tanks and the media, according to [Borras and Franco \(2012\)](#), was: LSLAs involve land use change that lead deforestation; LSLAs are transnational in nature; LSLAs involve finance capital that partly lead to speculative deals; LSLAs lead to disarticulation of affected communities; LSLAs are non-consultative, non-transparent and involve corruption; and LSLAs require some form of regulation through guidelines or principles.

Questioning the dominant discourse as LSLAs unfolded was imminent. LSLAs are dynamic and not transparent ([Borras and Franco, 2012, 2010](#); [Locher and Sulle, 2014](#)), and as [Nolte \(2014a\)](#) notes, they happen in 'black boxes.' This leads [Oya \(2013a\)](#) to question the extent to which, for example, global numbers of hectares of land that have been acquired are accurately reflective of the unfolding nature of LSLAs. According to [Edelman \(2013 p.487\)](#), high reported numbers of seized hectares have 'little regard for the solidity of evidence or for considerations of scale other than area.' [Oya \(2013a\)](#) highlights some of the serious problems that compromise data quality and evidence. Oya refers to data confusion (adding oranges and apples by forcibly mixing actual facts, perceptions, intentions, rumours, guesstimates), data selection biases, difficulties in collection of data on land use, and use of unchecked and unverified data in reports, including academic publications. In addition, some conclusions on outcomes or impacts did not match with available evidence, and research objectives and adopted research methodologies were conceptually and theoretically inconsistent ([Edelman et al., 2013](#)).

The 'making sense' period was characterised with the 'syndrome of false precision,' ([Oya \(2013a\)](#), with 'facts' presented as concrete and undisputed, yet their basis is dubious ([Scoones et al., 2013 p.478](#)).' However, it offers new pathways of knowledge building that has put LSLAs on public and policy map ([Scoones et al., 2013](#)). To this end, [Locher and Sulle \(2014\)](#) indicate that political decisions and social actions about LSLAs have been informed by inaccurate data of the 'making sense' period. Effectively, data with the 'syndrome of false precision' has widely been used by different interest groups, putting LSLAs among one of the most debated topics in development work in the past decade. Even when recent work has been undertaken with improved quality of data, [Bräutigam and Zhang \(2013\)](#) observe that initial papers on the problematics of LSLAs overshadow new improved data in terms of impact.

LSLA researchers in the post 2013 period are aware of the methodological challenges but also of the importance of collecting accurate, quantifiable and verifiable data on LSLAs. [Oya \(2013a p.504\)](#) suggests that 'methodological discussion of evidence on 'land grabs' should go beyond the big numbers and large datasets and attempt a broader critical discussion of what is being reported, published and on the basis of what sources and methods.' In this light, the post 2013 research agenda on LSLAs needs to pay attention to less publicised cases and actors behind hectares ([Edelman, 2013](#)). Thus, instead of looking at who bought land from Nansanga farm block and how many hectares, for example, [Oya \(2013a\)](#) suggests that research focus more on learning about the processes and impacts of land deals rather than verifying 'the number of land deals and their acreage, the names of the 'grabbers', their nationality, and what to count or not to count (p.505).'

In the post 2013 LSLA research agenda, [Edelman \(2013 p.488\)](#) cautions that 'oversimplified, outlandish or sensational claims may not only undermine efforts to counter specific cases of land grabbing - and claims about land grabbing more generally - but may also divert attention from less publicized cases and from the actors behind the hectares.' [Oya \(2013a\)](#) reflects on methodological approaches of 'land grab' databases and the 'land grab' literature 'rush,' for the post 2013 LSLA research agenda with a bold proposal that research focus more on learning about the processes and impacts of land deals rather than verifying 'the number of land deals and their acreage, the

names of the 'grabbers', their nationality, and what to count or not to count (p.505).' On the other hand, [Edelman \(2013 p.488\)](#) argues that demands for improved land governance need to be scaled up at national and international levels; improving quality of data 'on grabbed areas [^] who the grabbers are, what they are doing or intend to do with the land, and what the social, economic and environmental impacts have been or are likely to be.'

Results of studies on LSLAs post 2013 LSLA research agenda as initiated by the *Journal of Peasant Studies*, 'Forum on Global Land Grabbing (see Global Land Grabs: Historical processes, theoretical and methodological implications and current trajectories by [Edelman et al. \(2013\)](#)), are still dominated by negative implications of LSLAs, including anecdotal, unverified and moribund cases in databases and published reports which then, inevitably, appear to be 'written in stone' ([Edelman, 2013 p.497](#)).' [Bottazzi et al. \(2018 p.128\)](#) report on 'a clear increase in total monetary income, a perceived improvement in food and water security, and an increase in food consumption expenditure' in Sierra Leone, however acknowledge that positive outcomes of LSLAs are generally limited. In a review of studies on LSLAs, [Oya \(2013b p.1545\)](#) found that a 'large majority of the works reviewed reported negative outcomes as their dominant conclusion (60%), while fewer than 3% reported mainly positive outcomes.'

In a meta-analysis, [Oberlack et al. \(2016\)](#) identified the following adverse impacts of LSLAs: loss of access to land and natural resources; more conflictual livelihood contexts; increased intracommunity inequality; contested compensation; ecosystem degradation; adverse labour transformation; maladaptive livelihood strategies; food security decline; and erosion of social capital. [Dwyer \(2014 p.380\)](#) reports on 'a mix of poor policy, institutional ineptitude and personal corruption' of Chinese investments in north-western Laos PDR. [Matenga and Hichaambwa \(2017\)](#) note that landlessness is a common feature in LSLA deals and rural communities end up as farm workers. In an African continental study, the [AU et al. \(2014 p.3\)](#) note 'widespread alienation of land from local communities without adequate compensation, margin-alization of (family) smallholder producers in favour of large scale investors who received better protection and accentuation of gender based inequalities.' The negative impacts of LSLAs are attributed to loss of access to land and associated resources for productive purposes ([Milgroom, 2015](#); [Oberlack et al., 2016](#)), and vary from context to context, partly attributed to local level dynamics ([Suhardiman et al., 2015](#)).

While the 'making sense' phase put LSLA on the public and policy map, serious concerns have been raised concerning the quality of data during the phase. It was a phase of 'quick and dirty' fact-finding research missions ([Edelman et al., 2013](#); [Oya, 2013a](#); [Scoones et al., 2013](#)) with 'competing initiatives and perspectives, as different organisations sought to quantify ever more shocking 'killer facts' particularly dramatic numbers of people displaced and hectares grabbed ([Edelman et al., 2013 p.1520](#)).' With a research agenda that is focused on learning about the processes and impacts of land deals rather than dwelling on the number of land deals or names of 'land grabbers' ([Oya, 2013a](#)), case studies have been proposed. According to [Edelman \(2013 p.498\)](#), 'we need case studies that are both more numerous and more rigorous, and - perhaps even more importantly - a deeper discussion about the kinds of inferences and generalizations that we can reasonably make from case studies.'

Having set the stage for the post 2013 LSLA research agenda as it builds on the 'making sense' phase, the next section briefly reviews the scholarly support for case studies; highlighting their contribution to improving evidence and data quality about the socio-economic and environmental implications of LSLAs. The section also highlights the limits of case studies in researching a phenomenon that has both temporal and spatial scales. In other terms, given the global, regional, national and local scope and nature of LSLAs, a case



study of an LSLA in a particular community is good, but not sufficient to unravel policy drivers, actors and processes at national, regional or global levels.

### 3. Case studies in the post 2013 LSLAs research agenda: a brief review

Research efforts to improve the understanding of LSLAs have been marred by methodological and epistemological challenges. LSLA researchers in the post 2013 period are aware of the methodological challenges but also of the importance of collecting accurate, quantifiable and verifiable data on LSLAs. Oya (2013a p.504) suggests that 'methodological discussion of evidence on 'land grabs' should go beyond the big numbers and large datasets and attempt a broader critical discussion of what is being reported, published and on the basis of what sources and methods.' The post 2013 research agenda on LSLAs has to learn from the shortcomings of the 'making sense' phase during which 'sources and reports of unknown reliability are opportunistically combined (Oya, 2013a p.505).' The post 2013 research agenda needs to reflect upon and avoid the common biases and shortcomings of previous work in the 'making sense' period of LSLA research (Edelman et al., 2013).

Efforts by 'one-stop-shops' Land Matrix Partnership<sup>1</sup> and GRAIN<sup>2</sup> have been commended for gathering as much information as possible about what is happening on the ground regarding LSLAs, however Borrás et al. (2011a) warn against the inherent inaccuracies, unreliability of data and their sources and respective institutional agendas. Scoones et al. (2013) point to seven factors that have contributed to poor understanding of LSLAs: fixation on number of hectares as 'killer fact'; inappropriate inferences derived from non-evidence based 'data' or wrong methods; poor quality sources of data; selection biases of data; issues surrounding the review process of published work; rapidity of easy access to 'data'; and lack of consensus on the definition of the term 'land grabs.' In light of these factors, Borrás et al. (2011b) have proposed case studies to enrich meta-analyses with more accurate and reliable data. The call to use case studies to improve our understanding of LSLAs is an acknowledgement that 'we actually still don't know how many land deals have been entered into, where and with what consequences (Scoones et al., 2013 p.473).' According to Edelman (2013 p.498), 'we need case studies that are both more numerous and more rigorous, and - perhaps even more importantly - a deeper discussion about the kinds of inferences and generalizations that we can reasonably make from case studies.' Case studies generate knowledge at community level that contributes to meta-analyses of LSLAs.

Questioning the epistemology of land grabbing data, Edelman (2013) proposes case studies as 'they are likely and unavoidably the main means through which scholars and activists can reliably understand what has occurred and what is occurring on the ground and to establish baselines for measuring subsequent impacts (p.498).' With an emphasis towards improving the understanding of livelihood impacts, Oya (2013a) notes that 'there are still major thematic and analytical gaps and methodological problems with what is being published, particularly with regard to evidence on socioeconomic impacts, a central issue in debates on land grabs (p.1533).' Given the evolution of research on LSLA, attention needs to focus on 'the characterisation of a multi-faceted and multi-caused phenomenon where context specificity is very important (Oya, 2013a p.1535).' Understanding context specificities of LSLAs reduces anecdotal claims that take potential impacts of LSLAs as if they were actual (Oya, 2013a).

<sup>1</sup> <http://www.landmatrix.org/en/> Land Matrix is a global and independent land monitoring initiative that promotes transparency and accountability in decisions over land and investment. As a Global Observatory, Land Matrix collects and visualises information about large scale land acquisitions.

<sup>2</sup> <https://www.grain.org/> GRAIN is an international non-governmental organisation that works to support small farmers and social movements in their struggles for community-controlled and biodiversity-based food systems. As a 2011 Right and Livelihood Award winner, GRAIN has been appraised as having been 'extremely effective in its mission to expose the risks of land grabbing.'

In the work on land acquisitions in sub-Saharan Africa that focused on understanding determinants, processes and actors, (Nolte, 2014b) asserts that the spatial distribution of LSLAs is difficult to fully understand. In this study Nolte acknowledges challenges that are difficult to surmount to enable a comprehensive understanding of the phenomenon, indicating that since 'deals are often negotiated behind closed doors, the process remains a 'black box' to outsiders (Nolte, 2014b p.9).' For empirical insights into the 'black box' challenge, Nolte (2014b) proposes case studies. Given the global attention to LSLAs by different stakeholders with eclectic interests in the issue, getting grounded facts correct is a scholarly imperative. To address these challenges, Scoones et al. (2013) argue in favour of participatory action research in which those involved in LSLAs are part of knowledge building rather than being replaced by researchers.

Grounding an understanding of LSLAs within a specific case becomes relevant to interrogate the particularity of LSLAs within the scholarly narrative of what is known and unknown about them. The examples above in favour of case studies demonstrate the contribution that case studies make to improve our understanding of LSLAs. To the extent that LSLAs entail foreignisation (Zoomers, 2010), marketisation (Chimhowu, 2018) and local-to-global commodification of the means of production at different policy and geographic levels, the scholarly call in favour of case studies certainly contributes to 'grabbing the devil by the tail.' However, a more improved understanding of a particular LSLA needs to go beyond a case study of an LSLA in a community or area where an LSLA is unfolding, to link it to broader dynamics at higher geographic and policy levels that LSLA deals are part of. LSLAs at community level are linked to national, regional and global socio-economic and environmental implications. For example, food security, biofuels and financial investments as drivers of LSLAs, are local, national, regional and international in scope. A particular LSLA for any of these drivers will therefore somewhat be linked to national, regional or international dynamics. This link is in terms of policy drivers but also effects or impacts. Case studies in the LSLA research agenda is one approach, and as an approach, is not wrong but just insufficient (Scoones et al., 2013) to understand a phenomenon that has signalled a new world order as it 'points to a transition towards new world political, economic, and biophysical conditions with the emergence of the BRICs and middle-income countries, global biofuels complex, and green grabbing (Margulis et al., 2013a p.7).' Case studies are therefore, limited in understanding LSLAs beyond particular land deals in a given area as the approach does not allow for an integration of LSLAs dynamics at different geographic and policy levels. The social and environmental implications of the new agro-industrialisation are both far-reaching and take different forms across different landscapes, with particular class, gender, ethnic, livelihood and environmental consequences (Borrás et al., 2010).

Against this backdrop, the following section builds on what has been presented in the current section to answer why an LSLA conceptual framework is important for the post 2013 research agenda. How can evidence from case studies enrich our understanding of LSLA beyond local levels? Given the evolution of LSLAs, how does research continue to meaningfully contribute to uncovering the different dynamics of the phenomenon at different policy and corresponding geographic levels? How does future research build on what is already known? In the next section, therefore, this paper attempts to answer these questions by proposing an LSLA conceptual framework to inspire and rationalise the use of a mix of integrated methodological approaches to enable an improved understanding of processes that underpin LSLAs at different policy and geographic level spaces and contexts.

### 4. Why an LSLA conceptual framework?

In Section 2 this paper has presented challenges of the 'quick and dirty' research that flourished between 2007/2008 and 2012 to understand LSLAs, during the 'making sense' phase. Recognising the methodological and

epistemological deficiencies of the 'making sense' phase, in Section 3, the paper has presented LSLA scholars' support for case studies for what has been referred to in this paper as 'the post 2013 LSLA research agenda' phase. In Section 3, this paper has acknowledged the contribution of case studies to generate more grounded accurate and robust data about LSLAs as they evolve. The limits of case studies have also been pointed out. Premised on the limits of case studies, this section discusses the rationale for an LSLA conceptual framework that recognises and reflects the micro, meso and macro geographic and policy dynamics of LSLAs.

Land acquisition from local communities is not only foreignisation of local territories (Zoomers, 2010), it is also marketisation of the local means of production (Chimhowu, 2018). Thus, 'land is shifting from sovereign national territory to a commodity for the global market.' Margulis et al. (2013b p.6) assert that Research, including case studies that reveal rich information about implications of LSLAs hardly reflect the foreignisation, the marketisation and the local-to-global commodification at different policy and geographic levels of community land as a means of production but also source of livelihoods. Thus, the approaches do not systematically and sufficiently account for the multilayer cascading and escalating effects of LSLAs in an integrated way. Case study approach and meta-analyses informed by case studies are limited in fostering an understanding of processes of LSLAs beyond community level where LSLAs unfold.

A comprehensive approach is therefore needed to account for cascading effects of policy infrastructure at different levels as well as escalating effects of LSLA implications. The underlying assumption of this proposed framework is that land in the contemporary wave of LSLA is a global commodity that requires, as Sikor et al. (2013 p522) suggest, 'systems of rule at all levels of human activity — from the family to the international organization — in which the pursuit of goals through the exercise of control has transnational repercussions. The proposed conceptual framework shows different policy and geographic levels to improve our understanding of socio-economic and environmental (SEE) implications that are at the centre of pro and anti-LSLA actors.

On the one hand, the framework highlights the cascading implications of LSLA policy and economic drivers at different policy and geographic levels. The framework reflects that data availability becomes scarcer as we move from macro to lower levels. On the other hand, the framework recognises escalating LSLA implications from community levels where LSLAs take place to higher geographic and policy levels: national (including sub-national such as district/county or provincial/state); regional; and global levels. In addition, data quality about actual LSLA implications improves as we move from micro (where actual implementations of LSLAs happen) to macro levels. Thus, the framework recognises the critical role of evidence generated at community level to inform policy response at higher levels (shown by upward dashed arrows in Fig. 1 above). The framework is cognisant of the fact that the relative gravity of LSLA implications (positive or negative) will be greatest at community level, and least at the global level (indicated by numbers from 4 to 1, respectively). Finally, the framework recognises the critical role of mixed research and methodological approaches that close the loop between the left and the right components and processes, that is, the cascading drivers/causes and the escalating implications, respectively. LSLAs in particular communities do not happen in isolation, but they are linked to policy spaces that drive them and effects and impacts that they (LSLAs) produce.

Global level factors constitute financial investments, biofuels and food security narratives, including climate change governance policy guidelines such as the Paris 1.5 °C ambition to limit global warming (Hulme, 2016) or the Sustainable Development Goal on zero hunger through agriculture (Le Blanc, 2015). Regional level factors represent policies such as the EU climate policy that, among other measures, promotes the production of green power to meet its target of reducing greenhouse emissions to at least 20% by 2020 (Böhringer et al., 2009). Other regional policy drivers include the African Union CAADP (Kolavalli and Flaherty, 2010; NEPAD, 2010). As Parties to multilateral environmental agreements, and as

member states of regional blocs, countries domesticate the legally binding and voluntary agreements in their national policies. Some of these national policies are pro-investors that lead to LSLAs. Investors are business entities that are primarily looking for profits. Thus, they are likely to target areas with socio-ecological business potential for profits (Messerli et al., 2014). These constitute micro, community level factors that both drive LSLAs and contribute to shaping outcomes.

Actual implications are greatest at the community level. If the outcomes are positive, communities are better off and contribute more to the national economy. Similarly, if the outcomes are negative, the impacts are felt the most at community level. For example, if an LSLA case leads to resource scarcity at community level, this can trigger rural-urban migration, thereby increasing urban population. Competition in urban areas can lead to migration to neighbouring countries, and eventually other regions such as Europe in search of other or better means to survive. As has been reported (see Maxwell and Reuveny, 2000; Evans, 2010; Homer-Dixon, 2008; Musahara and Huggins, 2004; Ohlsson, 2000), LSLAs can lead to resource scarcity and limit living opportunities of communities that can eventually lead to migration and civil unrests. Taking this example of escalating effects of migration, evidence at community level can therefore, inform national, regional and global level policy spaces.

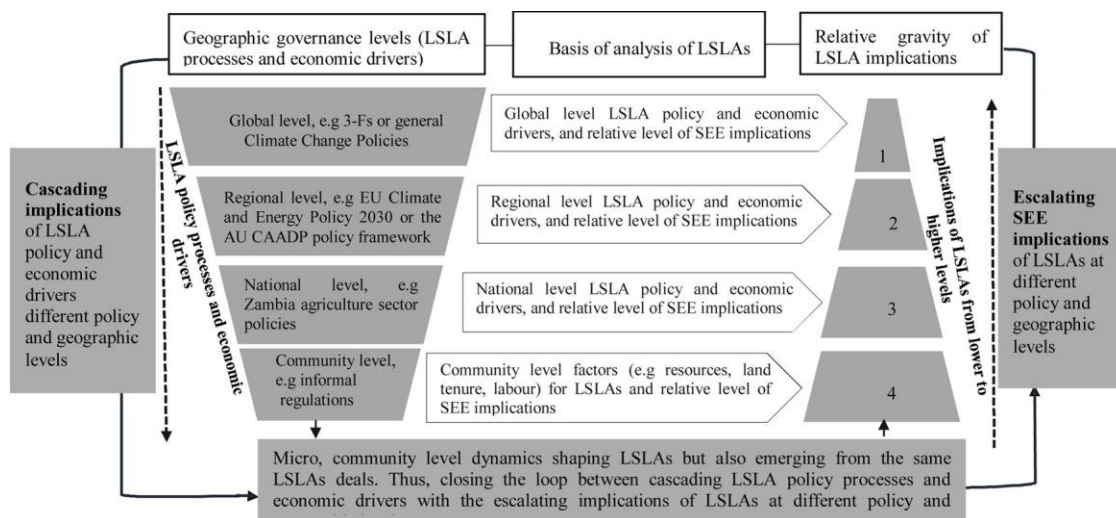
Following from the methodological and epistemological challenges of the 'making sense' phase and the proposal for case studies in the 'post 2013 LSLA research agenda' phase, this framework makes a case for an integration of higher levels of policy and geographic spaces that drive LSLAs but also to which repercussions reach in research efforts to understand the evolution of LSLAs. If LSLAs signal a shift in the world order as Margulis et al. (2013a) have indicated, methodological approaches that go beyond case studies hold more promise to improve our understanding of LSLAs that are local, national, regional and global in scope. In this regard, efforts to research particular LSLAs where they are unfolding need to pay attention to the 'feedback loop' between global, regional and national level policy and geographic drivers/causes and effects/impacts and how they are linked to the cases under investigation.

The framework has applications to other phenomena that are global, regional and national in nature. The framework emphasises the importance of accounting for micro level benefits and costs of phenomena within national, regional and global dynamics of which they are part, through cause and effect. This is important because phenomena that are local, national, regional and global in scope need not be told as a single story where their multidimensionality is either ignored, misunderstood or underrepresented in the accounts

In addition, this framework has potential to shed light on unintended consequences of policy directions made at higher policy spaces and geographic levels far from where policies are actually implemented. This offers perspectives to nuance policy implementation and analysis. Agricultural or energy policy directions to commercially produce biofuels at national or regional level, for example, are not meant to displace rural people. However, they are likely to do so. Reflecting on a particular case of displacement from biofuel production within the broader discussions of agriculture for rural development or biofuels for clean environment can inform policy change at higher levels. This is possible if there is a feedback loop as this framework proposes. The framework therefore, is relevant to answering the 'how, why, when, where and who' questions of phenomena that have local, national, regional and global scope. In the following section, this paper makes this attempt by applying the framework to Nansanga, an LSLA that was begun by the Zambian government that commercialised customary land in the country for agriculture.

## 5. Applying the framework to LSLAs in Zambia

To demonstrate the contribution of this framework to improving our understanding of LSLAs, and how it can be used, this section presents the application of the framework to Nansanga in Zambia. This follows



**Fig. 1.** Proposed conceptual approach for understanding LSLAs. SEE represents socio-economic and environmental implications; 3-Fs represent food security, financial investments and biofuels that are associated with the contemporary wave of LSLAs; AU is African Union; CAADP is Comprehensive Africa Agriculture Development Program; and EU represents European Union.

from the previous section that presented the components and processes of the framework. In taking Nansanga as an example for applying the framework, Nansanga is first presented to set the stage for the application of the framework. The application starts with the global scenario then cascades down to regional, national and local policy and geographic levels. What is happening in Nansanga farm block can be traced in Zambia's national policies that have been domesticated in response to regional and global policy and economic drivers. In this regard, the application of the framework demonstrates its value in scanning particular LSLAs within broader geographic and policy spaces, as well as socio-economic and political agenda that they are part of.

5.1. Linking the framework to Nansanga farm block

Following the Lands Act 1995 that liberalised land market (Nolte, 2014a), the Zambian government decreed the establishment of farm blocks across the country for economic diversification and growth; enhancing food and nutrition security through production of adequate food for the nation and for export; and opening up undeveloped rural areas, reduce poverty through employment creation and minimize rural to urban migration (GRZ, 2009). The farm block program is one of the government of Zambia's pro-investor policies, and entailed the conversion of customary land to leasehold. Modelled on contract farming, the government planned to invest significant resources in developing the farm blocks. Nansanga (about 155 000 ha), situated in central province, is the most advanced in terms of infrastructure development that include bridges, an irrigation canal, three dams and trunk roads. By 2012 Nansanga was parcelled into a core venture, commercial farms, medium size farms and smallholder farms. Title deeds were processed and given to investors who had bought farmland in the farm block.

Nansanga is one of the 9 farm blocks in the first wave of government farm block development plan in Zambia. It has a mean annual temperature of 19 °C (Oakland Institute, n.d.), and is situated in the agro-ecological zone I with annual rainfall of "1200 mm. The soil taxonomy is dominantly acrisols and ferrosols, with textures ranging from loamy sand, silt clay loam, sandy clay loam to clay. Luombwa is the biggest river into which smaller Ng'answa, Musangashi, Munte, Nkulumashiba and Lube rivers flow (Oakland Institute, n.d.). Situated in Senior Mu-chinda chiefdom, the tenure of the land was customary. This was converted to leasehold to allow for investments. During the process to convert land tenure, GRZ officials approached the Senior Chief Muchinda for land. Nansanga was officially handed over to GRZ in 2003, and

by 2012, the government had titled land in Nansanga, including allocating it to would-be developers. By 2009/2010, some infrastructure (3 dams, 1 irrigation canal, bridges on major rivers, trunk roads and power poles) had been done. Community members reported to have been informed about the farm block program and the socio-economic benefits. This was information rather than consultation. A community between the source of Bwande river and Munte river in Mingomba area has had, with support from Human Rights Watch, to sue a business man, known as Jeremy Baddock and several government officials for forced eviction threats. At the time of fieldwork, the case was still in court.

Against the afore-mentioned socio-economic objectives of farm blocks, Nansanga as a case of an unfolding LSLA in Zambia, is not isolated from higher level policy and geographic spaces in terms of both drivers and implications. Embedding Nansanga within the discussion of the proposed framework serves to strengthen the call to assess LSLAs within the wider political and economic projects that they form part of (Cotula et al., 2014a), and improving an assessment of the interplay between local, national, regional and global dynamics (Schoneveld, 2017). This also recasts the focus from debates about numbers of hectares seized to understanding processes and impacts of the phenomenon (Oya, 2013a).

Therefore, the qualitative data that was collected from Nansanga forms the basis for contextualising LSLAs at the local level and demonstrating link to higher policy and geographic levels. Evidence-building about LSLA implications starts at community level where LSLAs happen, but to make sense of the implications, research needs to 'close the loop' by understanding implications within policy and economic drivers at higher policy and geographic spaces.

With Nansanga as the local level case of an LSLA, the following subsections demonstrate the application of the framework in Zambia. The section brings to the fore processes that underpin LSLAs, and how they are linked at different policy and geographic spaces and levels. The global level is first presented, illustrating some multilateral environmental agreements and their associated policy processes. The regional level is then presented, citing relevant policy processes and dynamics. Before Nansanga is presented, the national level policy space is discussed to show how it responds to higher policy spaces on the one hand, and influences local level dynamics, on the other.

5.1.1. Global level

In the run up to the Convention of Parties (COP) 21 in December 2015, Parties to the United Nations Framework Convention on Climate

Change (UNFCCC) needed to develop Intended Nationally Determined Contributions (INDCs) to reduce greenhouse gas emissions (WRI & UNDP, 2015). Based on national circumstances, including development priorities, Zambia committed to reducing 38,000GgCO<sub>2</sub>eq with \$35 billion of external financing, and \$15 billion would be domestically mobilised (GRZ, 2015). Currently, Zambia is one of the 174 countries whose INDCs have already been confirmed as NDCs. In addition to the INDCs with UNFCCC, countries adopted 17 Sustainable Development Goals (SDGs) in 2015. Goal 2 is dedicated to zero hunger, and agriculture has been the proposed vehicle to end global hunger. As a Party to the UN family, Zambia is committed to this goal. Further, Zambia is also a Party to the United Nations Convention to Combat Desertification, and the United Nations Convention on Biological Diversity with policy guidelines that are linked to local community access and use of land.

5.1.2. Regional level

At the regional level, Zambia has bilateral ties with the EU bloc that has a climate and energy policy that supports the production of biofuels. According to the Land Matrix Data (LMD), between 2003 and 2016, companies coming from the EU bloc expressed interest in "370 000 ha of land in Zambia to produce crops that include biofuels.

Based on LMD, Fig. 2 below shows that 70% of land in which investors expressed interest in Zambia concerns solely the production of biofuels; 6% a mix of food crops and biofuels; 9% unspecified agricultural crops; 10% a mix of food crops and livestock production; and 5% solely the production of food crops. Each of the land deals recorded in LMD is at least 200 ha. However, there are many more 5-100 ha than > 200 ha land acquisitions by both foreigners and national urbanites (Matenga and Hichaambwa, 2017). It is therefore, possible that the extent of land acquisitions for biofuel production and others is larger than what is recorded in LMD.

In addition to the EU bloc climate and energy policy, the African Union through CAADP has encouraged member countries to grow the agricultural sector by allocating 10% of national budgets so that it can contribute at least 6% to the national GDPs (Chapota and Chisanga, 2016). As a member state, Zambia subscribes to the guidelines provided in CAADP, and therefore, seeks to open more land for commercial agriculture (GRZ, 2006).

5.1.3. National level

In response and compliance with Conventional mandates of UNFCCC, SDGs, and the AU's CAADP, Zambia has been domesticating the international and regional policies through its own national policies. Examples of official documents with policy directions for LSLAs include the ones tabulated below.

These national documents and policies are in alignment with the country's response to global development frameworks.

With the passing of the Lands Act 1995 in Zambia, land markets were liberalised and customary land could be leased for investments (Matenga and Hichaambwa, 2017; Nolte, 2014a). Zambia has thus been promoting pro foreign-investor policies to attract investments. These include the abolition of price controls, liberalization of interest rates, abolition of exchange rate controls, 100% repatriation of profits, free investment in virtually all sectors of the economy, privatization of state-owned enterprises, and trade reforms aimed at simplifying and harmonizing the tariff structure (NEPAD-OECD, 2011; Zambia Development Agency, 2017). Consistently, underdevelopment outcome 4, strategy 3 of the seventh national development plan, the current government intends to promote the development and use of biomass to diversify the energy mix (GRZ, 2017).

51-54% of the land is under customary tenure with informal rules estimates (Sitko and Chamberlin, 2016). This signals easy access to cheap land. Demographically, "60% is rural population constituting "33.3% of the youth between 15-35 years old (GRZ-Central Statistics Office, 2012). These present opportunity for cheap labour. The natural resource base, climatic conditions, socio-economic and policy environment, political stability and demographics constitute factors for LSLAs in Zambia.

5.1.4. Community level

The closest part of Nansanga is "45 km from Serenje town, the political and commercial district centre. Agriculture is the economic mainstay of the area, with communities living within 0.5 km along the main trunk roads. Population was sparse before the establishment of the Nansanga, concentrated in main village centres, particularly Kabundi, Mingomba, Mutale and Kabeta. The labour force is cheap. Cultivating 0.5 ha costs only "\$23. The daily rate is "\$2.40/7 h (focus group discussions). It is also closer to the TAZARA railway line for easy transportation of agricultural products to East Africa and beyond through Dar es Salaam, or the Southern African region. In Nansanga, cereals, biofuels, livestock and many other crops can be produced.

Based on focus group discussions and researcher's observations, it can be concluded that the establishment of Nansanga has not been successful. Farm development programs have stalled, and the developed infrastructure has collapsed. Demarcated plots of land are not developed by investors, and are overgrown with bushes. The failure of Nansanga is attributed to political meddling in the selection process of the business entity to invest in the core venture (key informant interview, Lusaka). Additionally, interviews with NGOs and GRZ institutions revealed inconsistency in agricultural policy implementation. The farm block program was a 2002 agricultural policy direction of the

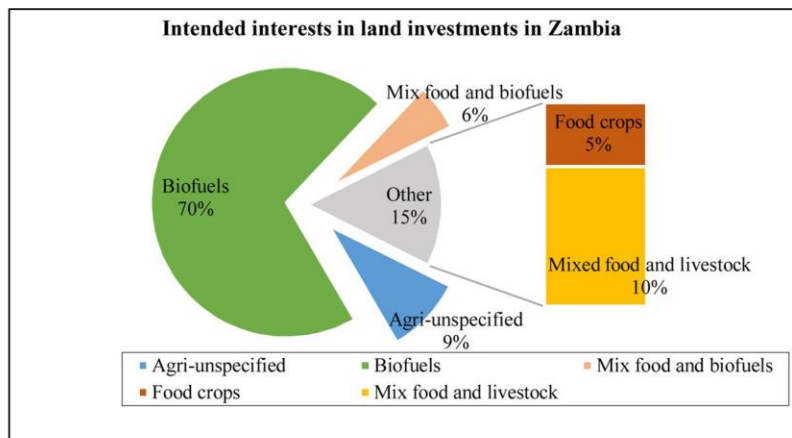


Fig. 2. Investor expressed interests in large scale land investments in Zambia. Source: Author's creation based on Land Matrix Data, accessed June 2018.

Movement for Multiparty Democracy political party, led by the late Patrick Levy Mwanawasa. His successor, Mr. Rupiah Banda under the same party, and the late Mr. Michael Sata and current president Mr. Edgar Lungu of the Patriotic Front political party have not demonstrated the same level of commitment to the agriculture sector as did Mr. Mwanawasa. The other reason attributed to the failure of Nansanga is that land was bought for speculative reasons (interview with an investor, Nansanga).

Like many other failed LSLAs in host countries (Cotula et al., 2014a), the failure of establishing Nansanga has given rise to new socioeconomic dynamics with implications that threaten food security, trigger rural-urban migration and environmental degradation. Mining of manganese also has begun on farm land. Production of tobacco with tobacco leaf companies has increased. This has led to deforestation and labour flight from the production of traditional food crops. Active labour force is moving from traditional villages to Kabundi in the south of Nansanga to work in two open pit manganese mines, or in other commercial farms outside Nansanga as casual workers. Manganese mines have been opened within the farm parcels initially planned for crop production, already a threat to the miombo woodland. In addition, other young people are abandoning agriculture to move to Serenje town and other towns to look for alternative means to survive (focus group discussion, Nansanga), perpetuating rural-urban migration that the farm block program sought to reverse. Land that is part of Nansanga program has title deeds. Focus group discussions revealed that some community members are selling this land that they have been allocated to mine operators to expand the mining activities, confirming what Chimhowu and Woodhouse (2006) have noted that land titling can contribute to landlessness because it can be sold as a coping mechanism in times of distress. In addition, some community members are selling their trees to tobacco growers who need more fuelwood for curing tobacco. Both tobacco growers and non-tobacco growers, and the two mining companies are contributing to carbon emission and deforestation of miombo woodland where Nansanga has been planned. Focus group discussions revealed that socio-economic implications include rural-urban migration, abandonment of production of traditional crops and labour flight in favour of tobacco farming, casual jobs in the mines and commercial farms outside Nansanga.

From the data gathered at community level, such as Nansanga, lessons can be learned to inform and shape national government policies. The Zambian government can respond in different ways: improve investment policy infrastructure that can change EU bloc company operations in the country; and/or factor these lessons to reflect in the country's commitments and obligations to Conventions. In this way, lessons and experiences of LSLAs become part of national circumstances that influence levels of national commitments, and national policies to fulfil those commitments to investing companies, multilateral environmental agreements or development partners.

## 6. Conclusion

This paper has reviewed methodological and epistemological concerns in understanding the evolution of LSLAs in the global south. This paper has presented a conceptual framework that simultaneously accounts for cascading factors and escalating implications of LSLAs. By applying the framework to the Zambian farm block program, we demonstrated how a methodological approach that builds on the proposed framework will help to improve the understanding of LSLAs by linking cascading implications of drivers of LSLAs at different policy levels (from macro, higher global level to micro, lower community level) to escalating effects and implications of LSLAs at different levels (from micro, lower community level to macro, higher global level). The framework is founded on the understanding that at community level every

LSLA is associated with cascading effects of policy drivers at higher levels. Similarly, its implications at community level create escalating implications to higher levels.

In this regard, the framework makes an argument for an approach to studying LSLAs that examines micro level factors without losing sight of the importance of the macro level factors, and vice versa. The framework puts into perspective that immediate impacts of LSLAs happen far away from policy spaces that promote LSLAs. Margulis et al. (2013b) note that between global and local spaces is a continuum of pro and anti-LSLA actors. These actors experience cascading and escalating implications differently depending primarily on their position, from the policy space (cascading implications) and community level where implications of LSLA are immediate (escalating implications). The framework fosters an approach that acknowledges that understanding community level implications of LSLAs can support change in national, regional and global policy spaces, just like these policy spaces can change local level implications. When these factors at different policy and geographic levels are understood together rather than in isolation, an interrelated set of cause-effect relationships can be established that can improve our understanding of LSLAs. This can help improve policy response and the modus operandi of implementing LSLAs to reduce loss of access to land and natural resources for existing (vulnerable) local communities. Policy response can be improved to reduce conflictual livelihood contexts, intracommunity inequality, contested compensation, ecosystem degradation, adverse labour transformation, maladaptive livelihood strategies, food security decline, and erosion of social capital.

Accounting for global to community level factors, and for community to global level effects, the framework calls for methodological approaches that go beyond understanding LSLAs in isolation or the binary geopolitical lens of 'resource poor, financial haves' vs 'resource rich, financial have-nots.' In other words, understanding the global drivers of LSLAs such as biofuels, food security and financial investment is as important as understanding the micro socio-economic, cultural and environmental dynamics in communities where LSLAs actually happen. Ignoring, underrepresenting or misrepresenting the interplay of drivers and effects at different policy and geographic levels undermines the completeness and quality of narratives about LSLAs. That prompts and reinforces what Oya (2013a p511) terms as 'anecdotal or unsystematic evidence' about LSLAs. In addition, it also does not offer evidence to inform and guide policy responses at national, regional or global levels.

Reflecting on the lessons learned, developing a conceptual framework from literature review and a case study has strengthened the socio-political constructivist theory thesis that, first, scientific enquiry is uncertain, indeterminate and has limitations within a real world that is highly complex. Second, knowledge is not produced independently of values, assumptions and framings that are shaped by social interactions and political motivations (Whitfield, 2016). In interviewing communities in Nansanga, we unpacked meanings that communities ascribed to their experience of the farm block. This is important in the quest to improve our understanding and methodologies for researching LSLA deals.

This framework does not pretend to be a panacea for the methodological and epistemological challenges of researching LSLAs. What it most importantly points to is the danger of researching cases of LSLAs in isolation from their drivers/causes and effects/impacts at different policy and geographic levels. In other words, it is good to do a case study, but it is even better when a case study is informed by higher levels of policy and geographic spaces that drive LSLAs but also to which repercussions reach. This improves the quality of evidence and facilitates policy responses that are informed by drivers and effects at different levels. Conceptually and theoretically, research approaches need to account for the multidimensionality of LSLAs.

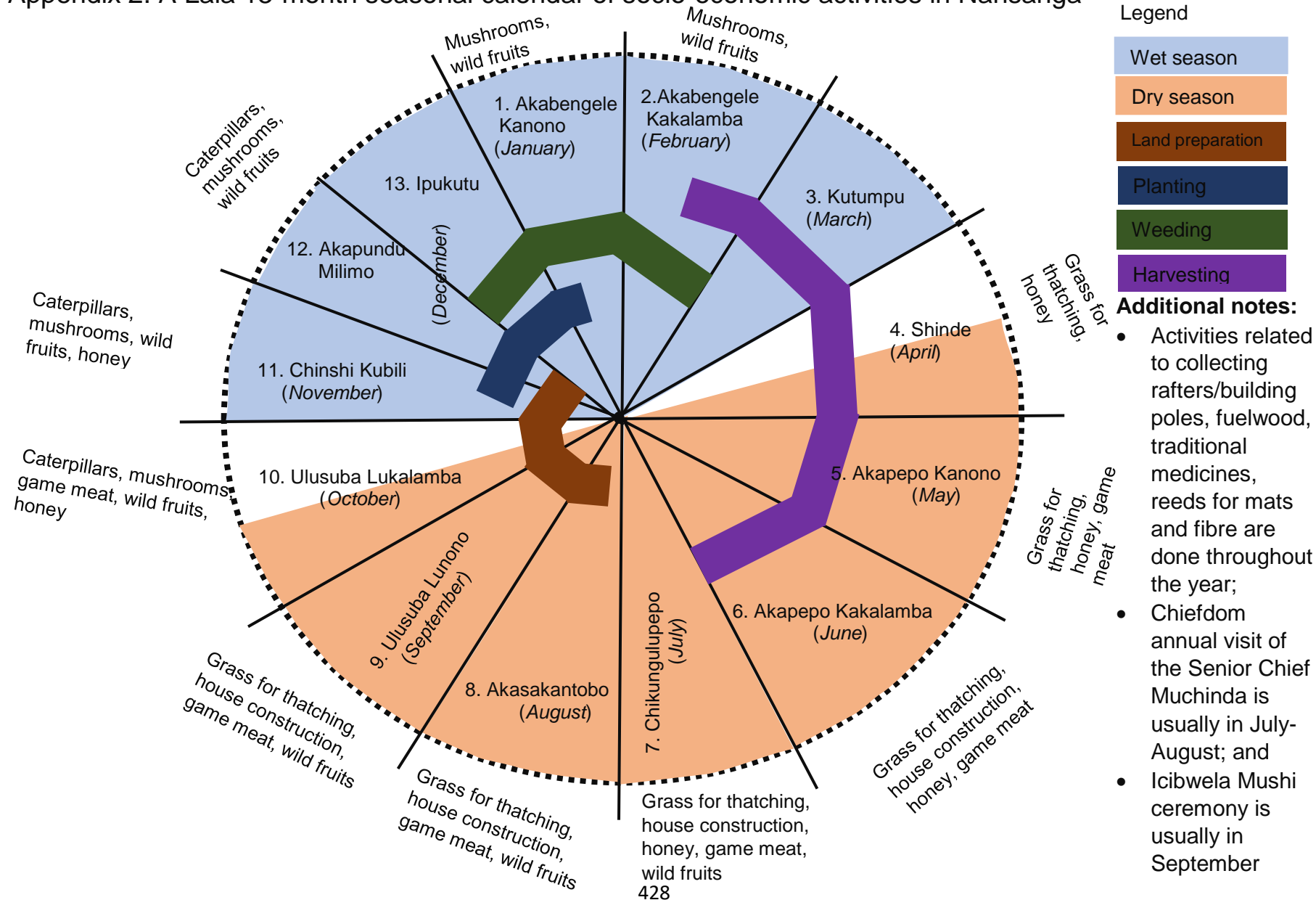
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### Appendix 2: A Lala 13-month seasonal calendar of socio-economic activities in Nansanga



## Appendix 3: Inventoried tree species in Nansanga by community areas

Scientific name	Lala name	# in plots/community area		Total
		Kabundi	Mingomba	
<i>Acacia heteracantha</i>	Akafifi	1	1	2
<i>Acacia polyacantha</i>	Umunga	40	2	42
<i>Acacia polyacanthalunshi</i>	Umungalunshi	1	4	5
<i>Albizia antunesiana</i>	Isase	39	36	75
<i>Amblygonocarpus andongensis</i>	Umunye	107	79	186
<i>Anisophyllea boehmii</i>	Umufungo	85	89	174
<i>Anona senegalensis</i>	Umulolo	1		1
<i>Azanza garckeana</i>	Umukole		16	16
<i>Balanites aegyptiaca</i>	Mubambangoma	5	11	16
<i>Brachystegia allenii</i>	Umutubila	135		135
<i>Brachystegia longifolia</i>	Umusamba	345	265	610
<i>Brachystegia manga</i>	Akasabwa	85	52	137
<i>Brachystegia microphylla</i>	Umukongolo	2	5	7
<i>Brachystegia spiciformis</i>	Kaputu	17	67	84
<i>Bridelia duvigneaudii</i>	Umunwamenda		35	35
<i>Burkea africana</i>	Mukoso	30	33	63
<i>Chrysophyllum magalismontanum</i>	Umuswembya	3	45	48
<i>Coleus esculentus</i>	Mulyakolwe	3		3
<i>Combretum molle</i>	Umulama	11	1	12
<i>Combretum zeyheri</i>	Umufuka	28	5	33
<i>Craterosiphon quarrei</i>	Akafundansofu	1		1
<i>Cussonia arborea</i>	Icitebetebe	5	4	9
<i>Dichrostachys cinera</i>	Akatenge	6	4	10
<i>Diospyros batocana</i>	Umuntukufita	11	1	12
<i>Diospyros mespiliformis</i>	Umucenja	41	8	49
<i>Diplorhynchus condylocarpon</i>	Umwenge	81	68	149
<i>Ekebergia banguelensis</i>	Umubundikwa	5		5
<i>Erythrina abyssinica</i>	Ichisungwa	23	3	26



Scientific name	Lala name	# in plots/community area		Total
		Kabundi	Mingomba	
<i>Erythrophleum africanum</i>	Kabulwebulwe	6	2	8
<i>Fagara chalybea</i>	Pupwechulu	2	1	3
<i>Faurea intermedia</i>	Saninga	7	34	41
<i>Faurea rochetiana</i>	Musokoto	6	9	15
<i>Ficus capensis</i>	umukuyu	11	4	15
<i>Hexalobus monopetalus</i>	Ichikundukundu	5	25	30
<i>Hymenocardia acida</i>	Akapempe		1	1
<i>Isoberlinia angolensis</i>	Umutobo	408	538	946
<i>Julbernardia paniculata</i>	Umutondo	558	895	1453
<i>Lannea discolor</i>	Akabumbu	21	8	29
<i>Lonchocarpus capassa</i>	Ichuya	3	5	8
<i>Maprounea africana</i>	Akafulamume		25	25
<i>Markhamia obtusifolia</i>	Umutendankwale	41		41
<i>Maytenus spp</i>	Mutenda Nkwale	1	3	4
<i>Memecylon flavovirens</i>	Akafishameno	14	12	26
<i>Monetes africanus</i>	Chimpampa	170	153	323
<i>Ochna schweinfurthiana</i>	Ichoni	44	1	45
<i>Ozoroa reticulata</i>	Mabelemabele	3	24	27
<i>Parinari curatellifolia</i>	Umupundu	68	70	138
<i>Peltophorum africanum</i>	Mwikalankanga	3	8	11
<i>Pericopsis angolensis</i>	Umubanga	87	70	157
<i>Phyllocosmus lemaireanus</i>	Umulumbwe	2	54	56
<i>Piliostigma thonningii</i>	umufumbe	6	8	14
<i>Protea angolensis</i>	Umusoso	48	27	75
<i>Pterocarpus angolensis</i>	Umulombe	36	42	78
<i>Schrebera trichoclada</i>	Umupande		7	7
<i>Securidaca longipedunculata</i>	Umupapi	2	7	9
<i>Securinega virosa</i>	Akasansubwanga	3	5	8
<i>Steganotaenia araliacea</i>	Akapolopolo	7		7
<i>Strychnos cocculoides</i>	Akasongole	8	3	11
<i>Strychnos potatorum</i>	Akabangachulu		3	3
<i>Strychnos spinosa</i>	Mukunkampombo	22	38	60
<i>Swaetzia madagascariensis</i>	Indale	49	16	65

Appendices

Scientific name	Lala name	# in plots/community area		Total
		Kabundi	Mingomba	
<i>Syzygium cordatum</i>	Chinsa	6	17	23
<i>Syzygium guineense</i>	Umusafwa	13	71	84
<i>Terminalia mollis</i>	Icibobo	14	11	25
<i>Terminalia sericea</i>	Ulubeba	6	18	24
<i>Terminalia stenostachya</i>	Akalunguti	25	1	26
<i>Uapaca kirkiana</i>	Umusuku	49	93	142
<i>Uapaca kirkianamutawa</i>	umusukumutawa	4	3	7
<i>Uapaca nitida</i>	Umusokolobe	36	43	79
<i>Zanha africana</i>	Chibangalume	2	3	5
	Grand Total	2907	3192	6099

Appendix 4: Soil characteristics in sampled plots by community areas



**ZAMBIA AGRICULTURE RESEARCH INSTITUTE  
SOIL CHEMISTRY LABORATORY  
SOIL ANALYTICAL RESULTS**

**Client Name: Andrew Chilombo**  
**Address: The University of Edinburgh, UK**

**Date: 03/04/2018**  
**No. of samples: 44**

Test Element	Importance of Test Element	Measurements	Grade levels	Comments
Soil pH (CaCl <sub>2</sub> )	The soil's level of acidity, or pH, affects the availability of nutrients to the crop. Most crops have optimum growth and make maximum use of fertilizers and soil amendments between 5.5 and 6.5 and 65 per cent of applied nutrients are available at around this pH range whilst 35 per cent of applied nutrients are available below 5.5. Target pH 5.5-6.5.	>7.5 6.5-7.4 5.5-6.4 <b>4.6-5.4</b> <4.5	Alkaline Neutral Slight acid <b>Medium acid</b> Strongly acid	Most soils are extremely acidic ranging from pH3.4-5.0 ( and need full liming of up to 2000 Kg/ha for heavy soils and 1500Kg/Ha for the lighter soils. Dolomitic lime is recommended to supplement the levels of both Calcium and Magnesium. It is advisable to use liming material with not less than 95% neutralising value.
Phosphorus (P) (ppm)	Phosphorus is important for seed germination and root development. Fields with low phosphorus levels may not have well-developed root systems, leading to heavily-stressed plants.	<10 11-25 20-45 46-65 >65	<b>Very low</b> Low Medium Moderately high Very high	Phosphorous is extremely low bound to affect the establishment of rooting system and subsequent dwarfing of crops. An initial broadcast with TSP at a rate of 100 Kg/ha can help solve the problem. This should be done after liming to avoid any interaction between Calcium in the lime and the Phosphate.
Potassium (K) (ppm)	Potassium is important for fruit longevity and disease resistance. Potassium is important for legumes. When legumes are grown on low-Potassium soils, the bacteria can't fix as much nitrogen for the plant.	<15 15-35 <b>35-105</b> 105-175 >350	Very low Low <b>Medium</b> High	Levels are Medium. Potash will help improve plants resistance to diseases and . Potash equally helps prolong the shelf life of fruits.
Organic carbon (%)	Organic matter is an important soil health indicator as it contributes to the biological, chemical, and physical properties of the soil. Organic matter stores energy and nutrients.	<1.0	Low	Organic matter is very low in your soils. Good management or conservational tillages are best ways of enriching your soils with Organic carbon which act as a store house for most nutrients.

Appendices

**TEXTURE KEY**

S = Sand  
 LS = Loamy Sand  
 SL = Sandy Loam  
 SCL = Sand Clay Loam  
 CL=Clay Loam

**pH- CaCl<sub>2</sub>**

Below 4.0 .....Extremely Acidic  
 4.0 .....Strongly Acidic  
 5.0..... Medium Acid  
 7.0..... Neutral

**Appendix 4.1 Liming rates**

SOIL TYPE	pH Range	Lime Requirement /Ha
ScI/SiCL/SiC/C	3.0-4.5	2000 Kg
LS/SL	3.0-4.5	1500 Kg
ScI/SiCL/SiC/C	4.5-5.0	1500 Kg
LS/SL	4.5-5.0	1000 Kg
ScI/SiCL/SiC/C	5.0-5.4	1000 Kg
LS/SL	5.0-5.4	500 Kg

**Appendix 4.2 Soil characteristics**

Site	Field observations	Plot Age	MScolor	Ccode	Taxonomy	Texture	PH	SOC	P	K	Na
Mingomba_Plot4_C1	Fuelwood, caterpillar, termites, fires	25	Bright brown	Hue 7.5YR 5/8	Acrisols	Loamy sand	3.9	0.59	2	54	12
Mingomba_Plot4_C2	Fuelwood, caterpillar, termites, fires	25	Bright brown	Hue 7.5YR 5/6	Acrisols	Loamy sand	4.6	0.48	4	57	13
Mingomba_Plot4_C3	Fuelwood, caterpillar,	25	Bright brown	Hue 7.5YR 5/6	Acrisols	Loamy Sand	4.4	0.27	6	52	8

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Site	Field observations	Plot Age	MScolor	Ccode	Taxonomy	Texture	PH	SOC	P	K	Na
	termites, fires										
Mingomba_Plot4_C4	Fuelwood, caterpillar, termites, fires	25	Brown	Hue 7.5YR 4/6	Acrisols	Loamy Sand	4.1	0.44	3	48	13
Mingomba_Plot6_C1	fires, grass	5	Dull brown	Hue 7.5YR 5/3	Acrisols	Silt Clay Loam	3.8	0.37	1	103	12
Mingomba_Plot6_C2	fires, grass	5	Dull brown	Hue 7.5YR 6/3	Acrisols	Silt Clay Loam	4.0	0.30	1	156	22
Mingomba_Plot6_C3	fires, grass	5	Bright brown	Hue 7.5YR 5/6	Acrisols	Clay	4.3	0.44	2	116	23
Mingomba_Plot6_C4	fires, grass	5	Reddish brown	Hue 5YR 4/8	Acrisols	Clay	4.7	0.16	1	136	19
Mingomba_Plot13_C1	Caterpillar harvesting, fuelwood, fires, grass	15	Dull brown	Hue 7.5YR 5/4	Acrisols	Loamy Sand	4.4	0.66	1	46	28
Mingomba_Plot13_C2	Caterpillar harvesting, fuelwood, fires, grass	15	Dull brown	Hue 7.5YR 5/4	Acrisols	Sandy Clay Loam	3.9	0.12	1	87	19
Mingomba_Plot13_C3	Caterpillar harvesting, fuelwood, fires, grass	15	Dull brown	Hue 7.5YR 5/4	Acrisols	Loamy Sand	3.9	0.44	1	48	14
Mingomba_p13_C4	Caterpillar harvesting, fuelwood, fires, grass	15	Dull brown	Hue 7.5YR 5/3	Acrisols	Loamy Sand	4.4	0.62	4	65	14
Mingomba_ p 1_C1	Fuelwood, caterpillar, liter, termites, fires	65	Dark red	Hue 10R 3/6	Acrisols	Sandy Clay Loam	4.0	0.94	3	29	9
Mingomba_ p 1_C2	Fuelwood, caterpillar, liter, termites, fires	65	Red	Hue 10R 4/8	Acrisols	Sandy Clay Loam	3.9	0.69	2	20	17
Mingomba_ p 1_C3	Fuelwood, caterpillar, liter, termites, fires	65	Dark red	Hue 10R 3/6	Acrisols	Sandy Clay Loam	4.1	0.44	5	31	9

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Site	Field observations	Plot Age	MScolor	Ccode	Taxonomy	Texture	PH	SOC	P	K	Na
Mingomba_ p 1_C4	Fuelwood, caterpillar, liter, termites, fires	65	Dark red	Hue 7.5R 3/6	Acrisols	Sandy Clay Loam	3.8	0.44	5	27	13
Mingomba_ p 2_C1	Fuelwood, caterpillar, liter, termites, fires	55	Dark red	Hue 10R 3/6	Acrisols	Sandy Clay Loam	3.7	0.41	2	39	15
Mingomba_ p 2_C2	Fuelwood, caterpillar, liter, termites, fires	55	Red	Hue 10R 4/8	Acrisols	Sandy Clay Loam	3.8	0.12	1	22	12
Mingomba_ p 2_C3	Fuelwood, caterpillar, liter, termites, fires	55	Dark red	Hue 7.5R 3/6	Acrisols	Sandy Clay Loam	4.4	0.44	1	78	13
Mingomba_ p 2_C4	Fuelwood, caterpillar, liter, termites, fires	55	Dark red	Hue 10R 3/6	Acrisols	Sandy Clay Loam	3.8	0.59	1	32	14
Kabundi_ p 13_C1	Fuelwood, caterpillar, fires	15	Brown	Hue 7.5YR 4/4	Leptosols	Gravel/SCL	4.5	0.62	1	52	10
Kabundi_ p 13_C2	Fuelwood, caterpillar, fires	15	Brown	Hue 7.5YR 4/4	Ferrosols	Sity Clay	4.3	0.66	1	61	15
Kabundi_ p 13_C3	Fuelwood, caterpillar, fires	15	Brown	Hue 7.5YR 4/3	Ferrosols	Sity Clay	4.0	0.51	2	40	17
Kabundi_ p 13_C4	Fuelwood, caterpillar, fires	15	Brown	Hue 7.5YR 4/3	Ferrosols	Sity Clay	4.8	0.51	1	35	19
Kabundi_ p 28_C1	Fuelwood, caterpillar, termites, fires	25	Dark reddish brown	Hue 5YR 3/6	Ferrosols	Silty Clay Loam	3.9	0.55	1	23	11
Kabundi_ p28_C2	Fuelwood, caterpillar, termites, fires	25	Reddish brown	Hue 5YR 4/6	Ferrosols	Sity Clay	3.8	0.37	2	83	29
Kabundi_ p 28_C3	Fuelwood, caterpillar, termites, fires	25	Reddish brown	Hue 5YR 4/6	Ferrosols	Sity Clay	3.9	0.34	2	90	21
Kabundi_ p 28_C4	Fuelwood, caterpillar, termites, fires	25	Reddish brown	Hue 5YR 4/6	Ferrosols	Sity Clay	3.7	0.37	1	73	25
Kabundi_ p 30_C1	Fuelwood, caterpillar, liter, termites, fires	55	Brown	Hue 7.5YR 4/4	Acrisols	Silty Clay Loam	4.2	0.80	<1	91	21

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Site	Field observations	Plot Age	MScolor	Ccode	Taxonomy	Texture	PH	SOC	P	K	Na
Kabundi_ p 30_C2	Fuelwood, caterpillar, liter, termites, fires	55	Brown	Hue 7.5YR 4/3	Acrisols	Silty Clay Loam	4.4	0.51	<1	67	16
Kabundi_ p 30_C3	Fuelwood, caterpillar, liter, termites, fires	55	Brown	Hue 7.5YR 4/4	Acrisols	Silty Clay Loam	4.2	0.76	<1	53	16
Kabundi_ p 30_C4	Fuelwood, caterpillar, liter, termites, fires	55	Dark brown	Hue 7.5YR 3/4	Acrisols	Silty Clay Loam	5.0	1.44	<1	47	18
Kabundi_ p 38_C1	fires, grass	5	Dark reddish brown	Hue 2.5YR 3/6	Acrisols	Silty Clay Loam	4.4	0.51	4	73	15
Kabundi_ p 38_C2	fires, grass	5	Dark reddish brown	Hue 2.5YR 3/6	Acrisols	Silty Clay Loam	3.8	0.44	3	82	22
Kabundi_ p 38_C3	fires, grass	5	Dark reddish brown	Hue 2.5YR 3/6	Acrisols	Silty Clay Loam	3.7	0.44	3	62	11
Kabundi_ p 38_C4	fires, grass	5	Dark reddish brown	Hue 2.5YR 3/6	Acrisols	Silty Clay Loam	3.7	0.30	<1	47	11
Kabundi_ p 2_C1	Fuelwood, caterpillar, liter, termites, fires	65	Brownish black	Hue 5YR 3/1	Acrisols	Loamy Sand	3.7	0.76	1	14	11
Kabundi_ p 2_C2	Fuelwood, caterpillar, liter, termites, fires	65	Dark reddish brown	Hue 5YR 3/3	Acrisols	Sandy Clay Loam	3.4	0.44	1	22	14
Kabundi_ p 2_C3	Fuelwood, caterpillar, liter, termites, fires	65	Dark brown	Hue 7.5YR 3/4	Acrisols	Sity Clay	3.4	0.91	1	19	16
Kabundi_ p 2_C4	Fuelwood, caterpillar, liter, termites, fires	65	Dark brown	Hue 7.5YR 3/3	Acrisols	Sandy Clay Loam	3.7	0.37	2	47	18
Kabundi_ p 2_C1	Fuelwood, caterpillar, liter, termites, fires	55	Brown	Hue 7.5YR 4/4	Acrisols	Sandy Clay Loam	4.4	1.01	4	26	6
Kabundi_ p 2_C2	Fuelwood, caterpillar, liter,	55	Brownish black	Hue 7.5YR 3/2	Acrisols	Sandy Clay Loam	4.4	1.86	4	30	14

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Site	Field observations	Plot Age	MColor	Ccode	Taxonomy	Texture	PH	SOC	P	K	Na
	termites, fires										
Kabundi_ p 2_C3	Fuelwood, caterpillar, liter, termites, fires	55	Dark reddish brown	Hue 5YR 3/6	Acrisols	Silty Clay	4.8	0.80	2	35	10
Kabundi_p2_C4	Fuelwood, caterpillar, liter, termites, fires	55	Dark reddish brown	Hue 5YR 3/2	Acrisols	Silty Clay	4.6	0.91	3	18	12



## Appendix 5: Guiding interview questions

### Appendix 5.1 Key Informant Interviews guiding questions

No.	Section	Questions
1	General information on agricultural investments in Zambia and Nansanga farm block	<p>How would you characterise Zambia as a target of agricultural investments?</p> <p>Where are the most investments coming from - (domestic/ foreign; public/private)? What are the reasons?</p> <p>When did the interest in agricultural land in Zambia heighten? What could explain this?</p> <p>Does the government encourage investors to come to Zambia? If yes, how has been the response been? What lessons have been learned about investment promotions?</p> <p>How did the farm block program start?</p> <p>Why did the government choose to establish Nansanga farm block in Senior Chief Muchinda's chiefdom?</p> <p>How was the process that led to the establishment of the farm block in Senior Chief Muchinda's chiefdom?</p> <p>How did the government choose who to invest in Nansanga farm block?</p>
2	Context conditions: land, farmers, legal framework	<p>What policy frameworks in Zambia are applicable to land deals? Do these policy frameworks deal with environmental or social/labour standards, and investor-local community relations in case of displacement? What about rules regarding compensations</p> <p>Are there any Zambian laws that govern foreign investments particularly investments in land? If so, which ones?</p> <p>How did the Lands Act 1995 change the agricultural landscape by foreigners?</p> <p>Have there been disputes about land reforms in the last decade? What were the main conflicting parties/positions? What are the constitutional provisions for land registration in Zambia?</p> <p>How are customary and traditional land rights respected, and have there been any conflicts between these rights of local people and investors' rights? How are customary laws recognized in the constitution?</p> <p>How is land obtained in Zambia? Is it easy to obtain land? Who can sell land? How do you get a land title or a lease? How secure is land tenure? What is your opinion on the security of land tenure in Zambia?</p> <p>Is there a lot of idle arable land in Zambia? How would you characterise idle land in Zambia?</p> <p>What type of land is targeted by investors (state land or customary land)? How big is the percentage of land acquired by foreign and domestic investors? Do you have information on land prices and</p>

No.	Section	Questions
		<p>land price changes in the last decade?</p> <p>What is the potential of the agriculture sector in Zambia's national economy?</p> <p>Which crops are mainly grown (by investors/ by smallholders)? Are these generally for food or biomass/biofuel, feedstock?</p> <p>What are the biggest problems of farmers in Zambia (e.g. lack of land, lack of water, poor market access, no fertilizer, improved seeds)? How can these problems be addressed?</p> <p>Are you aware of land disputes between investors and the local population? If yes, which measurements are undertaken to solve these conflict? Who is acting? Who is arbitrating? What is the government's role? How are they resolved?</p> <p>Do you know of cases of corruption in land deals? Where are these more common (state land vs customary land)? Why?</p>
3	Negotiation phase	<p>What steps are followed by investors to acquire land on state land and customary land? How did that happen to establish Nansanga farm block?</p> <p>Who was involved and their role in the negotiation process during land acquisition to establish Nansanga farm block? (for example, investors, government officials, traditional authorities, civil society, researchers, and community members)?</p> <p>How was land sold to would be investors in Nansanga? Where were applicants from who wanted land in Nansanga? What were the selection criteria? What were the conditions? How were the community members in Nansanga informed about the farm block program? What were their reactions?</p> <p>How was the farm block program funded? Does Zambia have any bilateral agreements with any foreign governments to facilitate land based investments in the country?</p> <p>Does the government give any incentives to investors, such as reduced taxes, infrastructure? Does land acquisition include rights to access and use rights of surface and ground water?</p> <p>Do contracts involve any obligations on the investor's side, such as compensatory payments, infrastructure/social investment, and environmental/social impact assessments?</p> <p>Do investors <i>actually</i> comply with environmental obligations such as carrying out SIA/EMP/EIA? If yes, who initiates and monitors? What do you think of the level of compliance to environmental standards?</p> <p>Does the government try to monitor or enforce provisions of the contract? How do you perceive corruption in conjunction with land deals and investments?</p> <p>Who do investors pay (government, former owner, chief)? How do they pay – monthly, annually, for how long (annual ground rent, royalties)? Before development begins, do investors usually hold an official land title?</p> <p>From the way agricultural investments are done, particularly the Nansanga farm block, what do you think are the positive or negative impacts to the national economy and to the Lala people in the</p>

No.	Section	Questions
		chiefdom of Senior Chief Muchinda?

## Appendix 5.2 Focus group discussion guiding questions

No.	Question	Probe Question	Topic of interest
1.	What were you doing before the Nansanga farm block program began?	<ul style="list-style-type: none"> <li>• Where you living here before?</li> <li>• What did you do for living? / Did you do farming?</li> <li>• Did you own land? (Do you still own land?)</li> <li>• Did anything change?</li> </ul>	General situation before the Nansanga farm block program began and now – perceived changes in their access to resources
2.	How did you first learn about the Nansanga farm block program?	<p>Who informed you about the Nansanga farm block program?</p> <ul style="list-style-type: none"> <li>• Do you know any of the investors personally?</li> <li>• What did you think about the Nansanga farm block program in the first place?</li> <li>• What were you told about the Nansanga farm block program? Are there any differences between what you were told and what is happening? If so, what kind of differences?</li> <li>• What do you think of people who have bought farm here in Nansanga? How do they interact with you?</li> </ul>	Involvement of population in the negotiation process; Information of the local population; Sense of community members' anomie
3.	What were the immediate impacts of the Nansanga farm block program?	<p>Did you or anyone you know lose land?</p> <ul style="list-style-type: none"> <li>• What kind of land did they lose (farm land, grazing land, 'idle land')?</li> <li>• What did these people do? • Were you/they compensated?</li> <li>• What do you think of the compensations received?</li> </ul>	Displacements and Compensations
4.	What are the main things that you associate with the establishment of Nansanga farm block in this community?	<ul style="list-style-type: none"> <li>• What positive and negative lived experiences have made following the establishment of Nansanga farm block in your community?</li> </ul>	Ideas about lived positive and negative impacts, community members' overall perception of Nansanga farm block in limbo of development.

### Appendix 5.3 Focus group discussion perception of impacts of Nansanga farm block

<b>Investment Influence on the community</b>							
	Ordinal scale	Not applicable (0)	Bad/failed program (1)	No difference (2)	Good (3)	Very good (4)	Highly successful (5)
<b>General Quality of Life</b>							
	Family Income						
	Agricultural Output						
	Health						
	Employment Situation						
<b>Access to Resources</b>							
	Agricultural Land						
	Water (for agric. Use)						
	Markets						
	Transport						
	Food/ Prices of food						
	Seeds/ Fertilizer						
<b>Knowledge/ Technology</b>							
	Agricultural Techniques (e.g. irrigation)						
	Use of Technology (e.g. machinery)						
	Schooling						
<b>Risks</b>							
	Conflicts over land						
	Threats of displacement						
	Displacements						

## Appendix 5.4 Tobacco production guiding questions

No.	Question	Probe question	Topics of interest
1.	When did you start producing tobacco?	What were you growing before? Why did you start growing tobacco? How do you grow your tobacco – where do you get your inputs, where do you sell it?	The extent to which the implementation status and model of Nansanga farm block has influenced the production of tobacco in the area
2.	On whose land do you grow tobacco?	Does your land have title deeds? Are you renting the land for tobacco production?	To understand if tobacco production is related to land tenurial regimes, and the factors related to land renting just for the production of tobacco
3.	Where do you get fuelwood for curing tobacco?	Do you buy fuelwood from your neighbours? Do you have enough fuelwood every season that you have to grow and cure tobacco? How much fuelwood do you use per year?	To understand localised deforestation attributed to tobacco production, and how constraining fuelwood availability is on the future of tobacco production in Nansanga
4.	How much do you grow per growing season, on average?	How much land is under tobacco production compared to other crops? Do you use any oxen, hired labour or simply family labour to produce tobacco? How much on average does it cost to produce tobacco on 0.25 ha in Nansanga? How much do you get as your own money after taking away all the costs? How do you compare tobacco production to maize?	To understand the socio-economic push factors for tobacco production in Nansanga, and competing needs between tobacco and other crops particularly maize (which is for both home consumption and sale if there is any surplus).
5.	What challenges do you face as tobacco growers?	Are there any extension services? How are they organised? Do you see the number of tobacco growers growing? What dangers do you see as the number of tobacco growers increases? Under what conditions can you stop tobacco production?	To understand the future of tobacco production, and if it can be associated with the implementation status of Nansanga farm block.

## Appendix 5.5 Household surveys

### 1. Location details

Code	Village name	Village GPS coordinates		Household GPS coordinates	Date	Start time	End time

### 2. Household demographics

Code	Household member age distribution		Gender	Education level	Main occupation	Place of Birth	Time Residence	Marital status	Involved in interview?
	0-12	0	0	0		0	0	0	0
	13-19	0	0	0		0	0	0	0
	20-35	0	0	0		0	0	0	0
	36-65	0	0	0		0	0	0	0
	>65	0	0	0		0	0	0	0

Average landholding size									
Code	Land use	Land size	Tenure characteristics	Land acquisition	Land tenure	Technology adoption			Involved in interview?
	0	0	0	0	0	0			0
	0	0	0	0	0	0			0
	0	0	0	0	0	0			0
	0	0	0	0	0	0			0

Types of crops									
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Appendices

	Crops	Yields/0.25 ha (kg)	Inputs	Improved/non-improved	Source	Use
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	
	0	0	0	0	0	

**Socio-economic activities in a calendar year**

Months	Activities 1	Activities 2	Activity 3	Activity 4	Activity 5	Gender	Seasonality of activity	Use	
								Direct consumption	Income generation
January	0	0	0	0	0	0	0	0	
February	0	0	0	0	0	0	0	0	
March	0	0	0	0	0	0	0	0	
April	0	0	0	0	0	0	0	0	
May	0	0	0	0	0	0	0	0	
June	0	0	0	0	0	0	0	0	
July	0	0	0	0	0	0	0	0	
August	0	0	0	0	0	0	0	0	
September	0	0	0	0	0	0	0	0	
October	0	0	0	0	0	0	0	0	
November	0	0	0	0	0	0	0	0	
December	0	0	0	0	0	0	0	0	

<b>Asset portfolio</b>														
Associations	Facilities and services	Distance (km)	Change	Time (hours)	Credit facilities	Change	Livestock production	Change	Grazing grounds	Change	Household farm assets	Change	Household non-farm assets	Change
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Business and employment opportunities</b>														
Business opportunities	Change			Employment opportunities	Change	Other income sources	Change	Agricultural Extension services			Change			
0	0			0	0	0	0	0			0			
	0			0	0	0	0	0			0			
0	0			0	0	0	0	0			0			
0	0			0	0	0	0	0			0			