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# **Livelihoods and coping strategies of local communities on previous customary land in limbo of commercial agricultural development: Lessons from the farm block program in Zambia**

**Andrew Chilombo & Dan van der Horst**

## **Abstract**

The surge in large-scale land acquisitions (LSLAs) has captured the attention of activists, development practitioners, policy makers and academics. Supported for food security, biofuels, financial investments, eco-tourism etc., opponents of LSLAs raise concerns regarding the fate of local communities suffering from (potential) land dispossession and involuntary displacements, environmental degradation, diminished local food security and sovereignty and casualisation of farm workers. Scholarly efforts to understand socio-economic and environmental impacts of LSLAs grapple with: i) methodological challenges related to lack of (reliable) baseline data; and ii) implementation of LSLA deals - LSLAs can be complex operations; cancelled or abandoned, and reshaped by diverse biophysical, socio-cultural and political landscapes in which they unfold. Few attempts have been made to understand how local communities cope with *failed* LSLA deals. Addressing this gap, this paper uses participatory rural appraisal methods to examine coping strategies of local communities in Nansanga farm block, a government of Zambia-led LSLA program. Overall, our fieldwork shows Nansanga is a deal in *limbo of development*: state-funded infrastructure has crumbled, and many private investors have not developed the land they bought. Instead, mining and tobacco companies have emerged as important economic players, filling the development vacuum created by the government's absence in Nansanga. As immigration for casual mining jobs increases, there is land dispossession in some places, and curtailed access to dambos that used to be communal under customary land tenure. Our findings question the possibility of LSLA deals to contribute to wealth creation for local people. Our findings suggest pre-existing socio-economic status and household labour are key to understanding coping strategies of local people in Nansanga. High wealth households are more likely to take advantage of emerging opportunities from (*failed*) LSLA deals than low wealth households. Finally, LSLA deals transform resource use and therefore livelihoods - reinforcing pre-existing socio-economic community conditions.

## 1. Introduction

National governments in the global south and investors have supported large scale land acquisitions (LSLAs) for poverty alleviation, food security, rural development, employment-creation and energy security (see German et al., 2011; Schoneveld, 2011; Abbink, 2011; Deininger and Byerlee, 2012; Robertson and Pinstrip-Andersen, 2010; Rulli and D’Odorico, 2014; African Union et al., 2014). However, LSLAs have also been 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 and 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 and political contexts at different spatial but also jurisdictional scales (Oberlack et al., 2016). Additionally, 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 *fail* in that they are sometimes cancelled, abandoned, scaled down and their investment models transformed (Schoneveld, 2017; Locher and Sulle, 2014). 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). Understanding such LSLAs deals is methodologically challenging. The methodological challenges are accentuated by lack of (pre-project) baseline information and the fact that most LSLA deals happen in ‘black boxes’ (Nolte, 2014). One important question is: what community coping strategies emerge, and how can we assess them when LSLA deals without (reliable) baseline data *fail*?

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 might in part be due to the afore-mentioned methodological challenges, i.e. the absence of (reliable) baseline data and the discrepancies between the planned LSLA deal and what actually happens on the ground. In a special issue of the Journal of Peasant Studies, Scoones et al. (2013) argue in favour of more grounded and transparent methods to understand the consequences of land investments.

In this paper, we aim to answer the question, ‘what community coping strategies emerge and how can we assess them when LSLA deals ‘fail’ without (reliable) baseline

data?’ In contribution to more grounded and transparent methods to understand the consequences of land investments, we look at Nansanga farm block (Nansanga hereafter), a government of Zambia-led project that has stalled in its development (details in section 3.1).

At the time of this research, we did not come across the socio-economic and environmental baseline data to enable an impact assessment or any longitudinal study of the LSLA deal. Also, an impact assessment or longitudinal study would be more useful for a development project that is advanced in implementation (which Nansanga is not). In assessing the coping strategies, this paper contributes to highlighting the asset portfolios of local communities, casting doubt on LSLAs as development schemes when their primary focus is not on socio-economic and environmental (SEE) benefits of local communities. Therefore, at the core of this paper is a contribution to assessing coping strategies of ‘failed’ LSLA deals. By coping strategies, we mean activities that households undertake to achieve livelihood objectives in response to the SEE context of a ‘failed’ LSLA deal. We used participatory rural appraisal methods in the absence of status quo ante data, which would have enabled a more econometric approach. The use of participatory approaches enabled a qualitative exploration and analysis of stereotypical narratives regarding processes, relations and structures (Oya, 2004) of coping strategies of communities to land deals as these actually unfolded.

Conceptually, our approach is embedded in the sustainable livelihood framework. This is because coping strategies are intertwined with livelihood activities that are linked to the exploitation of land-based resources (including specifically forest resources) in rural communities (Kamanga et al., 2009). According to Scoones (1998), 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.

This paper is structured as follows: We present the materials and methods in section 2. We include a brief review of participatory rural methods. The review rationalises our choice of these methods to qualitatively assess coping strategies of community members to an LSLA deal in *limbo of development* (section 3.1). We then present results in section 3. We discuss the findings in section 4, and conclude in section 5.

## **2. Materials and methods**

### **2.1 Study area**

Fieldwork was carried out in Nansanga farm block established on 155 000 ha of previously held customary land belonging to the Lala people. Two community areas, Mingomba and Kabundi, in the north and south of Nansanga, respectively were selected for the study based on state-funded infrastructure development and population concentration. The areas are under the direct traditional leadership of *Sulutanis* as senior chief advisors. Each community area is subdivided in villages under the direct leadership of *Chilolos*, as village heads who represent the senior chief at village level, but report directly to *Sulutanis*. Based on village registers that are kept by *Sulutanis*, Mingomba has a population of ~650 households/~3 900 people, and Kabundi ~465 households/~2 790 people. Sedentary peasant farming on average of < 2.3 - 5.4 ha (maize, sorghum, millet, beans, cassava and groundnuts – **Table 2**) is the main socio-economic activity in Nansanga. Mushrooms, caterpillars, wild

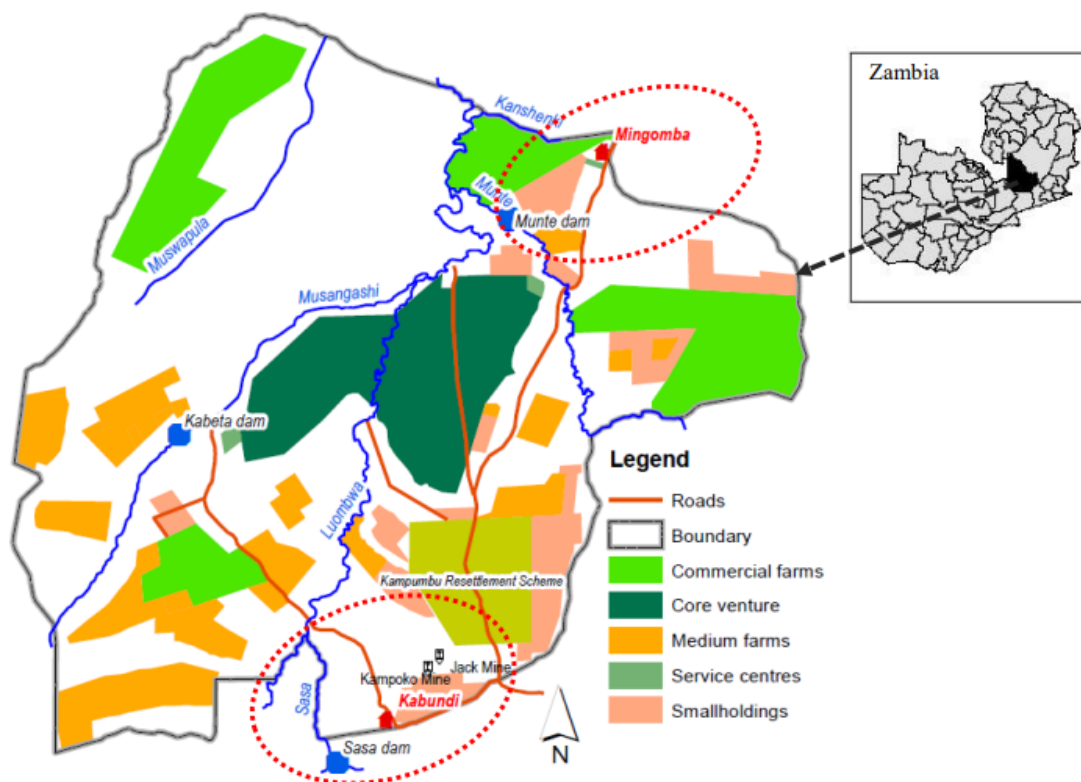
fruits and honey are important forest-based resources in the farm block. Community members rear goats, pigs, chickens and ducks woodlands crops (Chilombo, 2019). **Map 1** shows the two community areas, and their key characteristics are summarised in **Table 1** below.

**Table 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: First author's compilation from fieldwork (December 2017).

Customary land has legally been converted to leasehold. Following the conversion, other economic activities (which did not feature in the original farm block plans) have emerged, notably tobacco contract farming and manganese open pit mining. There are planned and spontaneous relocation of people, land dispossession in some places and insecure future access to dambos (wet areas for grazing, fishing and vegetable gardening) that used to be communal land. Communal land is reserved by the senior chief for all community members. Therefore, dambo areas are not given to individuals in Nansanga. *Chilolos* and *Sulutanis* ensure free access and use of community members to dambos, including their management. For example, dambos are burned only with permission from traditional authorities.



**Map 1** Nansanga farm block showing Mingomba (north) and Kabundi community areas (south).

Source: First author's creation based on field data (2018), GRZ (2005) and data from <http://www.diva-gis.org/gdata> (accessed February 10, 2020)

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 their livelihoods. They mainly cultivate maize, sorghum, beans, cassava and groundnuts. Their socio-economic wellbeing is therefore, tied to land and forests (see Chilombo, 2021). They also rear village chickens, ducks, goats and pigs. An understanding of the socio-economic and cultural dynamics was possible through a participatory engagement with community members as we briefly review in section 2.2.

## **2.2 Participatory rural methods for co-production of knowledge**

This section briefly reviews participatory rural methods to clarify and rationalise our choice of them to understand the socio-economic and environmental (SEE) impacts of Nansanga farm block (Nansanga henceforth).

Participatory rural appraisal (PRA) methods are a convergence of research programs commonly used in participatory action research, agroecosystem analysis, applied anthropology, and farming systems (Campbell, 2001). They represent a set of approaches 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 and 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 p.1253).’ PRA approaches allow community members to represent and analyse information about their livelihoods or other issues, and make their own plans (Chandra, 2010). This enables researchers and development practitioners to learn by building on indigenous knowledge (Martin and Sherington, 1997) and lived experiences of people.

PRA methods are important when there is little prior knowledge about a phenomenon under study, and the phenomenon does not belong to the past (Campbell, 2001). Three considerations rationalised our choice of PRA methods for this study: first, beyond the political and media rhetoric, very little is known about the nature and severity of SEE impacts on rural communities and how communities cope with SEE impacts. Second, the research was carried out in an area where an LSLA deal has happened, thereby directly engaging the same community members who have been impacted by the deal. In this way, those involved in the LSLA were part of the knowledge-building process (Scoones et al., 2013) to understand the SEE impacts in Nansanga. Third, at the time of this research, we did not come across the baseline data to enable a longitudinal study to assess the SEE impacts in the area. PRA methods enabled the involvement of community members as *co-producers* of knowledge about the SEE impacts. It gave community members the opportunity to reflect on their own experience and draw meanings from the Nansanga LSLA deal to enhance the understanding of the SEE impacts on their socio-ecological system.

The involvement of community members as *co-producers* of knowledge using PRA enabled the unpacking of meanings, development of explanations or generation of ideas (Ritchie and Lewis, 2014 p82) about the coping strategies to SEE impacts of Nansanga. In qualitative research, samples sizes are usually below 50 (Ritchie and Lewis, 2014) because the focus is on data richness rather than statistical generalisations (Higginbottom, 2004). Thus, qualitative research trades-off breadth for depth (Murphy et al., 1998). Data richness is verifiable through data saturation for purposive sampling or theory saturation when building theory in grounded theory (Marshall, 1996; Yin, 2003). Building on section 2.2 in which we have briefly reviewed PRA methods, we present the specific methods in section 2.3

### **2.3 Methods**

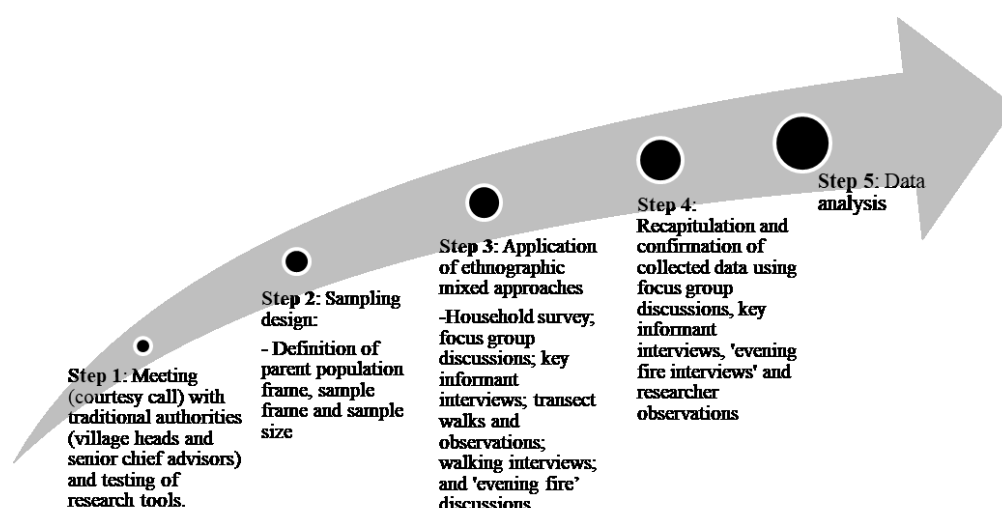
In section 2.3 we present our methodological approach for data collection to understand community coping strategies to Nansanga. First, we graphically present the steps we undertook before highlighting the PRA methods. We then present our approach to wealth ranking. To understand the coping strategies of community members, the study focused on the micro-level processes at the community level. Methodologically, a comparison with communities not covered by the LSLA scheme, and or those in other farm development areas in Zambia could have been done. However, this is scope for another study. For this study, we only focused on Nansanga due to financial and time constraints to carry out a detailed assessment of coping strategies in different places. Additionally, the approach was qualitative to learn about the coping strategies as *lived experiences of local communities* in Nansanga. A quantitative approach without solid quantitative data before and after establishing the farm Nansanga could not be used.

Drawing on qualitative research methods that demonstrate a systematic and reflective process for development of knowledge that can be contested and shared, and transferable beyond the study setting (Malterud, 2001), we proceeded through the following steps (Fig. 1):

- Step 1: Traditionally, we needed to meet the traditional authorities before doing any research or interacting with their subjects in Nansanga to explain to them what the research was about. With their support, we were able to conduct fieldwork in their area;
- Step 2: With information (village registers) from traditional authorities, we confirmed our sampling design. The sample size was not however, pre-determined, consistent with standard qualitative research practices – it was determined at data saturation point (Marshall, 1996). With support from traditional authorities, we identified research participants based on demographic distribution, socio-economic status of households, and geographical location within the farm block, family unit composition /marital status, livelihood activities, gender and age. To combine these sampling criteria, we used a mixed approach of convenience and purposive sampling techniques;
- Step 3: This step involved the administration of research tools based on convenience and purposive sampling techniques to collect data on the development of Nansanga and related community-level SEE changes, community forest resources, coping strategies and wealth ranking;
- Step 4: This step served to confirm with research participants the validity of the data we had collected in Nansanga; and
- Step 5: Satisfied with data confirmation in step 4, this final step was for analysis – making sense of the data that we had collected, and it happened outside Nansanga. We recorded interviews and took additional notes. We transcribed the interviews. For data analysis, content analysis and coding of emerging themes was done in Nvivo Pro 11 software - to systematically analyse both the manifest and latent contents of information and communication (Kassarjian, 1977) during data collection. As an observational research method (Kolbe and Burnett, 1991), we used content analysis 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 Nansanga.



Graphically, these steps are presented in **Fig. 1** below.



**Fig. 1** Steps taken during data collection in Nansanga

The study used PRA methods: focus group discussions (FGDs) (13 in each community area) to understand community-level SEE changes, forest resources and criteria for wealth ranking; key informant interviews (20 in Kabundi, 21 in Mingomba, and 18 outside the farm block) to learn about the establishment of Nansanga, government farm block policy, tobacco production and mining, and SEE changes; participatory resource mapping and transect walks to learn about forest resources, infrastructure in Nansanga and SEE changes; and household interviews for household wealth ranking (n = 50 households, i.e 25 in each community area). The number of FGDs, key informant interviews and households was guided by data saturation, that is, a stage in the research process where there are no more new categories, themes or explanations emerging from the data being collected (Marshall, 1996). The lead author of this paper conducted the interviews in Bemba, the local language. The data was collected in three phases: September 2016 – January 2017; October 2017– January 2018; and March 2018 – June 2018.

With the support of the *Sulutanis* and *Chilolos*, households were selected using a mix of purposive sampling and convenience sampling techniques. Purposive sampling technique involves the deliberate choice of an informant based on the knowledge that they possess relevant to the topic under study – ‘effective when one needs to study a certain cultural domain with knowledgeable experts within (Tongco, 2007 p147).’ Convenience sampling involves the collection of information from participants that can easily be reached by the researcher (Palinkas et al., 2015), and has the advantage of being more pragmatic and least costly in terms of time, money and effort (Marshall, 1996).

Related to the coping strategies, the selection criteria were: demographic distribution; wealth ranking; household location within the farm block; family unit composition; marital status; gender and age. These criteria ensured an inclusion of relevant households and community members that offered the best possible opportunity for *knowledge co-production* and learning about the household asset portfolios, SEE impacts and coping strategies. The selected households and community members held characteristics expected or known to have

relevance to the phenomenon under study (Ritchie and Lewis, 2014) – coping strategies that we sought to understand.

The households were classified into three wealth classes, based on village registers and the knowledge of *Sulutani*s and *Chilolo*s of the sampled households. The first stage was that the *Chilolo* and *Sulutani* used the village registers to tick off households based on the sampling criteria in section 2.3 step 2. 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, 1994). The ‘selection committee’ was requested to discuss and together decided which household fell under which wealth class, thereby addressing poverty bias in wealth ranking. Based on this classification, the third stage involved the administration of household surveys to sampled households to determine the asset portfolios and their coping strategies. By way of data triangulation, the fourth stage involved a discussion with the wider community during FGDs to identify attributes or resource endowments that distinguished and characterised wealth classes.

As in Oya (2004) the categorisation of households into three wealth classes accounted for 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*, couples in sampled households were interviewed together, except in the case of single head households. We ensured that women were also among research participants in acknowledgement of the different forms that SEE impacts take across different socioeconomic landscapes, with particular class, gender, ethnic, livelihood and environmental consequences (Borras *et al.*, 2010). 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 more detailed understanding of the Nansanga socio-cultural fabric, including information about the socio-cultural ‘secrets’ of life in communities, such as witchcraft and traditional medicines for non-publicly discussed ailments.

The respondents have been anonymised, and are only referred to using method, interview number and when the interview was done. For example, K-FGD #4 March 2018 refers to a FGD number 4 in Kabundi area in March 2018. M refers to Mingomba area; Mg-KII refers to key informant mining company foreman; K/M-II refers to key informant in Kabundi/Mingomba; and G-KII refers to government worker key informant interview in Lusaka, the capital city. Having detailed the methods used to gather data to understand the community coping strategies to an LSLA deal in *limbo of development*, we present results in the next section.

### 3. Results

This section presents results from the field. We begin by presenting the state of development of Nansanga in section 3.1. In section 3.2, we present livelihood strategies with sub-sections dedicated to the community-level changes, wealth ranking, coping strategies and community forest resources that include caterpillars and mushrooms. Until recently following the farm block, the chiefdom Muchinda is largely a cashless economy. Therefore, efforts to understand coping strategies in Nansanga would be incomplete without understanding forest resources and their preponderance in community livelihoods.

#### *3.1 Nansanga farm block in 'limbo of development'*

By a parliamentary decree in 2002, the government of Zambia (GRZ) embarked on LSLA programs on customary land for commercial agriculture for food security, reducing rural-urban migration and general rural development (GRZ, 2005). The government's plan was to convert 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).

GRZ recognized that poor infrastructure limited private agricultural investments in rural areas. 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. Nansanga, prioritized among the nine farm blocks that were planned across Zambia, 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 government planned to invest ~\$11.41 million, though only 17% of that amount was actually invested between 2002 and 2006 (GRZ, 2006) to develop roads, dams, bridges, irrigation canals, and to electrify Nansanga. GRZ-funded infrastructure, that is, trunk roads, three dams and one irrigation canal and Munte and Luombwa bridges in Mingomba and Kabundi areas, respectively were completed in 2009/2010. By 2012 Nansanga was parcelled into four types of farms (core venture, commercial farms, medium size farms and smallholder – **Map 1**), and title deeds were processed and given to investors who had bought farmland in the farm block by 2012.

During the fieldwork period (2016 – 2018), developed infrastructure had collapsed, including Munte dam (6 000 000m<sup>3</sup> capacity), Sasa dam (10 000 000m<sup>3</sup> capacity) and the 5km irrigation canal. During the same time, no health facility or school had been completed, and electricity had not been pulled into Nansanga – though the land had been cleared and electric poles had been erected (Fig. 2). Demarcated parcels of land, including roads leading to the parcels have become overgrown with bushes because private sector investment in Nansanga has lagged. Additionally, there was no policy clarity on further development of the farm block (KII #1, Serenje, October 2016). It was further reported ‘the government cannot financially sustain itself courting investors with infrastructure development in farm blocks (Qg-KII #1, Lusaka, April, 2018).’ In Kabundi area, two open pit manganese mines, Kampoko and Jack are operational. GRZ, through the ministry of mining, issued prospecting and mining licenses for manganese in Nansanga since there was no commercial farming that was happening (m-KII #2, Nansanga, October 2016). The vanished role of the state has created a development vacuum that manganese miners and tobacco producers are filling (KII #1, Serenje, October 2016). It should be reiterated here that despite these aspects in Nansanga’s development, customary land has been transferred into private hands with title deeds. These aspects together define what we have referred to as *limbo of development* of Nansanga in this paper.



Fig. 2 Development in limbo of Nansanga farm block

Collapsed Sasa (A) and Munte (B) dams in Kabundi and Mingomba areas, respectively. C shows cleared land for incomplete electrification since 2009/2010, and D is Kampoko manganese mine in Kabundi area of Nansanga with casual labourers that include women. Pictures by first author (Nansanga farm block).

### 3.2 Brief description of livelihood strategies

To understand community activities that generate means of household livelihoods, it is important to note that the establishment of Nansanga led to the transformation of local institutions that govern land use but also access to land-based resources (from customary land tenure to leasehold). Therefore, livelihood strategies need to be seen in light of the extent to which Nansanga has constrained, transformed or supported the access and use of assets for communities to achieve livelihood objectives (Scoones, 1998). In light of the sustainable livelihood framework, in transforming local institutions, Nansanga disrupts the socio-ecological conditions of local communities in multiple ways (section 3.2.1). Socio-economically, communities in Nansanga are heterogenous; constructing and possessing different portfolio of activities and assets for their livelihoods as coping strategies to the ‘Nansanga disruption.’ The socio-economic heterogeneity is embedded in specific historical context or initial conditions (such as education, size of land holding, age, household location and family unit composition/marital status, gender, livelihood activities etc) in Nansanga. We have expressed this heterogeneity in terms of wealth classes wherein each class possesses and uses assets to achieve livelihood objectives. These assets are in terms of human, natural, physical, social, and financial capital (Scoones, 1998; Tesfaye et al., 2011) and capabilities. These are summarised by each wealth class in the first column of **Table 2**.

In this section, we first present results on the development of Nansanga and community-level changes in section 3.2.1. We then present wealth classes in section 3.2.2, followed by community coping strategies in section 3.3.3. Given the centrality of forest resources to local livelihoods, we present community forest resources in section 3.3.4 and dedicate section 3.3.4.1 to caterpillars and mushroom.

#### 3.2.1 The development of Nansanga and concomitant community-level changes

The development of Nansanga has threatened the relocation of some households in the planned service centres of the farm block and 30 households between Munte and Bwande rivers in Mingomba area are threatened with relocation. The threat to the Bwande community followed a 2 202 ha land deal within the farm block by a businessman named Jeremy Baddock with government officials. With support from the Human Rights Watch, the case was in court at the time of the fieldwork. Reported community-level changes that constitute local SEE changes include:

- Land tenure conversion from customary land to leasehold that has led to limiting community access to land for collecting mushrooms, caterpillars and fuelwood and for 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, December 2017). Traditionally, hunting is not viewed as poaching, but rather a livelihood activity. The collapsed dams have also negatively impacted on community fishing;

- The two manganese open pit mines in Kabundi, while providing casual jobs, are land-hungry, degrading agricultural land as mining activities expand. This is slowly creating a landless class of local communities as some community members facing socio-economic hardship are selling their land to the mines (K-FGDs #3; K-II #5 & Mg-KII #1, April 2018);
- An increased number of farmers are participating in contract farming of tobacco. While this cash crop increases income for participating farmers who in turn employ others in casual jobs, tobacco production has led to localised deforestation and land degradation (K-FGDs #3, April 2018; M-FGDs #4 & Researcher observation). Additionally, there is labour flight from food crop production to work in tobacco production – worsening food insecurity in already poor households;
- In the Mingomba area, households are 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 local households face threats of involuntarily resettled because they are still living within demarcated parcels of land (i.e. land that has been titled and sold to outsiders). At the time of this study, no compensations had been paid out to local households affected, and there are no future plans for such payments. In the meantime, local community members reported to *illegally* enter private parcels for forest products, given that owners have not yet begun developing them (M-FGD #1, October 2016);
- There is migration of economically active community members from the north to the south of Nansanga to work in the manganese mines, abandoning the production of food crops but improving household incomes. Though the exact number of casual labourers could not be established, overall, there are more women than men (see **Fig. 2 (D)**). The reason is twofold; Lalaland is matrilineal and women have an influential role in running households, and they manage finances better than men who would otherwise spend it on drinking alcohol. These mine jobseekers are not necessarily landless. They are finding jobs in the mines instead of Nansanga farms where, according to the plan, they were supposed to be engaged as farm workers (M-FGD #4 & K-FGD #3, December 2018); and
- Kabundi has become a socio-economic hub in Nansanga, attracting different people, including internationals. Sexually transmitted diseases were reported to have increased (M-FGD #4 & K-FGD #3, December 2018).

The emergence of manganese mining and tobacco production is linked to the fact that Nansanga is in *limbo of development*. Mining and tobacco production are benefiting from government-funded road infrastructure in Nansanga as well as land that has not been developed according to the farm block development plan (m-KII #2, Nansanga, October 2016; KII #1, Serenje, October 2016).

### *3.2.2 Community wealth ranking*

Based on community criteria, households were identified and categorised into three classes: Low Wealth Households (LWHs); Medium Wealth Households (MWHs); and High Wealth Households (HWHs). 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). In our judgement, no single characteristic sufficiently defines the wealth class. Through household level interviews and FGDs, we came up wealth classes that combined different criteria that we structured into an iterative heuristic approach for assessing coping strategies. **Table 2** below summarises livelihood assets by wealth classes, showing more assets from LWHs to HWHs. Consistent with Oya (2004), the characteristics constitute criteria of labour mobilisation and degree of dependence, use and possession of means of production (assets). In **Table 2**, there is a gradient in the asset portfolio from left to right, similar to comparative terms bad, good and better for LWHs, MWHs and HWHs, respectively. The first column indicates important community-level assets linked to livelihoods, and general perception of socio-economic changes based on wealth class.

The mode of land acquisition is common to all three wealth classes (either inheritance or allocation by Senior Chief). Traditional ecological knowledge (TEK), including names, harvesting methods and techniques of forest resources is common to all the three wealth classes.

**Table 2** Livelihood assets by wealth classes

Livelihood 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	Makeshift 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 soybeans; 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	None.	Curio/carving/brick-	Curio/carving/brick-laying/carpentry/traditional

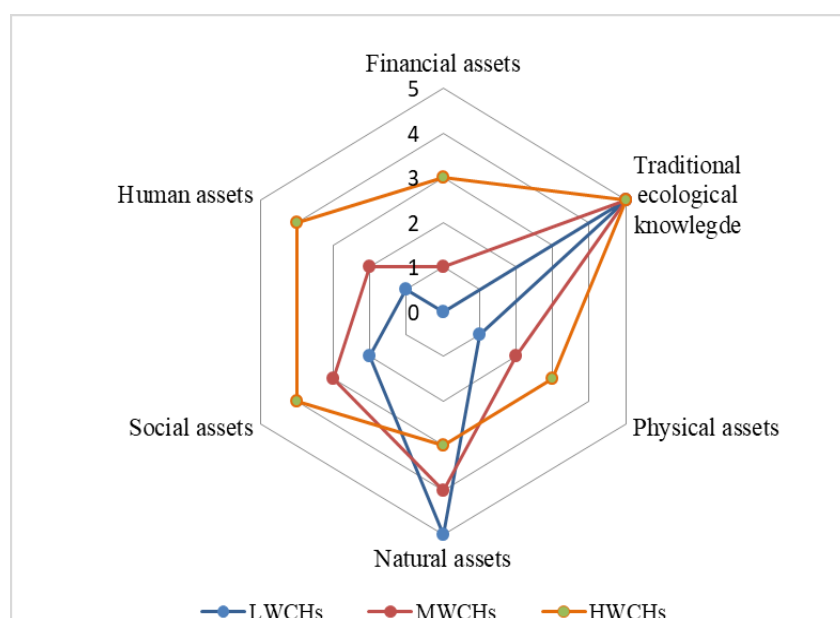


opportunities		laying/carpentry/traditional healing and beer-selling	healing, beer-selling and retailing
<i>Employment opportunities</i>	Engaged in own farming, agriculture-related employment, including working for food.	Engaged in both agricultural and non-agricultural employment, including sometimes 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.

### 3.2.3 Community coping strategies

Nansanga is still largely a non-monetised local economy though 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 monetarily compensated. 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 (**Fig. 3**). Dependence implied *possession and use of a particular asset* for livelihood because households depend on and use *only* what they possess. Thus, the measure of dependency is in terms of possession, use, and indispensability. A simple and easily comprehensible technique of stone count was used for households to indicate their level of dependence on the six assessed livelihood assets: financial, human, social, natural, physical and TEK. The scores were added and the mean recorded to represent each wealth class as in Favretto et al. (2016). The use of stone count technique proved useful as time and resources were a constraint. Overall, in terms of dependence, TEK scored the highest on the 5-point scale in terms of dependence for all the wealth classes.



**Fig. 3** Household dependence on assets by wealth class.

Except in natural assets, HWHs scored highest in all other assets, followed by MWHs and then LWHs. That is, for HWHs 73% of the livelihood strategies directly depend on the use of their physical, financial, social, human, financial and TEK endowments. For MWHs and LWHs, it was 57% and 47%, respectively. Household labour burden is highest in LWHs and least in HWHs, indicated by the highest and lowest labour dependency ratios, respectively. That the HWHs scored the highest illustrates the relative diversity of their livelihood strategies and coping strategies compared to LWHs and MWHs. Labour burden was also higher in female-headed households. Households that are female-headed are due to the death of the husband or separation. In both cases, the absence of a husband means the wife has to perform both male and female socially constructed gender roles.

For all the wealth classes, small-scale food crop farming (maize, sorghum, millet, beans, cassava and groundnuts), animal rearing (goats, pigs, chickens and ducks), hunting, fishing, collection of mushroom and caterpillars have continued as livelihood activities. While farming is the primary activity for all households, livestock rearing is not done by all households and did not appear as an important livelihood strategy for many local people. The dependence on forest resources (see **Fig. 4**) has equally continued. However, casual and seasonal jobs, straddling, migration from the village of birth or homesteads and dependence on social relationships (such as good-neighbourliness), selling of land to others (including manganese mining companies) and trees to tobacco producers have emerged as coping strategies associated with LWHs. Casual and seasonal jobs, tobacco production, selling non-alcoholic brew, selling land, informal loans (locally known as *kaloba*) and migration are coping strategies associated with MWHs. The strategies for HWHs include tobacco production, small shops and fared transport services to Serenje town, selling both alcoholic and non-alcoholic beverages as well as providing *kaloba*. Strategies of displaced households are limited to casual and seasonal jobs as they wait for the verdict from the courts in Lusaka (M-FGD #4 & K-FGD #3, researcher observation, December 2018).

While the positive views are specific to each wealth class in **Table 3**, 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 has been dominated by barter and socio-cultural support systems (**Table 3**). The heightened level of awareness was reported to often cause conflicts over fuelwood collection. This is because of perceived scarcity of fuelwood, heightened by the growing demand from tobacco growers who are buying from community members (**Table 3**). There is limited formal education and consequently, low technological skills. Churches are promoting both vertical and horizontal networks and interconnectedness, with non-Lalas getting leadership positions. With customary land going into private hands, the pendulum of power and traditional allegiance is swinging from traditional leadership to new private landowners.

**Table 3** Summary of community coping strategies in Nansanga

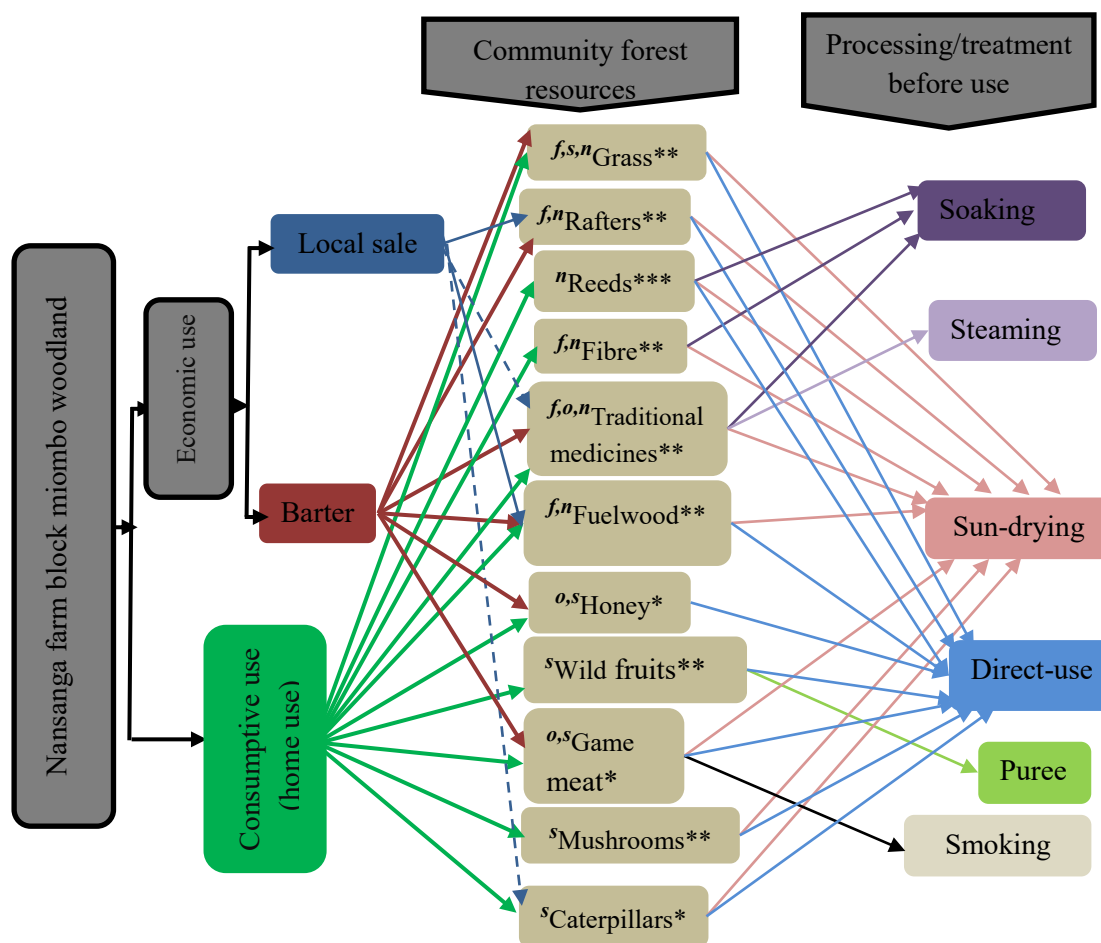
Class	Coping strategies	Positive views	Negative views
Low wealth class	Farm and mine casual/seasonal jobs	Mines, increased tobacco producers and Silverlands (farm enterprise in a nearby farm block) are sources of jobs for cash income.	More time on liquid cash income activities causing food insecurity 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, between December and 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 do not 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 ~\$ 21 per household.	Migrants and high-class households occupy church/cooperative positions. Only few people benefit from the unsystematic social welfare cash transfers.
	Sell of land to miners, 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.
Middle wealth class	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 0.5 ha = \$10.95; planting 0.5ha = ~\$3.63; weeding 0.5ha = ~\$4.58; and applying fertiliser 0.5 ha = ~\$1.82.
	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	Market for land and trees (to tobacco producers), earning cash for	Households are risking landlessness and fuelwood

Class	Coping strategies	Positive views	Negative views
	miners and trees for tobacco curing	households.	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 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 0.5 ha = \$10.95; planting 0.5ha = ~\$3.63; weeding 0.5ha = ~\$4.58; and applying fertiliser 0.5 ha = ~\$1.82.

\*Private car owners charging fares to transport people to Serenje, an urban centre

### 3.2.4 Community forest resources in Nansanga farm block area

The access and use of forest resources constitutes an important livelihood activity. Understanding the portfolio of people's livelihoods and how they cope would be incomplete without understanding forest resources and community reliance on them. In this section, we therefore present forest resources, and caterpillars and mushrooms in section 3.2.4.1. Nansanga is largely a cashless economy and isolated from urban centres. Forest resources are therefore, crucial to local livelihoods and general wellbeing (M-FGD #4; K-FGD #3; researcher observation, Nansanga, December 2018). Community members reported that the most important forest resources include grass, rafters, reeds, fibre, traditional medicines, fuelwood, honey, wild fruits, game meat and caterpillars. **Fig. 4** summarises the resources, harvesting patterns, perceived relative availability and processing/treatment before use.



**Fig. 4** Diagram of miombo community forest resources and their use.

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 (M-FGD #4 & K-FGD #3, Nansanga, December 2018).

### 3.2.4.1 Caterpillars and mushrooms

Caterpillars and mushrooms constitute important community forest-based resources. They are both sources of relish for eating with the staple food, *ubwali* that is based on maize flour (K-FGDs #4 & M-FGDs #3, April 2018). 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 4**). Mushrooms are moderately scarce while caterpillars were reported to be in the scarcest category (K-FGDs #4 & M-FGDs #3, April 2018).

**Table 4** 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>
<b>Mushrooms</b>		
• Bwitondwe	<i>Cantharellus afrociarius</i>	Generally associated with
• Ubukungwa	<i>Termitomyces titanicus</i>	<i>Brachystegia, Julbernardia,</i>
• Tente	<i>Amanita zambiana</i>	<i>Isoberlinia, Monetes and Uapaca</i>
• Kabansa	<i>Lactarius kabansus</i>	species.
• Chiteleshi	<i>Russula ciliata</i>	

Source: First author's compilation based on field data (December 2018).

Communities reported perceived changes in the relative abundance of trees associated with caterpillars and mushroom. From the most abundant to the least, communities reported the following order: *Julberbadia paniculata*; *Isoberlinia angolensis*; *Brachystegia longifolia*; *Markhamia africanus*; and *Uapaca kirkiana* (M-FGDs #2 December 2018). The relative abundance of these tree species has implications on the relative abundance of caterpillars and mushrooms in Nansanga. Community members reported five factors that have increased deforestation in Nansanga. These are: tobacco production; demarcation of plots; making of roads; population growth particularly in Kabundi community area where there is open pit manganese mining; and Kampumbu Resettlement Scheme (K-FGD #3, Nansanga, December 2017). However, there is also a strong belief that the availability of caterpillars depends on how the spirits within Nansanga are appeased. Caterpillar availability has been affected by the coming of non-Lalas in Nansanga who, through their 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 2017).

## 4. Discussion

Nansanga is in *limbo of development*, and therefore GRZ's policy to commercialise customary land for food security, job creation, reducing rural-urban migration and general

rural development (GRZ, 2005) through the farm block program remains a far-fetched dream, a mirage. Customary land has been converted and there are important changes (section 3.2.1) with which communities have to cope, based on their specific socio-economic and historical context. To discuss our findings on coping strategies, we proceed in light of the socio-economic heterogeneity based on wealth classes. We therefore, first discuss community coping strategies in light of wealth classes, household assets and use of forest resources in section 4.1. Second, we discuss the role of new developments in community coping strategies in section 4.2. Conceptually, these relate to the sustainable livelihood framework. This is because Nansanga has its own particular context, livelihoods and institutional processes related to customary land and state land. In these processes, informal institutions and formal institutions mediate the ability of community members to carry out strategies to sustain themselves (Scoones, 1998).

#### **4.1 Wealth classes, household assets and the use of forest resources in Nansanga**

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 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 three wealth classes expressed same level of dependence on it though LWHs are less likely to benefit from it in monetary terms. Those seeking traditional medicines or visitors in the area tend to approach people of influence. Affluence, influence and social status are closely 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 HWHs. They are important for both farm and non-farm purposes. Assets such as iron-sheet roofed houses, bicycles, cars, more human labour (including the ability to hire) and more disposable income (including ability to borrow *kaloba*) have enabled HWHs to cope better with Nansanga in *limbo of development*. These assets are also a marker of social status.

While some MWHs take advantage of the emerging opportunities such as tobacco growing and mining to socio-economically empower themselves, LWHs are getting into deeper socio-economic doldrums (M-FGD #4, Nansanga, December 2017). Besides natural and TEK assets common to the three wealth classes, natural assets are the most important that LWHs 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. Also, they are 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 (M-FGD #4 & K-FGD #3, Nansanga, December 2017). Some of them are also on monthly social welfare benefits, however the amounts are symbolic (~\$21.07 per household) – which they do not regularly receive every month. This finding is consistent with Smith *et al.* (2001) who found that begging and labouring in Uganda are the only means of the poorest households for their sustenance.

Assets at household level influence the appreciation of the SEE impacts of Nansanga. Poor households have few assets but these are vital for their survival, whilst wealthy



households have many assets which are utilised to further improve the household socio-economic situation. LWHs generally feel worse off compared to MWHs and HWHs by Nansanga in *limbo of development*. Within the farm block, LWHs have become farm workers for food to eat, with no social recognition by newcomers taking up leadership in social circles such as churches. Migrants have weakened the socio-cultural fabric, creating a sense of anomie more for LWHs than for MWHs and HWHs who take them as potential customers for livelihood activities such as brewed beer (M-KII#2, Nansanga, October 2016). The 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, 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 and Biggs, 2004; Syampungani et al., 2009), and how different household vulnerability contexts shape dependence on environmental safety nets (see Pritchard et al., 2020). This study found that depending on the household wealth class: 1) wealthier households use their asset portfolio 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 throughout the year; and 4) forest products are for survival (LWHs and some MWHs) and socio-economic improvement (some MWHs and HWHs). Point 4 is attributed to labour dependence and involvement in more lucrative activities. LWHs and MWHs have labour dependence of 1.3 and 1.1, respectively, compared to 0.7 of HWHs. LWHs do more straddling to diversify socio-economic activities to achieve their livelihood objectives. This further limits their labour availability, reducing their ability to grow food crops and collect forest products for themselves. 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 noted that the poorest in Zambia depend more on forest income than the least poor. Our finding is also consistent with the indication of Fisher et al. (2014) that asset portfolio differentials among community members influence levels of dependence and benefits derived from forest resources, but also socio-economic opportunities emerging from development of LSLA deals.

Beyond the findings of Kalaba et al. (2009), Kamanga et al. (2009) and Fisher et al. (2014) as noted above, ours suggest that the *availability of labour in an almost entirely*

*cashless rural economy* is an important factor accounting for community coping strategies to SEE impacts of LSLA deals in *limbo of development*. The availability of labour in the Nansanga case is in terms of quantity and quality, that is, the number of people in a household able to work and the skills that they possess, respectively. Thus, labour mobilisation in Nansanga (own and hired labour) is an important factor in the level of dependence on the means (land), efficiency (size of land and yields) of production, and coping strategies and general socio-economic wellbeing (wealth class). This finding resonates with Oya (2004) in Senegal, though it differs in one specific respect; there is no marketed surplus in Nansanga that Oya observed among groundnut and cereal farmers in Senegal – Nansanga being a predominantly cashless and geographically isolated non-monetised local economy.

Being a cashless economy isolated from urban centres, forest-based livelihoods have no important *economic (financial) value* and therefore, have a negligible economic role in improving the portfolio of household assets. Additionally, forest-based livelihoods are becoming scarcer and scarcer owing to the burgeoning population, land losses in some cases and restricted access and use in others, deforestation and land degradation.

LWHs continue depending almost entirely on the dwindling forest-based livelihood assets as an important safety net. Additionally, LWHs sometimes get food from wealthier households as a loan during the dry season and work for it three - four months later during planting, weeding or harvesting through an ‘eat now and work later’ scheme (M-FGD #3, December 2017). Thus, poor households have less time to work their own fields during the crucial phases of crop growth – affecting their own farm yield.

Those forest resources that are harvested by opportunity, are seasonal and scarcest (that is, game meat, honey and caterpillars – see **Fig. 1**), tend to be more for direct consumption as Kamanga et al. (2009) note. Mushrooms and wild fruits are seasonally harvested and moderately scarce, attributed to 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).

According to communities in Nansanga, if there were no newcomers 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 (M-FGD #4 & K-FGD #3, December 2018). In the distant past, there were cycles of four years of reduced caterpillars. The last one was 2009 that coincided with the development of Nansanga. They hoped they would have a good harvest of caterpillars in 2013. It did not happen. They waited for 2017. Again, it did not happen. This confirmed the annoyance of the forest 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. Nansanga has led to a cultural disruption, and as experienced by communities, this has had negative impacts on resource extraction, with LWHs bearing the brunt the most.

#### **4.2 The role of new developments in community coping strategies**

Nansanga led to the construction of roads, bridges, canals and dams. However, GRZ has not pursued the implementation of Nansanga as initially planned, giving rise instead to manganese mining and tobacco contract farming (K-KII #5 & M-KII #6, April 2018). To flourish, mining companies and the tobacco leaf companies have taken advantage of the Nansanga road infrastructure, unutilised land for crop production and available labour. Owing to poor workmanship and use of cheaper materials, the dams and canals have collapsed (G-KII #3, January 2018). However, HWHs and some MWHs have taken advantage of the failed situation to engage in lucrative activities such as tobacco production which earn them money to afford oxen for ploughing their fields, and three among those interviewed have bought Toyota Ipsum cars that they are using for transporting people for additional income. Therefore, as in Tesfaye et al. (2011) in rural Highland Ethiopia, our finding suggests that asset accumulation motivates HWHs, while LWHs tend to look for socio-economic opportunities to diversify their livelihood activities.

The asset portfolios of communities (particularly LWHs and MWHs) in Nansanga are too lean to enable them make investments in land to rise above peasantry. When in economic distress, some households on titled land are selling it to mining companies. This finding in Nansanga resonates with Chimhowu and Woodhouse (2006) who observed that land-titling tends to benefit people with economic influence without necessarily encouraging investments – titling land in Nansanga has licensed communities to sell land when in distress, thereby running the risk of creating a class of the landless.

GRZ intervened in customary land, transforming both use rights and users. The conversion of land tenure gave land new meaning and new value (Li, 2014) while underplaying the wider SEE impacts on community members. GRZ involvement foreignised customary land (Zoomers, 2010) from communities as it was neo-liberalised into private hands (Chimhowu, 2018). The foreignization and neo-liberalisation of customary land has led to the creation of cultural enclaves, and the erosion of the senior chief's influence which is limited to customary land. Interviewing the senior chief Muchinda in November 2016 before his assassination in May 2017, he expressed his fears: *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.*

In Nansanga, the co-existence of customary tenure and state tenure at local level has raised farm book fees for Lalas on customary land. *'The senior chief increased very much the farm book renewal fee from ~\$3.20 to ~\$35.11 - annual fee irrespective of the size of land. 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, March 2018).'* While this is the senior chief's strategy of making up for the lost collection base from Lala people, the charge further constrains people's financial situation. As a penalty for failure to pay the farm book fee, the head of the household has to work on the chief's farm for days to be determined by the local establishment (K-FGD #2, March 2018). This further deepens the food security concerns of particularly LWHs and some MWHs who are more specialised in their livelihood options. Diversification of incomes by

HWHs, as Smith *et al.* (2001) found in Uganda, contributes to households' abilities to cope better with the impacts of LSLAs. It is therefore a matter of 'specialise and die, or diversify and survive' the SEE impacts of LSLA deals – because diversification of livelihood activities is a survival strategy (Tesfaye *et al.*, 2011).

Nansanga has altered power relations around land, with the chief himself ceding land to the government and other urbanites who have created socio-economic and cultural enclaves. Socio-economic and cultural power has shifted power to the newcomers 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. Positions in churches and cooperatives are given to migrants, leading to power struggles (K #1 & M-FGDs#2, November 2016). Additionally, conflicts over the use of land and forest resources are partly attributed to the exercise of power by newcomers - leading to threats of evictions. This is 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).' This transformation has deepened the differential access and use of opportunities that have emerged; reinforcing the already existing socio-economic disparities embedded in pre-existing historical, cultural and power dynamics, and asset portfolios. While HWHs improve their socio-economic situations by taking advantage of emerging opportunities, LWHs are further locked into the spiral of socio-economic hardships.

Reflecting on the findings in light of the sustainable livelihood framework, Nansanga has come as a disruption to the socio-ecological system of the Lala people on previously held customary land. It is not a successful project, but one in *limbo of development*. With land tenure conversion, new structural relationships have been introduced that have reshaped the use of assets at household-level, including forest resource access and use. Coping with the changes of an LSLA deal in *limbo of development*, LWHs, that are more constrained by human, natural, physical, social, and financial capital, seek to diversify (e.g straddling) while HWHs (e.g acquisition of vehicles, oxen) seek asset accumulation to achieve their livelihood objectives. Nansanga has introduced external conditions that constrain (e.g restricted dambo grazing areas, labour flight) or encourage (e.g participation in tobacco production, informal money loans) the productive use and accumulation of livelihood assets for households.

## 5. Conclusion

A meaningful understanding of SEE implications of LSLA deals to improve land use policy is plagued with methodological challenges. The challenges are attributed to unreliable baseline data or the absence thereof. The second challenge is linked to the implementation of LSLA deals (punctuated with scaling down, cancellations, abandonments or transformations of business investment models). The aim of this paper was to assess the coping strategies of rural communities in Nansanga, a farm block that we have characterized as being in *limbo of development*. That is, stagnation of further development; lacking clarity on the development policy, crumbling infrastructure, emergence of mining and tobacco production, and absence of private sector (investors who bought land as part of the farm block plan). At the time of the research, we did not come across reliable baseline data to conduct a longitudinal study. Through an in-depth primary research *in-situ*, we used participatory rural appraisal

approaches to qualitatively assess coping strategies and SEE implications - as community lived experiences of an LSLA deal in *limbo of development*. We approached community members as *experts* of their own lived experiences rather than mere interviewees producing raw data for academic analysis. If LSLA deals need to represent and reflect the needs of communities, we believe that our approach has contributed to grounding LSLA research in a way that offers community voice in policy spaces to improve the management of LSLAs and their outcomes. Our approach has contributed to answering questions related to assessing coping strategies and SEE implications of LSLA deals with no or unreliable baseline data, and deals that have either been cancelled, abandoned, scaled-down or which investment model has been transformed. Additionally, by engaging with community members as *experts*, our approach enabled an engagement with micro-level processes to inform and ground land use policy making.

Using a case study, the approach has supported a learning process of understanding coping strategies of communities faced with an LSLA deal in *limbo of development*. In this paper, we have highlighted the role of household asset portfolios (and that community members are economically heterogenous and so are their coping strategies), power dynamics among stakeholders and accompanying local and state-level land governance institutions in shaping community-level coping strategies. Small-scale food crop farming, animal rearing hunting, fishing, collection of mushroom and caterpillars have continued as livelihood activities after the farm block has been established. However, there are changes in specific ways: labour migration to tobacco production and manganese mining has shifted attention from food crop production; land tenure conversion that has transferred land into private non-Lala hands has shrunk the hunting, grazing and fishing grounds; building of dams has negatively impacted on the fishing practices; and the cutting of trees has negatively impacted the availability of mushrooms and caterpillars. Overall, the most important coping strategies that have emerged include: casual and seasonal jobs (in mining and tobacco farming); straddling; selling land and trees (to manganese mining companies and tobacco producers, respectively); *kaloba* (informal loans); and selling alcoholic and non-alcoholic traditional brews – taking advantage of population growth in the area. While wealthier households are motivated to accumulate more assets, poorer ones are motivated to diversify their assets to achieve livelihood objectives.

Reflecting on the evidence from our study, Nansanga in *limbo of development*, has brought collateral SEE damage that is differentially affecting households based on the wealth class. It is important to point out that the development of Nansanga has not created wealth classes. The socio-economic status is embedded in pre-existing historical, cultural and power dynamics, and asset portfolios. Though it was beyond the scope of this paper to understand class formation in Nansanga, our findings suggest that Nansanga in *limbo of development* has reinforced the historically and socio-culturally existing socio-economic differentials that shape household coping strategies.

Reflecting on asset portfolios of the three wealth classes, our findings suggest that the farm block model that is meant to thrive on more technical know-how is not reflective and responsive to the socio-economic status of rural people and their ability to benefit from LSLA deals. Casual jobs are the only direct benefits that the economically active population can get. Our qualitative assessment of coping strategies of local communities facing an LSLA in

*limbo of development* cast doubt on the the possibility of LSLA deals to contribute to wealth creation for local people - the primary users of land that is taken away for commercial investments. If producing positive local SEE impacts is not the primary focus of LSLA deals, poverty alleviation, food security, rural development, employment creation and energy security from LSLA deals will continue to prove to be a mirage.

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## **Credit authorship contribution statement**

Andrew Chilombo: Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing - original draft, Writing - review & editing, Visualization, Supervision, Project administration, Funding acquisition. Dan Van Der Horst: Writing - review & editing, funding acquisition.

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