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Land-based livelihoods matter in Makhasaneni

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Photography by Shannon Herd-Hoare



A publication of the
Land and Accountability Research Centre (LARC)
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The Land and Accountability Research Centre (LARC) is based in the University of Cape Town's Faculty of Law. LARC forms part of a collaborative network, constituted as the Alliance for Rural Democracy, which provides strategic support to struggles for the recognition and protection of rights and living customary law in the former homeland areas of South Africa. LARC is particularly interested by the ways in which laws and policies frame power relations within these areas and threaten ongoing initiatives for democratic change and accountability at the local level.

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Ethics clearance for the research approach, specific research instruments and informed consent were provided through the Law Faculty Research Ethics Committee at the University of Cape Town. Consent was given by community residents for use of all photographs in this report.

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Photo: Shannon Herd-Hoare

Makhasaneni residents relied on the surrounding natural landscape as a source of food, construction materials, and livestock fodder. This study made use of participatory methods and household surveys to place an economic value on the use of natural resources per household per year.



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FOREWORD

Introduction and context

In October 2018, the Constitutional Court delivered a unanimous judgment in which it held that owners and lawful occupiers of land affected by mining are entitled to compensation prior to the commencement of mining development¹. The Court affirmed that compensation must be determined either through agreement between the company and the occupier, or by a court or an arbitrator. The judgment however did not address what relevant factors should be considered in determining the amount of compensation payable to the affected communities. It is this question that has driven the Land and Accountability Research Centre (LARC)², and its community partners who are faced with prospects of being economically displaced (through loss of livelihood) by mining development, to conduct this research study of Makhasaneni as it seeks to establish best practice in the determination of just and equitable compensation for communities who are faced with a potential loss of community land rights and land-based livelihoods.

Project-related land acquisition and/or restrictions on land use have resulted in development-induced resettlements across different parts of the world. This generally takes the form of both physical (relocation or loss of shelter) and economic displacement (loss of livelihood) (IFC, 2012) and has been estimated to occur with over ten million people around the world annually (Terminski, 2012). China and India are said to be the leading countries where large numbers of the population are affected by resettlements due to development projects such as dams, manufactured lakes, irrigation projects, the construction of roads and railways among others (Terminski, 2012). In South Africa, the struggle for just and equitable compensation prior to mining-induced resettlement is a source of major social unrest in mining-affected areas. This struggle has in part been motivated by the destructive ways in which resettlements have taken place. Mining-affected communities have also challenged the way mining companies conduct their valuations to determine the amount payable when faced with economic displacement. These valuations often ground their assessments on the market value of the community's land and also consider a limited set of other relevant factors. These valuations have been contested by communities who assert that they perpetuate their impoverishment.

¹ Maledu and Others v Itereleng Bakgatla Mineral Resources (Pty) Limited and Another (CCT265/17) [2018]

² LARC is a research and advocacy centre based in the Department of Public Law at the University of Cape Town. LARC's aim is to successfully challenge government policies, laws and practices that set the former homelands apart from the rest of South Africa as zones of chiefly sovereignty and which undermine the property and citizenship rights of the 18 million people living within them. In challenging these laws and policies, we see research, advocacy and litigation as three necessary and interlocking components of our work. The main beneficiaries of our work are rural communities and activists and civil society organisations working in North West, Limpopo, Eastern Cape, Mpumalanga and KwaZulu-Natal.

Study objective/rationale

This research sought to contribute empirically toward the growing literature on rural livelihoods, and support the development of approaches to just and equitable compensation of mining-affected communities, by presenting an integrated value of land-based livelihood activities in Makhasaneni, KwaZulu-Natal. To adequately address this aim, the objectives of this study were to:

1. Identify the locally available natural resources that support land-based livelihood strategies.
2. Determine the perceived material and intangible contributions of natural resources to respondents' livelihoods.

Makhasaneni is located in northern KwaZulu-Natal along the D477 road, approximately 30km from Melmoth. Makhasaneni covers an area of approximately 16.2k m² and consists of approximately 300 households which, in the absence of Betterment Planning, are dispersed across the landscape and linked by footpaths. Under the Apartheid regime, the area formed part of the KwaZulu homeland, but under democratic dispensation falls within the Mthonjaneni local municipality, one of five local municipalities that make up King Cetshwayo district municipality (Mthonjaneni Municipality, 2018). During the 1930s, the Makhasaneni community were forcibly removed from their homes in eMagogogweni by the colonial government to make way for tree plantations, and were relocated to Makhasaneni village (Yeni, 2019).

The research adopted a mixed-methods framework involving a combination of a focus group discussion (FGDs), using Participatory Learning and Action (PLA) activities, structured household surveys, informal conversations, site observations and key informant interviews. This allowed for triangulation of approaches. Fieldwork was conducted in late 2019 and early 2020 assisted by local fieldwork assistants who aided translation. Interviews and discussions were conducted in the local language, isiZulu, and interpreted simultaneously. Careful attention was paid to the process of translating from the vernacular, as this is critical in understanding and contextualising expressions and emotions (Krog, 2008). Ethics clearance for the research approach, specific research instruments and informed consent were provided through the Law Faculty Research Ethics Committee at the University of Cape Town. Community feedback sessions on the findings of the draft Makhasaneni research report were held in February 2021. These were arranged in a way that ensured that they complied with Covid-19 regulations.

Summary of key finds

Some of the key findings of the study include:

- Almost all households in Makhasaneni relied on land-based livelihood activities to some extent to meet various needs such as to support general home consumption requirements, generate cash income through trade and provide a safety-net in times of crisis.
- Land-based livelihood strategies were typically used in combination with each other and included (a) home garden and field cultivation; (b) livestock ownership, (c) use of wild resources (such as firewood, poles or medicinal plants), and (d) small-scale forestry. Overall, wild resources were the most participated in sector (all households), while arable agriculture contributed the highest economic value to the household. Small-scale forestry was the least participated in sector, with only half of all households in the sample, and the lowest contributing sector to the household economy.
- Land-based livelihood activities occurred alongside a diverse portfolio of livelihood activities including social grants and off-farm income (income generating activities which did not rely on the land e.g. wage labour, trade of sorghum beer, hairdresser, dress maker, etc.).
- When considering cash and non-cash (i.e. home consumptive) economic value across livelihood sectors, land-based livelihood activities (R96 647) surpassed off-farm (R32 716) and grant (R27 551) income, representing the highest contributing sector to the overall livelihood portfolio (58%).
- The value of land-based livelihoods was particularly pronounced in the context of low unemployment (only 12% of households had a member that was full time employed).
- Land-based livelihood activities were not just strategies of survival or self-sufficiency in the economic sense, but also related to issues of cultural identity. The continual investment into and development of what were described as ‘traditional activities’, such as the purchase or sale of livestock, the change of land-use categories from grazing land to outgrower forestry, and investment of time and labour into cultivated plots, etc., suggested a deep dependence on the land which was essential to their agrarian identity - an important element of being a rural inhabitant.

Conclusion

Mining has long been the backbone of South Africa’s economy. Given the racially discriminatory policies of the colonial and apartheid regimes, black people have barely benefitted, and have repeatedly suffered disruption or dislocation, when mining operations take place on their land. They are far more vulnerable than white landowners who have title deeds to prove their rights and lawyers to negotiate surface leases. In order to right these historical wrongs mining-affected communities must be acknowledged as land rights holders who are entitled to adequate compensation. Such compensation needs to be determined taking into account a holistic understanding of how communities use and rely on their land.

This research solidifies what the Makhasaneni community already knows, that their land is valuable. It does this by setting out the degree and frequency of reliance on the land as well as economically valuing the various ways in which residents engage with it to support their livelihoods. It also recognises the spiritual and cultural values of the land which extend beyond economic confines to support identity and sense of place.

It is our hope that this research report is useful to the Makhasaneni community and that the findings in the report can be used to advance the communities’ struggles for the recognition of their land rights.

Nolundi Luwaya

Director

Land and Accountability Research Centre, UCT





Given that Betterment Planning did not occur in Makhasaneni, homesteads are scattered across the landscape and interconnected by a mosaic of land uses such as crop cultivation in home gardens and fields, small-scale timber plantations, cattle kraals and grazing land for livestock. (Photo: Shannon Herd-Hoare)

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LAND-BASED LIVELIHOODS MATTER IN MAKHASANENI

Rural dwellers across the world draw on a range of livelihood strategies and income sectors. Land and natural resources within South African customary tenure systems play an important role in supporting livelihoods and household economies. This infographic sets out the multiple land-based strategies which support household consumption and income generation in Makhasaneni – a rural village in KwaZulu-Natal.

PLANTATIONS: 0.5%

LIVESTOCK: 20%

WILD PRODUCTS: 35%

CROPS: 44%

Proportional share of the each land-based sector to the average economic value of land-based livelihoods per household per year (R96 647).

SMALL-SCALE PLANTATIONS

Approximately half of all households utilized their fallow land (e.g. old fields) to plant small-scale timber plantations.

- Plantation owners received an average of R7 650 after every seven year growing cycle.
- For most, the income received from the sector was seen as a form of supplementary income rather than a mainstay income generating activity.

WILD PRODUCTS

All households were involved in wild resource use which were collected around the village. Some examples include firewood, thatch grass, medicinal plants, poles for fencing and building construction, grass for mat and broom making, honey, etc.

- The most widely collected resources were medicinal plants, firewood, pot stirrers and wooden poles.
- The average, combined home consumption and trade value of wide resources was R23 638 per household per year.
- Firewood had the highest proportional contribution (50%) to the overall value of resources per household per year.

CULTIVATION

Cultivation took place in home gardens and fields within the homestead boundaries. Amadumbe cultivation took place in drainage lines scattered across the village. Each of these cultivated plots were for home consumption and/or trade.

- Almost all households (92%) cultivate to some extent.
- Amongst cultivator households, the average value of crops grown for home consumption was R29 802 per household per year. The value derived from crop trade was slightly higher at approximately R30 124 per grower household per year.
- The cultivation of green maize on the cob was favoured for home consumption while amadumbes dominated for trade. The latter contributed more than half of the economic value of traded crops per household per year.
- Beyond its economic contribution to the household economy, cultivation was viewed as a cultural expression and connection with what is seen as an element of ones cultural identity.

LIVESTOCK AND POULTRY

Livestock (cattle and goats) and chickens provided multiple goods and services to villagers. For example, cattle generated cash through trade, manure for cultivation, formed part of bride-wealth payment, were used to plough ahead of cultivation, produced milk and allowed for slaughter for meat consumption and ritual events. Chickens and goats were kept primarily for slaughter and trade.

- 42% of all households owned cattle, 52% owned goats and 77% owned chicken.
- Amongst livestock owners the average, annual value derived from livestock related goods and services was approximately R37 823 per household per year and amongst poultry owners was R1 802 per household per year.
- The ritual slaughter of livestock was believed to link the living and the dead and assisted in maintaining meaningful connections with the ancestors who were acknowledged to ensure the wellbeing and health of the family.

1. INTRODUCTION

Most rural livelihoods draw on a range of livelihood strategies and income sectors (Angelsen et al., 2014). In particular, land and natural resources within South African customary tenure systems play an important role in supporting the livelihoods and household economies of rural dwellers (Shackleton et al., 2000; Shackleton et al., 2001; Dovie et al., 2006; Shackleton et al., 2007). Land-based livelihood strategies are commonly used in combination and include smallholder arable production, cultivation of homestead plots, livestock husbandry and collection of wild natural resource, such as firewood, thatch and berries (Shackleton et al., 2001; Neves and du Toit, 2013). These support rural livelihoods in numerous ways such as providing goods for direct household consumption, reducing cash expenditure by providing free substitutes, generating cash income through local or wider-scale trade and serving as a safety-net in times of shock or loss (Dovie et al., 2006; Shackleton et al., 2011; Mkhawani et al., 2016; Rogan, 2016), along with a variety of cultural functions and needs. When quantified economically, a common method of assessing their livelihood contributions, each of these land-based livelihood strategies make measurable contributions to the household. For example, Shackleton et al. (2005), who worked in the Sand River catchment in the Limpopo lowveld, found that goods and services rendered by cattle such as milk, manure, trade, slaughter, etc. represented R11 271 (inflation adjusted) amongst cattle owning households. Further, Mugido and Shackleton (2019), who studied six sites of different agro-ecological potential across South Africa, showed that the mean income share from wild natural resources was 15% of the livelihood income portfolio when state grants were included in household income or 30% when social grants were excluded. The marked contribution by smallholder crop production has also been widely noted with Dovie et al. (2003), for example, estimating that in a small, semi-arid village in South Africa, the net value of crops was R7 246 (inflation adjusted) per household per annum.

However, rural landscapes represent more than sources of provisioning goods and services - they are also inextricably linked to the culture and identity of local people and vice versa. Many communities reserve a piece of land or section of riverbank as a sacred place for worship and communicating with their ancestors or for other traditional activities such as initiation. In Tanzania, for example, approximately 8% of the land is comprised of sacred groves. These small forests are the locations for sacrificial rituals to kin group ancestors and for initiation ceremonies (Sheridan, 2008). The harvest and use of specific natural resources support spiritual and cultural connections to the landscape (Egoh, 2002; Cocks, 2006). Most significantly, there is also evidence that the experience of intangible values is intertwined with the material (e.g. Cocks et al., 2013). Overall, the inclusion of both the material and immaterial values provide an integrated valuation which better reflects the value of landscapes to rural livelihoods.

Therefore, this research sought to contribute empirically toward the growing literature on rural livelihoods by presenting an integrated value of land-based livelihood activities in Makhasaneni, KwaZulu-Natal. To do this it (a) identified the locally available natural resources that support land-based based livelihood strategies, and (b) determined the perceived material and intangible contributions of natural resources to respondents' livelihoods.

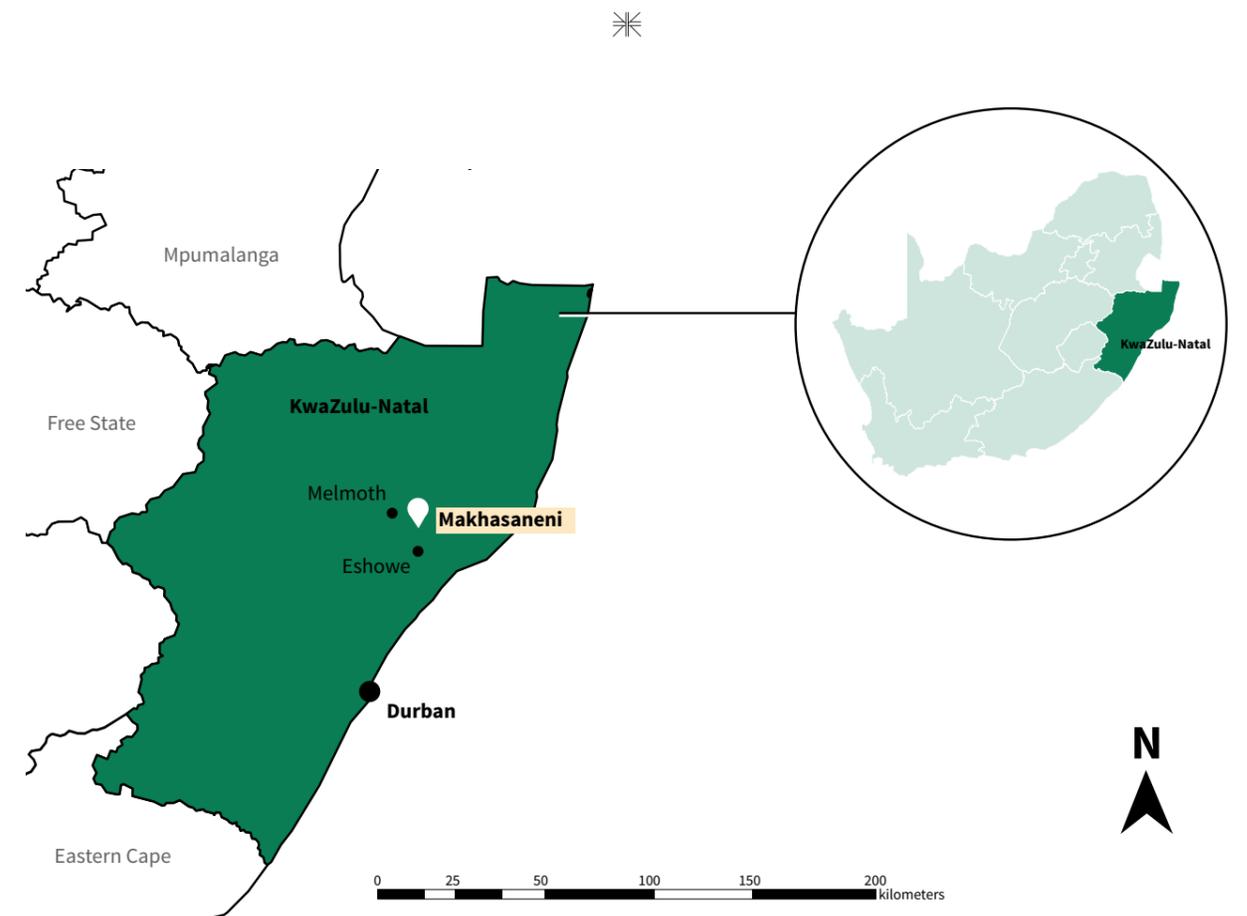


Figure 1: Makhasaneni is a rural village located in KwaZulu-Natal between Eshowe and Melmoth.

2. STUDY AREA

Makhasaneni is located in KwaZulu-Natal along the D477 road, approximately 30km from Melmoth (Figure 1). Makhasaneni covers an area of approximately 16.2k m² and consists of approximately 300 households which are dispersed across the landscape and linked by footpaths.

Between each homestead is a mosaic of land-use types, including arable plots, small outgrower

plantations and communal grazing land which is used for grazing and the extraction of natural resources. Under the Apartheid regime, the area formed part of the KwaZulu homeland, but under democratic dispensation falls within the Mthonjaneni local municipality, one of five local municipalities that make up King Cetshwayo district municipality (Mthonjaneni Municipality, 2018). Residents have access to the national grid and to potable water pumped from a central tank to taps on or near each homestead. Each homestead consisted of an average of 6±3 buildings, and in most cases one of these were RDP houses (Table 1). The majority of households relied on a diverse portfolio of activities including social grants, off-farm income (income generating activities which did not rely on the land e.g. wage labour on neighbouring Mondi plantations or commercial farms, spaza shops, the trade of sorgum beer, hairdressers, and builders etc.) and land-based livelihood activities. Two-thirds of households derived income from off-farm income generating activities (R32 716±47 241) but only 12% of all households had a member that was full-time employed. Almost all households (87%) received social grants, including child, old age pensions and disability grants, which contributed R27 551±20 830 per household per annum. All households were involved in some degree of land-based livelihoods which is described in detail in the results section. Low levels of education were pervasive with a quarter of the village population having no schooling, less than a quarter with a matric certificate, and less than one percent with any form of higher education (Statistics South Africa, 2011).

Makhasaneni is under customary land tenure, where the land is accessed and managed via the traditional leadership structure i.e. Entembeni Traditional Authority (LARC, 2016). This study uses the word customary instead of communal to denote land under African tenure systems. The word customary better reflects the varied and flexible nature of land rights in these areas. During the 1930s, the present Makhasaneni community were forcibly removed from their homes in eMagogogweni by the colonial government to make way for forestry plantations and relocated to Makhasaneni village (Yeni, 2019). More recently, in 2011, a large mining company began iron ore prospecting in the area, which is perceived by many community members to have long-lasting negative effects as it destroyed family graves, local water streams and fields. Massive resistance by the community ensued and in 2016 the mining company withdrew its application for a mining license (Yeni, 2019). The community was victorious in resisting mining against incredible odds.

There is limited information available on the biophysical characteristics of Makhasaneni, but the broader Mthonjaneni local municipality is characterised by hilly topography with altitudes increasing to 900 m. A large area of the Mthonjaneni local municipality, in which Makhasaneni falls, is classified as Northern Zululand Sourveld. This vegetation type generally comprises bushed grassland and bushland and therefore facilitates collection of diverse natural resources such as firewood, thatch and berries and supports livestock grazing (Mthonjaneni IDP, 2018

2019). The area experiences warm and humid temperatures, with June as the coldest and February as the hottest months, and an overall frost-free climate throughout the year (Emvelo Quality and Environmental Consultant, 2017).

Table 1: Makhasaneni socio-economic profile (value±standard deviation) (Source: Household survey)

ATTRIBUTE	MAKHASANENI
Approximate number of households	300
Availability of piped water	Yes
Electricity	Yes, all households connected
RDP Houses	Almost all
Number of schools	1x highschool, 1x secondary school, 1x creche
Average age of household head	59±15
Number of permanent residents per household (adults + children)	8±4
Number of permanent adults per household	4±2
Number of permanent children per household (<17 years old)	4±3
Proportion of households with at least one full time job (%)	12
Proportion of households who receive grants (%)	87



3. RESEARCH APPROACH

3.1 Data collection

The research adopted a mixed-methods framework involving a combination of a focus group discussion (FGDs), using Participatory Learning and Action (PLA) activities, structured household surveys, informal conversations, site observations and key informant interviews. This allowed for triangulation of approaches. Fieldwork was conducted in late 2019 and early 2020 assisted

by local fieldwork assistants who aided translation. Interviews and discussions were conducted in the local language, isiZulu, and interpreted simultaneously. Ethics clearance for the research approach, specific research instruments and informed consent were provided through the Law Faculty Ethics Committee at the University of Cape Town.



Focus group participant identifies wild product harvest points on projected aerial photo of Makhasaneni during participatory mapping exercise. (Photo: Shannon Herd-Hoare)

A focus group discussion (FGD) was conducted with a mixed group of approximately 40 residents who engaged in land-based livelihood activities. Within the FGD discussion two PLA activities, ranking exercises and participatory mapping, were conducted. Participatory mapping allowed for participants to identify harvest locations of key natural resources, such as firewood, berries, thatch grass, grazing and hunting locations, and key resource areas during adverse times. Ranking exercises were used to discuss the nuanced differences between resources that were used most frequently compared to those that were used in larger volumes. Although both PLA activities typically produce physical outputs, such as ranked lists and annotated maps, the large number of FGD participants prohibited the construction of outputs and were therefore used to facilitate meaningful discussion.

Twenty semi-structured key informant interviews were conducted to gain additional understanding of land and natural resource use in the community, to clarify any uncertainties which emanated from household surveys or FGD and gain additional expert-based knowledge on a particular subject. These included key individuals who specialised in the use or trade of a particular resource, independent forestry growers and contractors, shop owners, elderly long-standing members of the community, etc.

A household survey was conducted with one hundred random households (approximately one-third of the village) to capture the types and quantities of goods and services captured by resident households from the land available to them at their home or from the local landscape. This was in order to calculate the net Rand value of land-based livelihoods per household per year.

The questionnaire had four sections: the first outlined natural resources including (a) wild resources and (b) arable agriculture (field and home garden), (c) livestock husbandry and (d) outgrower timber production. The arable agriculture, wild resources and livestock husbandry sections included a checklist of the crops/wild resources/livestock harvested or owned by



Research assistant conducts a household survey with a Makhasaneni resident under a large tree to escape the midday heat. (Photo: Shannon Herd-Hoare)

households in the 2019 season. This was followed by details on the goods and services harnessed from each sector including the frequency of collection (number of times a week/month/or annually) over the number of months (to account for seasonality), and the typical volume of collection. Where necessary local units, such as 'headloads', 'a handful', 'a sweet packet', were converted to conventional measures. Local farm gate prices of each resource were noted. Taking into account the production period, the mean annual home consumption value for each resource was calculated by multiplying the annual yield by the average local price. This was reflected as the mean value \pm the standard deviation (e.g. R1 234 \pm 1 234) throughout this report. In the livestock section, slaughter and trade was calculated by multiplication of the number of slaughtered or traded animals per annum and the average local value of the livestock type. Mean values were calculated across user households and also all households (i.e. across users and non-users). Input costs for each sector were recorded to calculate the net value (i.e. gross value minus costs of production) for home gardens and livestock sectors.

Input costs for the former included costs of seedlings, manure and labour (number of hours working in each cultivated plot during the growing season multiplied by average cost of labour in the village), and for the latter included costs of preventative and curative medication per annum across all livestock types, cost of chicken feed and shepherding hours (the average rate paid to another member of the community to look after livestock). Input costs for wild resources, such as family labour, were not recorded or deducted. The small-scale outgrower section collected data on the species, size and number of forestry plots, the number of years the household had been involved in the industry and the frequency with which timber was

felled. Given that almost all households hired a contractor, the Rand value derived from the contractor the last time timber was felled was recorded. This was supplemented by in-depth interviews with various players in the 'market chain'.

The second section contained a series of questions investigating the immaterial benefits provided by the landscape that have been shaped by human-nature interactions. These were open ended questions which included: (a) what do you value most about Makhasaneni, (b) how does Makhasaneni connect you to your cultural heritage; (c) how does Makhasaneni support your spirituality; (d) are there any landscapes or places around here that are particularly important or special to you, places that you would miss strongly? If yes what sort of place and why? (e) what do you value Makhasaneni most for: (i) the production of consumptive goods and services, (ii) the cash income generation potential through trade of natural resources or (iii) sense of place.

The third section captured the socio-economic and demographic characteristics of each household. This included questions such as household size and structure, and the age, level of education and number of years spent in the village of the household head. As well as the number and value of cash income sources in the household from formal, casual or self-employment sectors and the number and value of social grants in the household.

The fourth and final section documented when land was first acquired by the household, the processes of land acquisition for homestead construction and arable agricultural land, who the main decision makers were around leasing or selling land.

3.2 Data analysis

Data were expressed in descriptive statistics, and where necessary augmented with analysis in Statistica. After testing for normality, an ANOVA was employed to test the significance of differences in the mean incomes between land-based livelihood sectors; and between all income sectors in livelihood portfolios. Linear regressions were carried out to test the strength of the relationship between income sector and number of adults; and mean crop/wild resources/livestock income and diversity of crops/wild resources/livestock. A t-test was conducted to test for a relationship between female- and male-headed households by income sector.



4. RESULTS

The results are presented in each of the four land-based livelihood sectors. Each sub-section outlines the degree of use, the cumulative home consumption and trade Rand value per household per year, and the cultural or spiritual connection forged through the participation in each sector. Almost all figures, unless otherwise stated, are net figures i.e. the cost of production have been deducted from the gross value.

4.1: Arable agriculture

This section details the contribution of small-scale arable agriculture to livelihoods in Makhasaneni. There were three major locations of cultivation in the village: (a) home gardens (ingadi) - small plots characterized by mixed cropping and located on the residential lots); (b) fields (amasimi) - also located on the homestead plot but identified by their large size and the cultivation of a single crop, usually maize. This local understanding of fields differed to other similar studies in regions that experienced Betterment Planning in the 1940s where fields referred to large tracts of mono-cropped land some distance from the homestead. In this study, these large tracts were referred to as 'old fields' which now lay fallow, were grazed by livestock, had been given by owners to new village residents for homestead construction, or used to cultivate small-scale plantations. (c) taro root (amadumbe) fields distanced from the homestead in the drainage lines in various parts of the village as they required well-drained, moist soil conditions which were rarely present at the homestead. Not all households had access to amadumbe fields which were typically inherited or borrowed, but all households were allocated plots for home gardens and fields.



Amadumbe fields incised into drainage lines throughout the village.
(Photo: Shannon Herd-Hoare)

Despite all households having home gardens and fields, not all residents actively cultivated both, although almost all households (92%) cultivated to some extent. The majority of cultivators grew crops for both household consumption and trade (63%), with fewer exclusively for home consumption (35%) and exclusively for trade (2%). Despite there being three separate cultivation

sites in Makhasaneni, one resident noted “Yes, there are three, but we see them as one.” Therefore, cultivation will be discussed according to the purpose of cultivation (consumption and trade), not cultivation location.

HOME CONSUMPTION

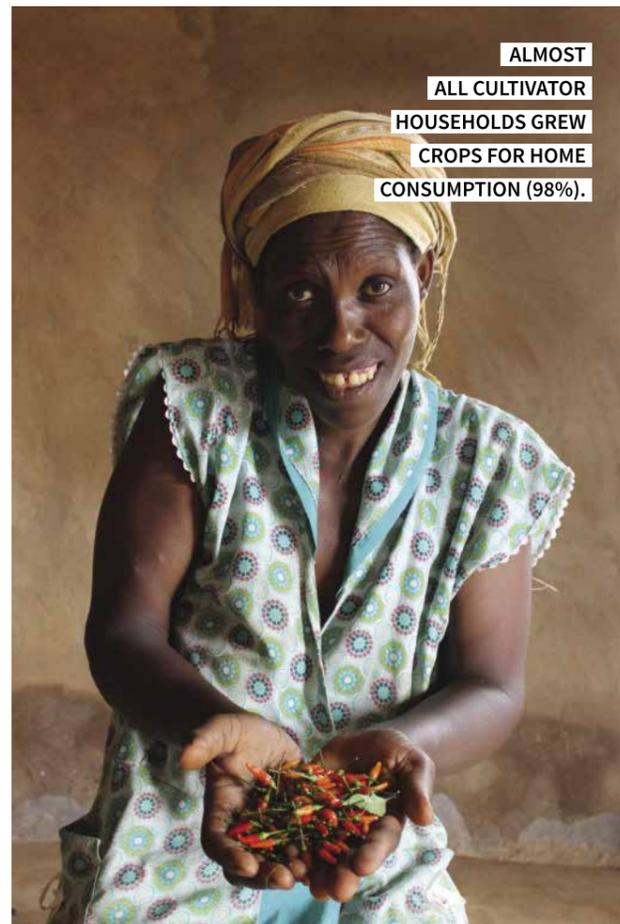
Almost all cultivator households grew crops for home consumption (98%). A range of 26 different crops were cultivated for this purpose, with a mean of 8±3 crops per household. Green maize (i.e. maize cobs) was the most widely cultivated crop for home consumption (84% of cultivator households), alongside other primary crops such as spinach (58%), wild leafy vegetables (imifino) (56%), pumpkin (53%), tomato (49%) and cabbage (47%).

Amongst cultivator households (i.e. those that were involved in cultivation) the average, net value of crops for home consumption was R29 802±34 188 per year. A high standard deviation reflects the great range arable values, which was greatly influenced by the size of the garden and field, the number of crops maintained, and the quantity harvested.

The highest home consumption value in a single household was R162 550 per annum. This household cultivated 14 different crops across a home garden and field, with the value of green and dry maize accounting for 83% of the value. This household of five relied on casual jobs and two child grants for cash income. Another household with a high annual home consumption value, R144 815 per annum, also had a high crop diversity (15 crops) but specialised in the production of amadumbes. In this household, 40 x 25-litre buckets of amadumbes were harvested once a week for five months and represented more than 95% of the value of cultivated plots. The only other sources of cash income for this household of nine people, were remittances and child grants.

TRADE

Amongst cultivator households which traded crops for income (65%), specific crops dominated



Resident showing her chilli yield. (Photo: Shannon Herd-Hoare)

such as amadumbe (taro root) (80% of households), sweet potato (33%), spinach (28%), cabbage (27%) and tomato (27%). The net, income generated from selling produce ranged from R278 - R133 962 per household per annum, with a mean of R30 124±30 843. Amadumbe trade alone generated an average of R19 652±22 014 per annum, representing more than half (61%) of the gross annual economic value of traded crops per household. Residents favoured amadumbe cultivation as the warm climate and moist soil conditions were well suited for their growth, and because their tubular root-systems were not easily damaged by wandering livestock.

INTANGIBLE VALUES OF CULTIVATION

Makhasaneni was valued for its fertility and crop potential. An 80-year-old female who had spent her whole life in the village linked fertility to food security, claiming, “This land feeds us. We are not obliged to go the shop, everything we need to eat is in the garden. No one can claim to be going to bed without food like they do in towns. Because we produce ourselves, we share too; if somebody does not have, we don’t sell to them, we just give them”. Another 62 -year-old male who was born in Makhasaneni, but had spent many years working in other parts of KZN, noted “When I was young, I did not latch onto my mother’s breast, so she used to crush maize to feed me. So even when my mother was helpless, the land provided.” He continued, “Our soil is the source of all life here. If it were not for it, I wouldn’t be alive, and you couldn’t ask me these questions. So, when you are talking about ploughing and the land, you are talking about my whole life.” However, older Makhasaneni residents believe that the new generation does not harness the fertility of the land, stating, “People here can be totally dependent on the land but people get issued grants now and have become lazy and are not drawing on the full potential of the land.”

**I AM A ZULU WOMAN;
CULTIVATION IS PART
OF WHO I AM.**

For most households, cultivation represented more than the practical service of food production, it was valued as a cultural expression and connection with what was seen as an element of their cultural identity. One female informant noted: “I am a Zulu woman; cultivation is part of who I am.” Women were observed as key players in cultivation in Makhasaneni. The trade and home consumption of crops not only provided a sense of independence for them, but was also cited to provide self-satisfaction and fulfilment.

4.2: Livestock husbandry

LIVESTOCK OWNERSHIP AND FREQUENCY OF USE OF GOODS AND SERVICES

Across the sample, similar proportions of all households owned cattle (41%) and goats (52%)





A man returns home with livestock collected from old fields where they have been grazing all day. (Photo: Shannon Herd-Hoare)

(cumulatively referred to as livestock), and slightly more owned poultry (chickens) (77%). The average herd size amongst livestock owners was 11±12; and amongst poultry owners was 17±15 chickens. A few owners with large numbers resulted in large standard deviations. Cattle ownership was preferred because of the status associated with cattle and the greater diversity of goods and services obtainable such as trade, lobola (formally accepted term for bride-wealth payment), power for ploughing, milk, manure and ritual slaughter.

Motivations for livestock ownership included slaughter (for ceremonial ritual and meat consumption), trade, manure and lobola. Poultry were kept for slaughter, trade and egg collection. Amongst them, slaughter was the most frequently used output, cited by 67% and 85% of goat- and cattle-owning households, respectively, and 79% of poultry-owning household. Poultry slaughter was widely practiced, approximately 20±27 chickens per owning household per year, because they were easy to slaughter when guests visited or for household consumption with little financial loss to the household. Conversely, cattle and goats were slaughtered to mark specific occasions or for specific ritual ceremony.

The trade of live animals for cash income was the second-most widely used, harnessed by approximately half of all livestock- and poultry-owning households (cattle: 59%; goats: 54%; poultry: 49%). Trade was usually to satisfy an immediate household need, such as the sale of goats to cover unexpected funeral costs. This illustrates the safety-net function of livestock as it allowed households to bridge the income gap resulting from economic distress. Residents also noted the sale of livestock to raise capital for expenses, such as school uniforms and stationary ahead of the school year. This provides insight into the savings function of livestock which were often referred to as 'an informal bank'.

AVERAGE, ANNUAL HOME CONSUMPTION AND TRADE VALUE OF LIVESTOCK AND POULTRY OUTPUTS

The average, annual, net consumption and trade value (excluding the capital value of herd growth) for the goods and services rendered by cattle and goats to stock-owning households was estimated at R37 823±63 591 per household, and poultry at R1 802±5 274. Households with larger herd sizes derived a greater economic value from livestock (F=79,8; R²=0.45; p<0.001). Table 2 reflects the percentage of all and user households engaged in the use of livestock-related goods and services. All households refer to the percentage of all households which make use of the good or service, while owner household refers only those who possess livestock. It also distinguishes economic figures between owner households (households which own said livestock but do not use that particular good or service – such as a cattle owner which does not milk cow) and owner-user households (a household which owns said livestock and uses that particular good or service – such as cattle owner which does milk cow). Cattle owners received the highest annual gross value from cattle-related goods and services (R54 831±75 783), yet the frequency of use of outputs and their economic contribution to the household did not necessarily coincide. For instance, lobola was the highest valued livestock service (R108 879±100 601 per annum), yet only 22% of owners used their cattle for this service.

The average, gross value of goods and services from goats, was less than four times that of cattle (R11 899±9 796). This was likely because goats offer fewer goods and services than cattle and the unit price of goats was almost seven times less than cattle. The gross value of poultry-related goods and services had the lowest contribution to owner households (R2 777±4 794). The high standard deviation and much greater gross value than net value was a result of the high input costs, namely chicken feed, associated with poultry ownership.

Table 2: Gross home consumption and traded values of livestock and poultry benefits to households in Makhasaneni

Benefit Status	Goods & Services	Proportion of HH (%)		Average Value (R/yr)		
		All HH	Owner HH	Owner user HH	Owner HH	
Cattle	Home Consumption	Milk	20	49	3931±4646	2117±3912
		Manure (Cultivation)	30	73	452±481	280±449
		Plough	5	12	160±126	16±66
		Lobola	9	22	108879±100601	20739±60003
	Trade Other	Cash Sales	24	59	32852±21704	19230±23224
		Slaughter (Ritual & Consumption)	35	85	14098±14848	12035±14589
		GROSS TOTAL (R/yr)	(a) owner user HH: 56205±76231		(b) owner HH: 54831±75783	
Goats	Trade Other	Cash Sales	28	54	7041±6141	3791±5703
		Slaughter (Ritual & Consumption)	45	67	9369±5903	8267±6321
	GROSS TOTAL (R/yr)	(a) owner user HH: 12628±9621		(b) owner HH: 11899±9796		
Poultry	Home consumption	Eggs	24	31	1566±1639	509±1180
		Cash Sales	38	49	1545±5419	753±3836
	Trade Other	Slaughter (Ritual & Consumption)	61	79	1980±2632	1543±2462
		GROSS TOTAL (R/yr)	(a) owner user HH: 3282±5053		(b) owner HH: 2777±4794	
AV. NET LIVESTOCK VALUE (R/YR)		(a) owner user HH: 37823±63591		(b) owner HH: 37823±63591		
AV. NET POULTRY VALUE (R/YR)		(a) owner user HH: 1802±5274		(b) owner HH: 1802±5274		

INTANGIBLE VALUE OF LIVESTOCK OWNERSHIP

Cattle and goats were economically valuable commodities, a source of great pride, and culturally potent icons. Ritual slaughter was essential in linking the living and the dead and maintaining meaningful connections with the ancestors who were acknowledged to ensure the wellbeing and health of the family, the society and nation and believed to be responsible for bringing rain, making crops grow and for the healthy growth of children.

The kraal is more than a housing compartment for livestock, it was said to be both pleasing to the ancestors and to represent a cultural symbol of a 'proper African homestead'. One respondent claimed "A house without a kraal is just a house not a home". It plays an important role in ritual ceremonies, which was expressed well by one respondent "If you get married in the city it is not yet completed if you did not come back to the place where your original home is with the kraal. During the marriage ceremony I have to report to the ancestors in the kraal that I have given my son a wife so here is this wife that you have given him." Others reported that the requirement that one's umbilical cord should be buried in the kraal, which represented that "his whole being is in this homestead" meaning that the land and the homestead is part of him.

4.3: Wild products

This section outlines the range and extent of wild product use and their average, annual consumption and trade contributions to household income. Resources collected directly by members of the household from customary land, indigenous forests and commercial Mondi timber plantations were considered, and those purchased or gifted from other households were not included in the calculations. Apart from grass brushes, the value of the raw material rather than the processed product was noted.



RANGE AND EXTENT OF USE OF WILD PRODUCTS FROM LOCAL ENVIRONMENTS

All households collected wild products, with an average of 11±3 wild products per household per year. The most widely collected wild products were medicinal plants (92% of households), firewood (89%) wooden pot stirrers (83%), poles (76%), thatch (74%), were collected by more than three-quarters of all sampled households (Figure 2).

Despite the widespread collection of medicinal plants, the scale and frequency of collection differed. For some, imphepho was the only medicinal plant collected in 2019 usually ahead of cultural ceremonies, and for others small quantities of commonly used medicinal plants, such as msuzwana, umbhanjana, ibozana, icishamlilo, were collected throughout the year. The latter

RITUAL SLAUGHTER WAS ESSENTIAL IN LINKING THE LIVING AND THE DEAD

group believe "Of course we use medicinal plants, we are Zulus. We use medicinal plants first and only consult a doctor if that doesn't work."

Firewood was collected for heating, cooking heavy meals and for use in traditional ceremonies. On average, firewood harvesters collected nine head-loads of firewood per week from pockets of indigenous forests and from commercial Mondi timber plantations. The sale of firewood within the village represented an important source of income to some households. One female resident, who relied solely on three child grants and the sale of firewood within the village asserted, "I usually collect firewood from the plantations in the valley next to the soccer field. If I want Zulu wood (indigenous forest wood), I have to go all the way to the Mfule River which is too far. These plantations give us good wood. I slipped last month while collecting firewood and broke my ankle. Things have been very difficult for me now because I can't collect and trade".



Thin poles used for roof construction which supports thatch grass. (Photo: Shannon Herd-Hoare)

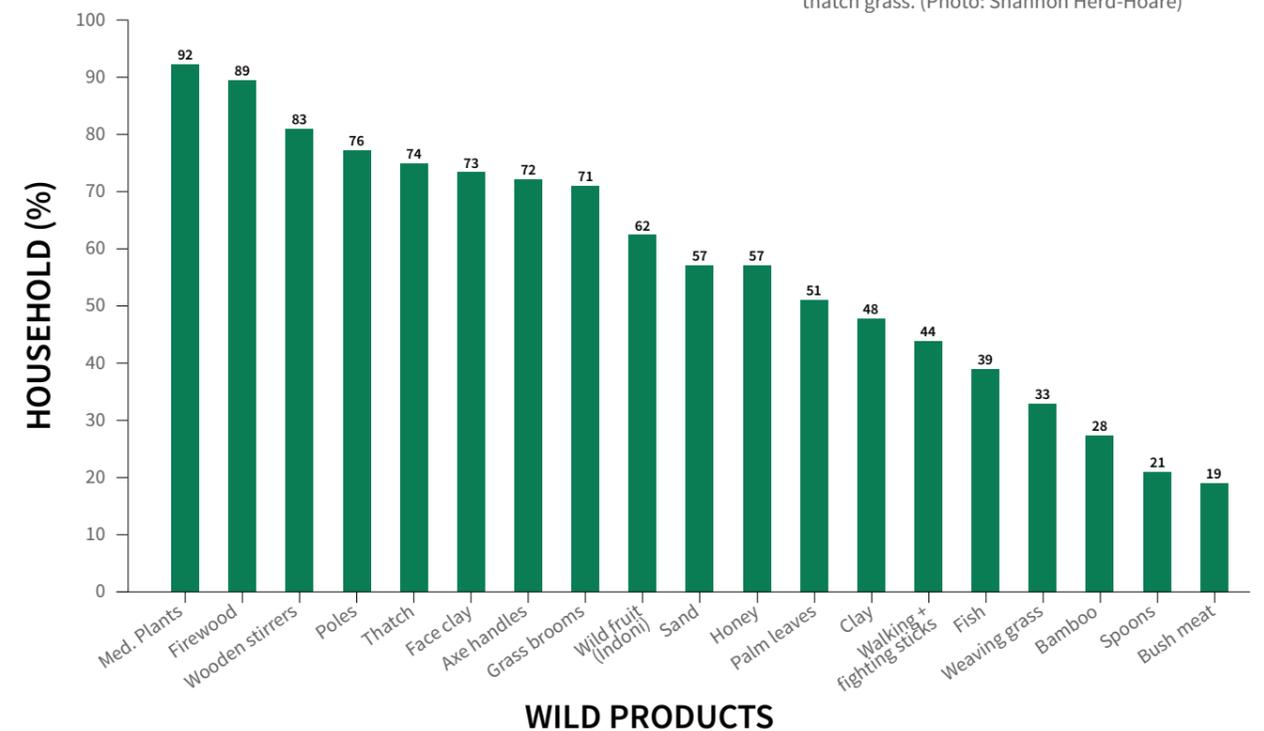


Figure 2: The proportion of households that harvested particular wild products in Makhasaneni in 2019

GROSS, ANNUAL HOME CONSUMPTION & TRADED VALUE OF WILD PRODUCTS

The gross, combined home consumption and trade value of resources consumed was R23 638±23 061 per household per year. Firewood contributed the highest amount, R14 706±19 805 per user household, representing 50% of the total value of all the resources per annum, followed by weaving reeds R3 749±5 135 (16%) and then thatch grass R2 214±4 803 (10%) (Figure 3). The high standard deviation for firewood indicates the large range in value (lowest -R38 and highest-R139 705 per household per year), reflecting the diversity in collection patterns. Some households collected infrequently and purely for traditional ceremonies and others collected daily and in large quantities for household use or sale.

Females dominated the trade of wild products on both a regular and ad hoc basis. All listed wild products, except for palm leaves, wild fruit, axe handles, wooden stirrers and moulding clay, were sold by at least one household in the village. There was a thriving grass mat trade within the village. Although the data reflects the raw material value of weaving grass (ikhwane), respondents noted that the real value was derived from the processed product, grass mats. Thirteen percent of all households ranked income generated from grass mat trade to be within the top two cash income generating activities within the household. These were often directed back into land-based livelihood activities such as the purchase of goats. Not only was the trade of woven products an important source of cash income for the household, but it is also considered an important skill amongst women.



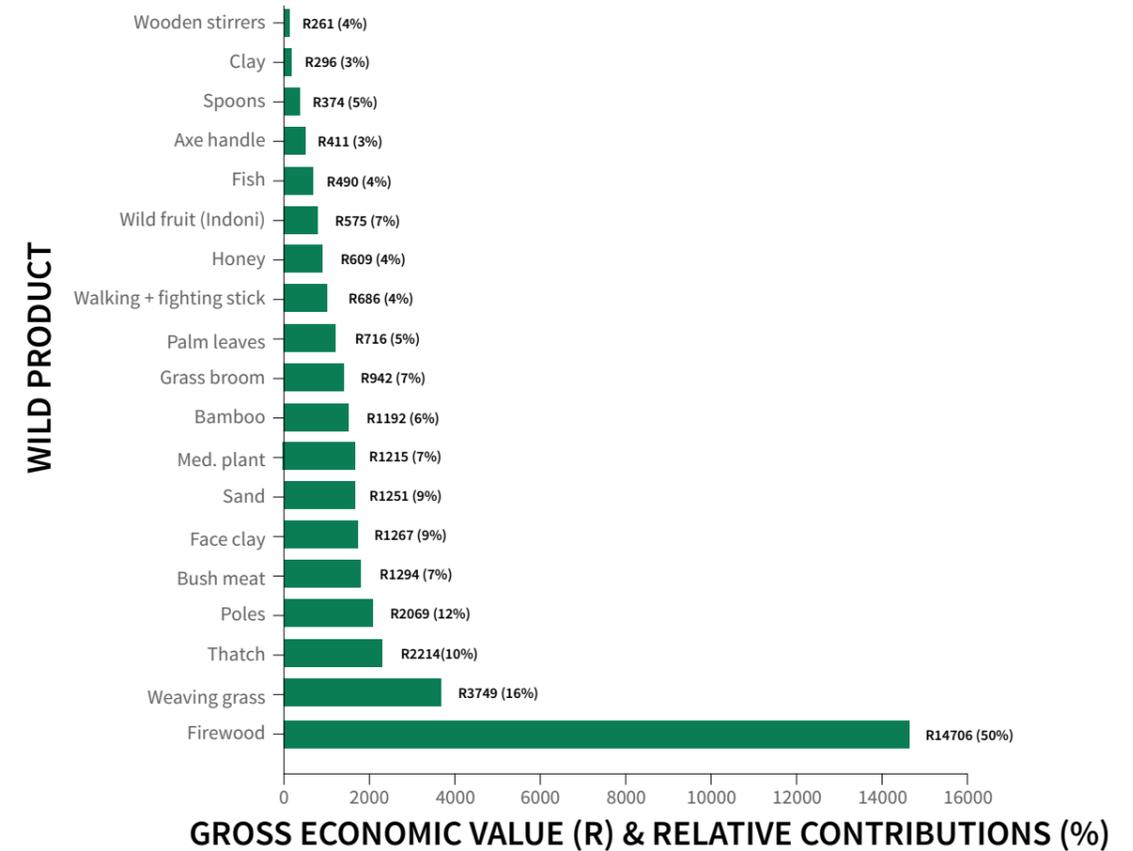
A weaver illustrates mat making technique on her loom. (Photo: Shannon Herd-Hoare)



A weaver shows beautifully decorated ikhwane mat with coloured wool. (Photo: Shannon Herd-Hoare)



Ikhwane grass collected and stored for mat construction throughout the year. (Photo: Shannon Herd-Hoare)



GROSS ECONOMIC VALUE (R) & RELATIVE CONTRIBUTIONS (%)

Figure 3: The gross, annual, home consumption and trade value (R) of wild products and their proportional contribution to each user household in 2019¹. (Percentage contribution don't add up to 100% because data represents user households)



(Left and Right) Income generated from grass mat trade was an important source of cash income amongst households. (Photo: Shannon Herd-Hoare)

4.4: Small outgrowers

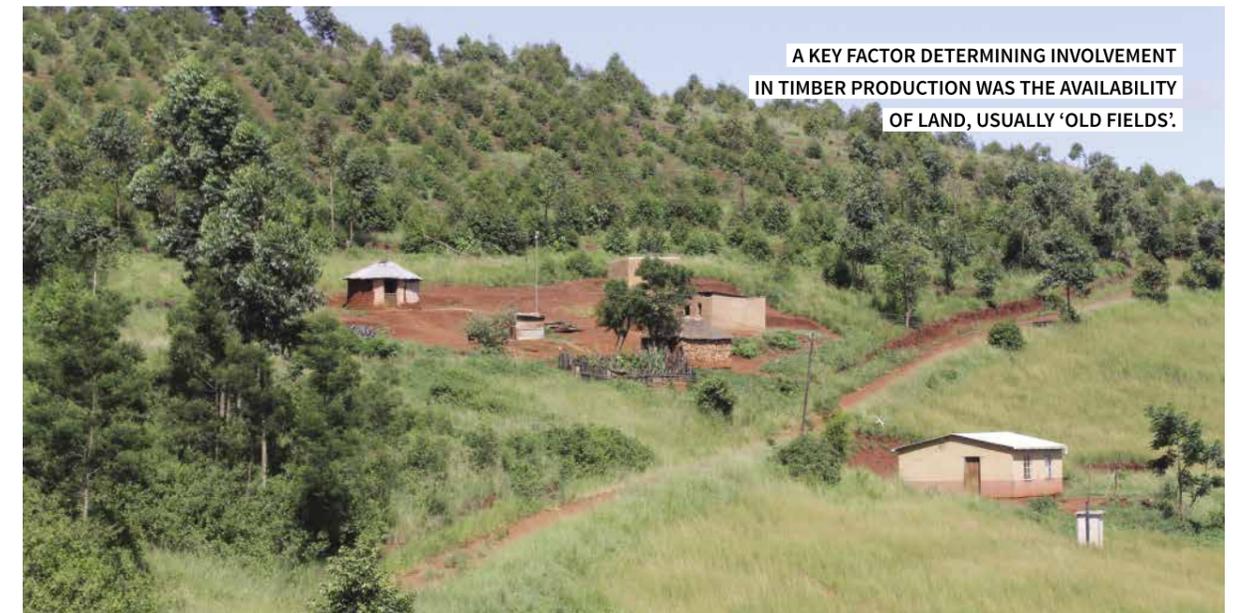
Half of all households were involved in small-scale timber production. According to residents, plantation cultivation was originally initiated in the village in 1988/89 as part of a Mondi outgrower scheme, Khulanathi, which was based on a system of contract farming. Growers were provided with physical inputs, loans and extension for the establishment and maintenance of small plantations. In return, after incorporating the costs of input, Khulanathi purchased the harvest of all trees for a small fee, after the growing cycle of seven years. A few growers were still connected to Khulanathi, while the majority considered themselves independent small growers who cultivated and managed their own plantation without support from timber companies. These independent growers usually sold their timber to larger growers in the region who required an additional fibre supply for maximising economies of scale.



Plantation owner illustrates various stages of plantation growth, from seedlings (left) to mid-cycle growth (right)
(Photo: Shannon Herd-Hoare)

A key factor determining involvement in timber production was the availability of land, usually 'old fields'. Therefore, those involved in the industry usually inherited both forestry knowledge and established plantations from their parents or grandparents. Although one household reported to have begun timber production 40 years ago, the mean number of years involved in the sector was 17 years. Still, the timber industry continued to grow in the village with more than 10% of growers entering the industry in the last five years. These new growers were required to follow a formalised process which involved delineating their proposed plantation boundaries with the headman to ensure that the land was theirs and were required to notify their neighbours of their decision. The decision must also be taken to the chief where it will be minuted. Unlike amadumbe fields, land for plantations could not be borrowed from other households because it was a long-term and permanent decision.

The economic return from smallholder forestry was nuanced. For some growers it provided a lucrative source of income, while for others a minor, ad hoc cash injection to the household. The net economic return the last time each grower felled their plantations ranged from R400 to



A KEY FACTOR DETERMINING INVOLVEMENT
IN TIMBER PRODUCTION WAS THE AVAILABILITY
OF LAND, USUALLY 'OLD FIELDS'.

A small-scale plantation, situated on an old field, growing next to the homestead. (Photo: Shannon Herd-Hoare)

R35 000, and averaged R7 650± R8 628. Given that gum and wattle (the most common species) were felled in seven-year cycles, that is approximately R1 093 per annum. This range in economic return was a symptom of (a) the size of the plantation, which, according to residents, averaged 2.5 ha and ranged from approximately 0.5 - 42 hectares and (b) the degree of grower involvement in the production line. Many households without interest and/or knowledge about the timber industry and who did not belong to Khulanathi relied on contractors who absorbed the costs of production and provided a skilled service. However, contractors absorbed a large percentage of the profit. For instance, growers who were personally involved in each phase of production could earn more than three times the value per unit area of the same size than they could receive from a contractor.

For many, forestry was an additional source of livelihood rather than mainstay. One respondent explained it well saying, "The forest takes years before you can benefit from it. And you can't owe your stomach...you must eat." Other than the financial reward, growers cited additional incentives for participation in the sector such as: (a) to ensure self-sufficiency with firewood and construction materials for housing; (b) securing rights over unutilised land as some respondents were concerned that Mondi was capturing village land for new plantations; (c) ease of management compared to food crop; (d) strategic use of land as it was often too steep for crop cultivation or homestead construction; and (e) once established, forestry also provided an extra source of income in one's livelihood portfolio. One contractor within the village remarked, "I took the decision to become a contractor so that I could stay in Makhasaneni. I don't want to be in Joburg, it is far from my family and there are expenses in being there. I want to be home and have cattle and be present in the homestead. Forestry contracting is lucrative

which means I don't need to find piece jobs in Joburg." Another prominent businessman in the village explained how he plans to develop small-scale forestry on his vacant land in phases so that when he retires, he can fell trees every single year. For others it was an important safety-net with many claiming that they had sold their timber to contractors before the end of the seven-year cycle, forfeiting the potential value at the correct age and size, but providing access to quick capital.

4.5 Income portfolio

CASH AND NON-CASH LIVELIHOOD PORTFOLIO

The average contribution of all cash and non-cash (i.e. consumptive) livelihood activities (i.e. land-based livelihoods, off-farm and grants) was R156 914±119 160 per household per annum. Land-based livelihoods had the highest contribution to the overall livelihood portfolio (58%±24) (Table 3), of which crops contributed 44%±28, wild resources 35%±26, livestock 20%±24, then plantations 0.5%±2. When land-based livelihoods were unbundled and compared alongside other livelihood sectors to the overall net value per household, crops were the highest contributor (27%±23); followed by grants (25%±22); wild resources (18%±14) and off-farm sector (18%±18); livestock (12%±16) and then forestry (0%±1).

There was a significant, albeit weak, relationship between the number of adults per household and the total income from the land-based livelihood sector ($r^2 = 0.148$; $p = 0.0001$). Weak significant relationships also existed between the number of adults per household and the monetary income from: (a) livestock ($r^2 = 0.11$; $p < 0.001$); (b) wild resources ($r^2 = 0.54$; $p < 0.05$); and (c) grants ($r^2 = 0.134$; $p < 0.0005$).

Table 3: The average, annual, net cash income value (R) from land-based livelihood and off-farm and non-farm sectors and the corresponding percentage contribution

LIVELIHOOD ACTIVITY	AV, ANNUAL, NET ECONOMIC VALUE (ALL)	% CONTRIBUTION TO AV. CASH INCOME VALUE (ALL)
Land-based livelihood	96 647±87 833	58±24
Off-farm	32 716±47 241	18±18
Grants	27 551±20 830	25±22
NET VALUE:	R156 914±119 160	

CASH INCOMES

Across all cash income streams, the average total livelihood income was valued at R110 454±102 966 per household per annum. This was a composite value of (a) the trade of land-based livelihood goods and services, such as livestock, arable agriculture, wild resources and forestry, (b) the value of off-farm livelihood activities, such as hairdresser, builder, taxi driver, etc., and formal employment, and (c) the receipt of state grants including old age pension, child welfare and disability grants. Overall, households derived more cash income from off-farm cash income streams (62%±31) than from land-based livelihoods (38%±31), but when non-cash incomes was included this picture completely reversed (58% from land-based livelihoods and 42% from off-farm and grants).

Thirty-three percent of all households had at least one member employed for wages. Twelve percent held permanent employment, while 22% were casually employed. Remittances were received by 40% of households. The mean wages and remittances to recipient households were only R32 624±38 238 per household per annum ($n=61$), or R R19 900±33 792 across all households. Government grants provided R31 668±19 172 per household per annum for 87% of households. This represented 36%±29 of the average cash income value per household per year. Many households (26%) were entrepreneurs selling off-farm goods and services (such as, hairdresser, the sale of goods such as bread, sorghum beer, vetkoeks and knitted goods, taxi businesses, etc.) which yielded R38 204±49 143 per household. Income from all off-farm livelihoods, including wages, remittances, entrepreneurial ventures, shepherding, etc., was R43 621±50 036 per beneficiary household, approximately 26%±25 of total cash income portfolio (Table 4), or R25 729±39 139 for all households.

Cash income from land-based livelihoods generated R51 739±68 495 annually, representing a mean income share of 38%±31. Almost half of this value was comprised of cash generated through livestock trade (49%±42), followed by cultivation (33%±39), wild resources (11±24) and then timber plantations (3%±15).

Table 4: The average, annual, net cash income value (R) from land-based livelihood and off-farm and non-farm sectors and the corresponding percentage contribution. (All values, except wild resources, were net values.)

LIVELIHOOD ACTIVITY	AV, ANNUAL, NET ECONOMIC VALUE (ALL)	% CONTRIBUTION TO AV. CASH INCOME VALUE (ALL)	% CONTRIBUTION TO AV. CASH INCOME VALUE (ALL)
Land-based livelihood ¹	51 739±68 495	50 186±68 030	38±31
Off-farm	43 621±50 036	25 729±39 139	26±25
Grants	31 668±19 172	27 551±20 830	36±29

4.6: Intangible connection to the landscape

Residents identified a diverse set of non-material or intangible values and attachments to the landscape that extend beyond the economic values discussed in the land-based livelihood subsections. For instance, the landscape is given meaning by the people who live there, and in turn residents feel that the landscape gives them meaning and a sense of identity and belonging. The multiple levels of associations, meanings and attachments are directed at different components of the village and surrounding natural landscape. The main culturally significant landscape component were the rivers (38% of all households) as an important site for restoration and cleansing ceremonies alongside pragmatic uses such as bathing and swimming, as a water source for livestock and for washing heavy blankets.

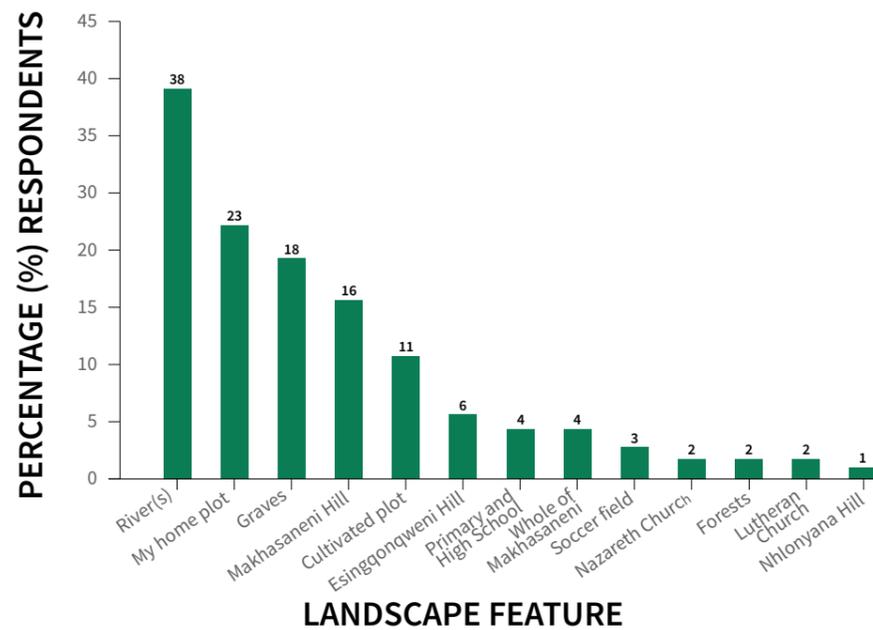


Figure 4: Most valued feature in Makhasaneni (from household survey data)

Homesteads, scattered across the landscape, were identified by 23% of households as a central component of the cultural landscape. The key elements of the homestead include the living quarters, the cattle kraal, the cultivated plot, and kwaGogo (“the home of the grandmother”, a round hut with a thatch roof specifically built for carrying out ritual practices and receiving leadership from the ancestors). According to residents, the homestead is the seat of the ancestors and ceremonial rites. One respondent noted, “I can have a house in Durban, but my headhouse is here. Anything I want in life has to start off here.” Graves were also recognised as key component of the landscape (18%), which were not just considered a resting place for the dead but seen as a place for consultation, to receive instruction and to perform rituals.

During key informant interviews “the whole of Makhasaneni” or “this whole area” was often referred to as an important component of culture, albeit fewer participants made mention of this in household surveys. These residents attached values and meanings to the entire landscape, with its natural, constructed and intangible components. The area was important not only for its current residents, but also urban residents who, according to their families, still have strong familial ties. Makhasaneni is considered to house local heritage, tradition and ancestral connection. Many Makhasaneni residents seek to pass on their local heritage to future generations while simultaneously ensuring their economic advancement. The large tracts of open land in the village facilitate their cultural ways of life. One respondent claimed, “I have been to other villages and they are like townships or compounds. Here is one house, and right next door is another house. In these places it must be difficult to conduct a ceremony because you might slaughter a cow on your neighbour’s property by mistake because your property is too small. In Makhasaneni, we have large open spaces and the homesteads are scattered. Even our chickens can’t go to our neighbours because they are too far away.

FOR MANY,
THE MAKHASANENI
LANDSCAPE
CONTRIBUTED TO
‘SENSE OF PLACE’

For many, the Makhasaneni landscape contributed to ‘sense of place’. Residents asserted that their connection to the land was via birthright noting, “When you are born in a place, it is hard to leave,” “I was not born in the hospital, I was born in this house. My umbilical cord is actually buried in the kraal which means that my whole being is in this land.” Others claimed it was their interaction with the landscape over time that have given it meaning to them, with a cattle owner claiming, “There is no greater feeling than the smell of the cows chewing on the cud on their way home from the field at sunset. They are ready to go into the kraal, and you feel an overwhelming sense of pride. When the sun has gone down and the cows are in the kraal, you just sit around outside and watch the moon rise. And so when you are talking about Makhasaneni, you are talking about me. How can I explain myself to you? I will die for it. It is difficult to detach myself from this land.” Yet, for others the deep sense of place is fostered by their connection to those who have lived before them and the history of the landscape, with one resident claiming, “You see, all these hills and rivers have names. They were all named by our forefathers. They are part of us.” Others added, “I could move to another place, buy the new place would never have the same meaning because my father was not in this new house. You see, my father was staying in this house and his spirit is here” and “I have been to many places, but I can’t feel comfortable. If I am here, I know that I am in the right place. I can do anything I want, and I am not scared because I know that I am protected by my forefathers.”



5. DISCUSSION

Land-based livelihoods, including livestock, arable agriculture, wild products and outgrower timber, were a central component of life in Makhasaneni. An important aspect of these strategies was their broad-based nature (Shackleton et al., 2001), with most rural households deriving livelihoods from at least three of four livelihood activities at one time. Non-timber forest products was the most widely participated in sector (all households), followed by arable agriculture (92%), livestock husbandry (67%) and then small outgrowers (50%).

Land-based livelihood strategies were widely used for direct consumption (i.e. subsistence use) and cash generation. When economically valued, land-based livelihoods contributed R96 647±87 833 to all households in the village, which accounted for 58% of the total annual value per household. This is comparable to Dovie (2001) where land-based livelihoods contributed 58% to the household in the Lowveld but was higher than Shackleton et al. (2005) where the aggregate value of agro-pastoralism in the Bushbuckridge region of Limpopo was 38%. Given the high rate of unemployment and job losses in the formal sector and that only 12% of households had a member 'full time employed', land-based livelihoods played an important role in sustaining Makhasaneni residents. The relationship between the land-based livelihood sector and off-farm income suggests that those households who receive stable cash incomes in the off-farm sector invest further in the land-based livelihoods, such as purchasing cattle as an investment or hiring a tractor to plough larger plots for cultivation in an effort to diversify livelihoods.

A holistic assessment of the economic value of land-based livelihoods on customary land helps us to understand why access to natural capital or customary land supports livelihoods and acts as a safety-net or final resort. It also highlights the interconnections between multiple categories of the system. For example, wild products could be gathered during agricultural and livestock activities and used as inputs to agriculture (tool handles and fencing), or the income from the sale of wild product crafts (such as grass mats) could be reinvested in crop inputs or livestock. An integrated assessment at the local scale also provides insight into the intangible dimensions of engaging in land-based livelihoods, such as identity and sense of place, which according to residents are one of the most important reasons for living in Makhasaneni.

Given that there are multiple land-based livelihood sectors with nuanced differences, the remainder of this discussion provides further insight into each sector individually.

ARABLE AGRICULTURE

Almost all households (92%) were involved in some degree of cultivation in Makhasaneni which

represented an important source of food and cash income to cultivator households. The study demonstrated the diverse crops grown by rural homesteads with green maize as the major crop for home consumption (84% of home consumer households) and amadumbes for trade (80% of trader households). The dominance of maize (Shackleton et al. 2001; Dovie et al. 2003) and cultivation of amadumbes for trade has been observed throughout the province (Darroch and Mushayanyama, 2006; Zobolo et al., 2009; Kisaka-Lwayo and Ajuruchukwu, 2012; Zimu-Biyela et al., 2020), although none recorded such a high percentage of amadumbe trader households.

The economic value of crops for home consumption (R29 697±34 188) and trade (R29 606±30 801) was almost identical, but a higher percentage of residents engaged in the former (98%) than the latter (60%). In general, the value of cultivated plots in this study was more than double than those in other parts of the country. For example, in the former Transkei region of the Eastern Cape, Herd-Hoare (2018) found that the average, gross direct-use and trade value amongst cultivator households across three villages was R7 220. In KwaZulu-Natal, Ogg (1995) estimated an average annual income of R13 742 (inflation adjusted) for KwaJobe.

In Makhasaneni, arable agriculture was the highest contributor to overall household income (27%±23). This is in line with Sartorius Von Bach and Nuppenau (1996) who reported that annual farm income was 24% of total household income in Venda, Lebowa and KaNgwane but was much higher than other studies such as Dovie et al. (2005) (15.4%) in the Lowveld and Mtati (2014) (0.7%) in the Eastern Cape. The discrepancies in these figures may be a result of numerous factors such as: (a) most other studies which value the outputs of cultivated plots have been conducted in Limpopo and the Eastern Cape, which have different climates and underlying soil types; (b) each property in Makhasaneni had a tap which allowed them to easily fulfil their domestic and agricultural needs; (c) the value per crop unit (e.g. bucket, individual head, etc.) may have been perceived by residents to be higher than in other studies; (d) the village has remained relatively untouched by apartheid policies, such as Betterment Planning, which promoted villagization. Although the size of cultivated plots was not directly measured, Connor and Mtwana (2017) suggest that the absence of villagization promotes the retention and access to agricultural land which is much bigger in size than displaced households in other areas; (e) many households cultivated an extra plot, 'the amadumbe field', compared to those discussed in the literature which may have increased the value of outputs; or (f) the discrepancies could be related to the different criteria used by each study to calculate the total economic value.

LIVESTOCK

Livestock husbandry and poultry ownership was actively pursued by more than two-thirds of households. Their ownership and production was multi-purpose in character such as a

means of subsistence, the generation of cash income to meet a specific household need or for financial buffering during unfavourable times. Non-owning households still shared in the benefits through gifts of, or cheap access to, milk, meat and manure through kinship and neighbour relations.

A similar proportion of households owned cattle (41%) and goats (52%), although small stock dominated. This is a common feature across many studies (e.g. Dovie et al., 2005; Shackleton et al., 2005; Dovie et al., 2006; Du-Pont et al., 2020) because most households do not have the purchasing power to own large stock (i.e. cattle). Goats, however, are considered cheaper to raise and purchase by resource-limited people (Dovie et al., 2006) and are easily liquidated during times of economic upheaval or to raise funds for particular projects. Yet, in line with other studies (Ainslie, 2002; Beyene et al., 2014; Ncube et al. 2018; Herd-Hoare and Shackleton, 2020), households had a preference for keeping cattle which provided more sustainable cash earnings and savings as well as diverse consumptive outputs.

The widely reported home consumption and trade values of cattle in other studies conducted in customary areas are less than half the value of those generated for Makhasaneni (R56 205±76 231). For example, Herd-Hoare and Shackleton (2020) report the annual, gross value of cattle outputs amongst cattle owning households to be R7 438±12 168 in a village in the Transkei and Dovie et al. (2005) reported the net home consumption value R7 182 (inflation adjusted) in the Bushbuckridge region of Limpopo. The value of small-stock in Makhasaneni was less than cattle (R12 628±9 621), which is consistent with other studies such as the same study by Shackleton et al. (2005) where goats were less than ten times the value of cattle. After taking into account the input costs, the composite consumptive and trade value across all livestock in owner-user households was R37 823±63 591 per annum. This was more than double the mean cash and subsistence value across all livestock and poultry in a village bordering the Great Fish River Reserve (R15 608) (Du Pont et al., 2020) and almost four times the value in the same study by Herd-Hoare and Shackleton (2020) cited above (R9 753±20 177). According to Shackleton et al. (2001) reasons for the difference in livestock values could be related to a number of factors including agro-ecological conditions, herd sizes, alternative sources of income or a combination of these.

WILD RESOURCES

The use of wild resources was pervasive, with all households utilizing a wide range of products harvested from communal indigenous forests, grazing lands and to a limited extent commercial Mondi plantation to support their nutritional, utilitarian, medicinal and cash income needs. This is a common feature amongst rural households and has been highlighted by numerous

other studies across South Africa (Shackleton et al., 2002; Shackleton and Shackleton, 2004; Shackleton et al., 2007; Thondlana et al., 2012; Mugido and Shackleton, 2017).

The widespread harvest of medicinal plants (92% of households), firewood (89%), poles (76%), and thatch (74%) has been echoed in other studies. For example, Shackleton et al. (2002), in a village in another part of Zululand, found that all households harvested medicinal plants and firewood, 84% poles and thatch (54%). Similarly, Falayi et al. (2019), working in a rural village in the Eastern Cape, found almost all households used firewood, poles (75%), medicinal plants (85%) and almost no households collected thatch.

The collection of resources for consumption and trade contributed R23 638±23 061 to each household per year, with those harvesting a greater number of wild resources generally benefitting from a greater value. This represents a significant contribution to the household economy and considerable savings of scarce resources. Similar to the other land-based livelihood sectors, the value of wild resources was higher than those obtained from other studies in the region such as Mugido and Shackleton (2017) who found the gross, consumptive and trade value to be R3 801±2 749; or KwaJobe, northern Zululand where it was R8 391 (inflation adjusted) per annum for resources consumed directly (Shackleton et al., 2002). Further afield in the Lowveld, Limpopo, the consumption value was R12 611 (inflation adjusted) amongst user households (Dovie et al., 2002) and in a rural village, Gogogo, in the Transkei, the consumptive and trade value was R19 796±R22 959 (inflation adjusted) (Herd-Hoare, 2018). Similarly, these values were over three times the global averaged of environmental income (natural forest and non-forest environmental) at R7 442 or the Africa average at R4 536 per annum (Angelsen et al., 2014) (because these studies occurred over different time periods, values have been adjusted to a common year price). One possible explanation for this high figure could be that most studies, other than Herd-Hoare (2018) and Shackleton et al. (2002), report the home consumption value only, whereas this study reports on the cumulative figure of both direct-use and trade value. A few other possible explanations include that (a) almost all resources were traded to some extent, with established networks for particular products such as thatch, firewood and weaving grass; and (b) the proximity of homesteads to surrounding plantations and indigenous forests may have facilitated easier and more frequent collection of resources.

OUTGROWER TIMBER

Half of all Makhasaneni residents were involved in the small-scale timber industry. Those involved, formed part of some 12 000 smallholder tree growers in outgrower schemes on approximately 27 000 hectares of land across South Africa (Mayers and Vermeulen, 2002). Although a few growers still belonged to the Mondi outgrower scheme, Khulanathi (one of three

schemes in the area), the majority considered themselves independent growers who negotiated with other larger growers to sell their timber. Ultimately, timber from both Khulanathi and independent growers in the greater Zululand area were received at the Mondi factory in Richards Bay where, according to Mayers and Vermeulen (2002), they provide 10% of the company's mill throughput. This generates the fibre that would be unavailable due to land tenure constraints and in this sense contributes to the volume of production required to reach economies of scale.

In their analysis of the characteristics of growers and non-grower households in Khulanathi, Cairns (2000) found that there were two broad categories of owners: the first had large land holdings and were wealthy in traditional ways (i.e. large land holdings with labour to produce cash crops, relatively large cattle herds and had been in the area for a long time). These households had no formal source of cash income with many unemployed adults at home. The second, were pensioners with smaller land holdings than the first and were likely to be a member of the Tribal Authority. In contrast, non-growers had smaller land holdings, including a recent move to the area, and the household head was involved in non-formal employment. These factors are broadly reflected in Makhasaneni, with growers tending to have inherited old fields or plantations from their forefathers and non-growers citing poor returns of production or lack of access to land as factors for lack of involvement in the industry.

The net economic benefits, roughly R7 650±8 628 per year, were the lowest contribution to land-based livelihoods in Makhasaneni. This is much lower than Cairns (2000) who found that average net profits on Khulanathi plantations (roughly 1.5ha) could range from R21 000-R72 000 (adjusted for inflation) per grower. This is likely because (a) outgrowers in Makhasaneni typically operated through contractors who retained the lion's share of the profit and therefore when interviewed, households were only able to record the price the landholder received and (b) Sappi's official recommendation is that the minimum size of the land should be at least 5 ha to make small-scale timber viable, which is double the average size in Makhasaneni (Mahlangu and Mubangizi, 2015).

For many households in Makhasaneni, the small-scale timber industry was viewed as a welcome contribution to the household income portfolio but could not be relied upon as mainstay income. This was echoed by others, such as Mayers and Vermeulen (2002) who indicated that the small-scale timber industry contributed "about 20% of the income needed to be just above the national 'abject poverty line' but they were yet to take the household out of poverty". Further, Cairns (2000) highlighted that the schemes contribute to household income, but they do not take households out of poverty. Nevertheless, the small-scale timber industry contributes to the village economy and benefits non-landowners through employment such as weeding, harvesting or transport contractors to the plantations owners.

INTANGIBLE

Although almost all households in Makhasaneni were engaged in some degree of land-based livelihood activities, the degree of reliance on the land had decreased over time. Yet, an agrarian culture endured and had firmly been embedded in local identity. For example, for many households growing something was important to the production of "Zulu identity" and was described by informants as a traditional activity tied up in a rural way of life. Tefry et al. (2014) reported similar sentiments in the Eastern Cape, where respondents identified that the act of gardening and farming supported their sense of identity and self. Calvet-Mir et al. (2012), working to understand the contribution of home gardens to residents in Vall Fosca in North-eastern Spain, found that home gardens were valued most as a component of cultural heritage. Similarly, Masterson (2016) working in a study focused on place meaning within the landscape found that a large part of people's attachment to home was related to its agricultural character and the perceived independence that it offers. This was echoed by participants in Makhasaneni who valued the land for its ability to produce and the independence it provided. Connor and Mtwana (2017: 82) added to this by highlighting that cultivation was particularly important for defining the cultural position of women as the owners of cultivated plots which in turn maintains household integrity "and the predilection towards building the homestead".

In contrast, the role of livestock was a male dominated activity which affirmed masculinity and accrued prestige. The role of livestock was also tightly bound in a nexus of traditional functions (Adeyemo and Silas, 2020; Hebinck et al. 2018; Swanepoel et al., 2002). For example, Hornby and Cousins (2019: 203), drawing on a case of the Besters Land Reform Project, showed that the land and livestock were not only valued for their physical outputs but also for their role in (re)making the social conditions of the household. Cattle, for example, are used in multi-day ceremonies that occur in specific spaces and bring together families and communities, and "make the land constitutive of identity and belonging".

Yet, the landscape units that residents derived land-based livelihood functions from do not exist as separate but rather integrated entities. Together they contribute to and shape the landscape which not only provides resources for local livelihoods but form a culturally significant landscape which promotes a sense of place and identity (Le Maitre et al., 2007; Voora and Barg, 2008; Brown and Neil, 2011).

For many the landscape provided a home. Home was referred to interchangeably as one's specific residential site and the entire landscape. The latter was formed through the day-to-day processes of emplacement within both the physical and social environments. For example, Njwambe et al. (2019), in exploring the relationship that migrants have with 'home', found

that childhood experiences in nature, especially rivers and forests, and the sensory and spiritual dimensions of home remain key to their attachment. Much like in Makhasaneni, respondents identified that spiritual attachment is linked to specific places via the presence of ancestral spirits. And the antecedent was more than just buildings, they were sites where people ate, lived, received members of the family who returned from the city and hosted guests (Shackleton et al., 2019). The mix of significant traditional elements of home, such as the kraal and kwaGogo, facilitate this feeling of ‘being home’. The literature on the religious meaning of the home and place also highlights the significance of the natural environment and rekindling one’s childhood (Basso, 1996).



6. CONCLUSION

This report has provided empirical evidence to support that arable agriculture, livestock husbandry, non-timber forest products and outgrower timber production make measurable contributions to rural livelihoods in Makhasaneni. The cumulative value of these land-based livelihood activities (R96 647±87 833) surpassed off-farm (R32 716±47 241) and grant (R27 551±20 830) income, representing the highest contributing sector to the overall livelihood portfolio (58%±24). When distilled, there were differences in the amounts consumed, frequency of harvest and the gross consumptive and trade values of each land-based sector. Non-timber forest products was the most participated in sector (all households), while arable agriculture was the highest contributor (44%±28 of land-based income sector). Outgrower timber production was the least participated in sector, with only half of all households in the sample, and the lowest contributing sector (0%±2). The analysis of land-based livelihoods at the local level indicated that they were not just strategies of survival or self-sufficiency in the economic sense, but also related to issues of cultural identity. The continual investment into and development of what were described as ‘traditional activities’, such as the purchase or sale of livestock, the change of land-use categories from grazing land to outgrower forestry, and investment of time and labour into cultivated plots, etc., suggested an enduring dependence on the land which were essential to their agrarian identity- an essential element of being a rural inhabitant.



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