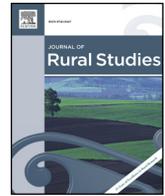




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Yearning to farm – Youth, agricultural intensification and land in Mkushi, Zambia

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1. Introduction

Over the past couple of decades smallholder-based agriculture has been the dominant development model for many parts of rural Africa. The publication of the World Bank's flagship report, *Agriculture for Development in 2007* (World Bank, 2007), renewed interest among policy makers and donors in family-based agriculture as the source of broad based productivity increases and economic growth, following on earlier pledges from the Maputo Declaration to allot at least 10% of public expenditure to agriculture. The underpinning logic of the model rests on the presumption that small scale farmers, if given the right technology and the correct market incentives can intensify (raise agricultural productivity) as well as commercialize their production. Inspired by the poverty reduction following from the Asian Green Revolution, but also increasingly weary of the social and environmental costs of this, policy makers have more recently turned to the concept of sustainable agricultural intensification. From a social sustainability perspective, ensuring the participation of “vulnerable groups” in processes of agricultural intensification has become central to policies building on the smallholder model, while rising productivity is also increasingly seen as a potential outcome of improving such participation. The empowerment of women and girls was presented as a source of latent intensification potential in the FAO (2011) *Closing the gender gap in agriculture* for instance. More recently youth have been identified as another vulnerable group whose improved access to agrarian resources could not only increase productivity, but also keep youth in agriculture (and importantly the rural areas) (IFAD, 2011), rather than boost the informal sector in burgeoning urban centres, effectively killing at least three birds with the same stone (see Anyidoho et al., 2012; IFAD, 2011 for a problematization of policy narratives around youth). Despite this increasing policy interest, as noted by Sumberg et al. (2012) there is a dearth of empirical studies on youth and agriculture.

The definition of youth varies globally, however, with for instance, the UN defining youth as an individual aged 15 to 24, while the African Union Commission uses the ages 15 to 35, with Zambia adhering to this

latter definition. The literature generally considers youth (however defined) to be vulnerable in an agrarian context where rights to land and water may be curtailed by older generations. Classical sociological perspectives point to smaller household sizes, lower skills and lacking capital as an explanation for poorer productivity among younger households, when compared with the middle-aged demographic (Chaianov, 1986).

The practical outcomes of this rising interest in socially sustainable agriculture, revolve around targeting particular groups with subsidised farm inputs and programmes, rather than redressing structural imbalances in access to resources, however. In the case of Zambia, the state targets youth headed households as recipients of subsidy vouchers which can be redeemed to buy farm inputs and implements from selected agro-dealers. Not all youth can access such vouchers, however, since eligibility involves joining a youth association. While youth heading their own households are targeted through subsidised farm inputs, many youth do not head their own households, however, but rather live in households headed by older family members. As such, they largely fall outside the scope of agricultural policies. In what follows we will consider both groups – youth headed households as well as youth living in households headed by older household members.

The aim of this article is to problematize the positionality of youth with respect to agricultural livelihoods hence contributing to the theoretical as well as policy-based debates surrounding the potential role of youth in processes of agricultural intensification in sub-Saharan Africa. Drawing on a mixed-methods, longitudinal approach this paper explores a number of research questions in the context of Mkushi District in Central Province, Zambia. Firstly, using quantitative data covering the period 2000 to 2017 we consider trends in maize yields to assess whether agricultural intensification has occurred and whether there are demographic differences with respect to such trends, related to the age of the farm manager. Secondly, we analyse the prospects for youth to participate in intensification more broadly speaking, looking at youth headed households' access to key agricultural resources compared with other age groups. Thirdly, using qualitative interviews with 27 youth living in households headed by older family members, we

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discuss how youth are situated with respect to agriculture and how this is affected by their position within these households and the household units themselves. Fourthly, we discuss the future aspirations of youth with respect to agriculture and the implications that this hold for policies. We conclude by reflecting on the limitations of policies that address youth as an age group, rather than a status – as non-adults and discuss the theoretical implications of the findings.

2. Background – youth and agriculture in Zambia

Zambia has a young population: 45.4% is under the age of 15, and 82.1% is under the age of 35, which puts 36.7% of the population in the 15–35 age bracket. Annual population growth is 2.8% (Central Statistical Office, 2012) which means that the population will double in 25 years. A majority (60.5%) of the Zambian population lives in rural areas. Challenges of absorbing youth into satisfactory and sustainable employment are concerns placed high on the political agenda, and agriculture is perceived to play a key role in this respect. Inadequate schooling and lacking income opportunities provide obstacles to the transition to adulthood, independence and family formation for youth. In rural areas, youth are largely perceived to be engaged in farming while waiting for other opportunities to emerge (Locke and Te Lintelo, 2012).

The National Youth Policy was launched in 2015 in response to the socio-economic challenges facing youth. Mindful of the large share of population that youth constitute, the policy stresses the potential of youth as contributors to sustainable national development. Inclusivity – providing youth with equal opportunities – is considered the starting point for unleashing this potential. Examples include the setting up of a Youth Development Fund, to encourage the establishment of small and medium scale enterprises by youth, and transport initiatives geared specifically towards youth, for instance loans for motorized tricycles. The policy identifies a total of 16 target groups, including, rural youth and youth heading households. Despite rural youth being one of the prioritized subgroups in the policy, the themes and strategies related to rural youths are limited, however, with broader issues related to rural infrastructure for instance left out.

Agricultural policies, thus may be more relevant for the day-to-day livelihood activities of many rural youth. Historically, Zambian agricultural policy has been preoccupied with providing mines and urban centres with food, through encouraging production and commercialization of maize by creating a dual agrarian structure, combining large-scale commercial estate agriculture dominated by a small white elite, with smallholder agriculture. State involvement in the sector is strong, both in input and output markets. In the latter case, the Food Reserve Agency (FRA) established in 1995, geographically targets strategic maize producing regions through providing above market prices for smallholder farmers. The FRA contributes a large market for small scale farmers, with Mason and Myers (2013) documenting procurement of between 30 and 86% between the 2004/05 and 2010/11 growing seasons for this segment of producers. The role of the state as a buyer has increased over time since the mid-1990s. Despite this expansion, however delays in payments in practice discriminates against vulnerable farmers who are unable to wait for the above market prices offered by the agency and as such segments the output market for maize (Andersson Djurfeldt and Hillbom, 2016).

State intervention in the input markets for smallholders revolves around subsidizing farm inputs, especially inorganic fertilizers and seeds, and more recently also farm implements. Such interventions were resurrected following the end of the structural adjustment era and have been in place in various guises since the 1997/8 growing season when the Fertilizer Credit Program was introduced, targeting specific groups of farmers and areas. The programme – renamed the Farmers Input Support Program (FISP) in 2009, has increased its geographical reach and by the 2012/2013 growing season had 900 000 recipients (Ricker-Gilbert et al., 2013). In the 2015/2016 growing season a pilot

programme using Electronic Vouchers has been targeting roughly 241 000 beneficiaries in Lusaka, Southern and Central provinces, extending the subsidy scheme beyond seed and fertilizers to livestock feed, agro-chemicals and farm implements. While the scope of the FISP has been broadened both geographically and qualitatively, the smallholder focus of the programme has been debated. Subsidies are accessed through registered co-operatives, women's clubs and youth associations, requiring formalization and membership fees that are beyond poorer households, while the programme formally omits farmers holding less than 0.5 ha of land. In practice, between 15 and 20% of smallholders are therefore prevented *a priori* from accessing subsidised inputs through FISP (Sitko and Jayne, 2014).

3. Theoretical perspectives on generation and intensification

Classical sociological perspectives on family farming revolve around the unique nature of the family as the farming unit as a competitive advantage against capitalist farming models and their reliance on waged labour (Chaianov, 1986; Djurfeldt, 1994). The possibility for family farms to rely on essentially non-remunerated labour for agricultural production, relates to the intersection between the units of production and consumption and the common interest of family members in enhancing the productivity of the household as a whole (Chaianov, 1986). In the context of family-based farming, larger households are hence at an advantage, especially when mechanization is low, alternative sources of employment are lacking and farm inputs are scarce, since this means that productivity is strongly affected by availability of family labour. Life-cycle aspects affect the demography of a household strongly, with young and old households generally having poorer access to labour. In the case of young households, dependency ratios are high, while labour also needs to be deployed outside agriculture to secure the welfare of children. For households with aged household members, labour productivity is affected by old age and as such is expected to be lower (Djurfeldt, 1994).

The notion of the household as an institution united by a common goal – has been proposed both by Chaianov, as well as the neo-classical school of new household economics (Becker, 1981). This unitary view of the household has been questioned based on research in the field of feminist economics, which suggests that productivity differentials vary *within* households, with women for instance having higher productivity on their own fields than their husband's (Udry, 1996). Intra-household studies of productivity based on generation, are however generally lacking. Moreover, household structures vary widely across Africa. Traditionally affected by institutional and cultural aspects related to tenure systems and geography, households need to be situated in the context of broader extended family relations (Adepoju, 2006; Andersson, 2002; Andersson Djurfeldt, 2012, 2014; Guyer, 1981; Peters, 2019) that compensate for missing social welfare functions for instance.

Despite these reservations, the age of households is generally considered a strong determinant of agricultural productivity as the household over time is able to amass not only labour resources, but also other types of assets that affect production. Land is perhaps the most apparent of these, with the literature suggesting that younger households have poorer access to land as well as weaker rights to land. As noted by White (2012), in traditional societies, children who expressed an interest in farming were allotted family land by parents or other older relatives to farm for themselves. As pressure on land has increased, related both to external interests, for instance large scale foreign land acquisitions, as well as rising population pressure and the growing commodification and commercialization of agriculture, the generational conflict over land has grown in the context of gerontocratic and patriarchal rural societies, where control over land provides opportunities for raising incomes. White (2012) provides examples from different parts of Africa of how community elders rent communal land to external parties rather than allow youth to establish their own

households, effectively preventing participation in agriculture as well as a transitioning to adulthood among young men especially.

Sumberg and Okali (2013) and Sumberg et al. (2012:5) move beyond the specifics of land constraints, taking a broader perspective on the opportunities and challenges facing young people and use the concept of “opportunity space” to delineate “the spatial and temporal distribution of the universe of more or less viable options that a young person may exploit as she/he attempts to establish an independent life. The opportunity space for a situated young person is a function of: global, national and regional factors including institutions, policy and demand; place; and social and cultural norms”. The authors distinguish between distant and near opportunity spaces with the latter constituting specific contexts in which individual youth live, whereas the former encompasses opportunities available through migration. At the core of the concept is the notion of independence: establishing a livelihood of one's own is also dependent on the attitude and interests of the individual.

While the literature details the demographic differences in access to labour as well as land, perspectives on labour tend to focus on *the household* as the study unit (comparing young households with more established, older households), while perspectives stressing structural conditions and opportunity spaces can be used to consider the obstacles faced by youth as a group and individually in actually *establishing a household*. Here, the acknowledgement of variability in household typologies and functions is an important nuance that can be used to consider how opportunity spaces are affected by the relative positionality of a young person *within* a household.

Returning to the case at hand, the question may be asked, therefore if productivity and access to resources other than labour vary at the household level depending on the age of the household head. A complementary question concerns the position of youth in households headed by more senior family members and if and how they are prevented from participating in agriculture as a result of tenure systems and power relations embedded in gerontocratic and patriarchal social structures and norms, but also through the control exercised by the family over young individuals.

4. Research design, methodology and study area

To address these questions, we use a combination of methods building on and complementing earlier quantitative and qualitative fieldwork carried out in Mkushi region, Zambia, since 2002. While the quantitative data is used to document the differences in productivity and quantifiable assets, such as land and labour resources between households in different existing demographic groups, the qualitative data explores the prospects for entering agriculture and setting up households for those youth who have not yet done so.

4.1. Quantitative data

To identify differences in intensification and intensification potential between households we use a sub-sample of a quantitative dataset – the Afrint dataset, which has been collected in three African countries – Malawi, Tanzania and Zambia – in four rounds since 2002 (see Andersson Djurfeldt et al., 2018). A multiple stage, purposive sampling strategy has been used, guided by the aim of the original project to understand the prospects for an African Green Revolution. Countries were selected in the African maize and cassava belt and within these countries regions were selected that were above average in terms of agro-ecological potential, but excluding the most spectacular and well-known examples of intensification trajectories, for instance Mount Meru in Tanzania (see Djurfeldt et al., 2005 for the original site selection criteria). Within each region, a number of villages were purposively selected to provide variety in terms of agro-ecology, infrastructure and marketing potential. Within each village in turn, a random sample of farm households has been taken. In the case of

Zambia, two regions – Mazabuka in Southern Province and Mkushi in Central Province - were originally selected and were surveyed in the first three phases of the project, but for financial reasons only Mkushi was surveyed in the final data collection round. Data has been collected in five villages in Mkushi in 2002, 2008, 2013 and 2017. For 2017, 268 farm households were covered by the quantitative dataset. A balanced panel design has been used, where households that were sampled in 2002 have been re-surveyed in subsequent phases of the project. In the case of deceased households, one of the descendants have been interviewed, while households who have left the villages have been replaced by purposively selected households (resembling as closely as possible the original households), sampled from the remainder of the village population. Major changes in the village population, for instance through in-migration have been captured by purposively sampling respondents to take this into consideration. Using longitudinal data means that there is a natural tendency for the share of younger households to shrink as the panel ages.

Data has been collected through administering a survey to the self-identified farm manager, who has been considered to be the most knowledgeable person with respect to the production and resources of the household. Our use of the term farm manager harmonizes with the definition of landholder used by the FAO, as: “The civil or juridical person who makes the major decisions regarding resource use and exercises management control over the agricultural holding operation.” (FAO, 2005). Surveying has been done by the extension agents in the villages in question, which can raise some methodological issues regarding the reporting of extension accessibility, but nonetheless also ensures knowledge of local agro-ecological conditions and existing agricultural techniques on the part of the enumerators.

In the vast majority of cases the farm manager is also the head of household, with the exception being *de facto* female headed households where the farm manager is female and the non-resident household head is male. In the analysis we refer to youth headed households as those households having a farm manager between and including the ages of 18 and 35 years. Interviewing only the farm manager carries some methodological drawbacks – for instance the implicit assumption is that the farm manager is in possession of perfect information, whereas this may not be the case. Moreover, resource access within the household or detailed plot-level data is obscured by this method. For financial reasons, the household was adopted as the study unit in the first data collection round in 2002 and for the sake of consistency we use the same unit of study in all survey rounds, however.

The long-term focus of the project on intensification and agricultural resources makes it possible to trace changes in productivity (as measured through maize yields) as well as access to resources (cultivated area), security of access (decision making regarding land use, land losses, titling, ability to expand cultivated area), demography and access to labour (number of able bodied workers, use of hired labour, use of exchange labour, labour shortages) and access to livestock (tropical livestock units) for different demographic groups over time. Here we divide the sample by the age of the farm manager into three groups: youth, in the age group 18–35 years of age, middle-aged 36–64 years of age, and elderly, those aged 65 years and above.

We use standard ANOVA tests to trace differences between these three age groups in terms of intensification trends and key agrarian resources. We use Tamhane's post hoc test to identify statistically significant differences between the groups in question. While considering youth and gender simultaneously would have provided an intersectional perspective on equity and intensification, the share of youth-headed and female headed households respectively are small, and as such breaking the group of youth-headed households into two groups makes statistical testing impossible. Moreover, this article should be seen as a companion to two other papers written on gender and intensification (Andersson Djurfeldt et al., 2019) and gender and assets (currently being considered for publication) tracing trends for the three countries covered by the study.

The sample for 2017 contains a total of 268 households, 23 (8.6%) were headed by youth (varying in age between and including 18 to 35 years). The brunt of households is found in the 36 to 64 age group, with 176 households (65.7%), whereas the elderly (65 years and above) constitute 25.7% of the sample (69 households). The aging of the panel is apparent in the shifting shares of the different age groups, with youth-headed households constituting around 40% of the surveyed households in 2002.

4.2. Qualitative data

To complement the quantitative data, we have also collected qualitative data, primarily in the form of individual interviews with youth and group interviews at the community level in three of the study sites. Qualitative data collection on gender relations have been carried out in these sites over several years. The villages were originally selected based on trends in the quantitative data suggesting falling poverty and growing agricultural commercialization, with the aim of an earlier project being to analyse the gender dynamics of such processes (Andersson Djurfeldt, 2013). Data from two of the sites have been presented in another publication, using the pseudonymized village names of Chikantaka and Mkwezi (Andersson Djurfeldt and Hillbom, 2016). The villages may be subject to a positive selection bias, since they have been sampled to shed light on growth dynamics, but to provide continuity, the same villages were visited in September and October of 2018. Youth were sampled who lived in households headed by respondents who were part of the quantitative sample. In total 27 youth – 13 women and 14 men – were interviewed across the three villages. In addition, two gender separated focus group discussions were carried out with youth in each village and one focus group covering the youth association in each village was also organised. Data from two earlier rounds of data collection, has been used as background data. The first one took place in August of 2017, when meso-level interviews were carried out in all five villages in Mkushi focusing on gender, youth and prospects for agricultural intensification. Subsequently, a study visit was carried out in two of the communities in July of 2018. The data from these is not analysed per se in the present article. Thematic analysis was used to analyse the qualitative data.

4.3. Mkushi region

Mkushi region constitutes one of the grain baskets in Zambia and with more than 1000 mm annual rainfall is considered to provide optimal production conditions for maize (Smale et al., 2013). Maize dominates cropping patterns, but in recent years soybean has provided an alternative cash crop. The erstwhile colonial authorities started promoting the area as a commercial farming block for white farmers in 1950. Since independence, other white farmers, mainly from Zimbabwe and South Africa have also been attracted to the area and more recently farming corporations have also established themselves in the area (Matenga and Hichaambwa, 2017). The presence of large scale commercial farming in the area, provides access to hybrid maize seeds produced on these farms (Smale et al., 2013) as well as a marketing outlet for soybeans. Moreover, casual labour employment opportunities on commercial farms provide the possibility of earning incomes outside the village, although Matenga and Hichambwaa (2017), show that this type of work is not connected to improvements in food security or livelihoods more generally.

Conservation farming was introduced in some of the villages in 2010, through the work of an NGO, the Conservation Farming Unit, but by the time of the interviews in 2018, respondents reported that the CFU was no longer active in the communities. Nonetheless, conservation farming, through the construction of basins, was widely considered to have improved yields especially during earlier rounds of qualitative data collection (in 2013), but the practice was reported to have been discontinued between 2013 and 2018 at least in one of the villages.

Marketing infrastructure has gradually expanded in the villages through the establishment of FRA depots for maize purchases.

Land tenure systems are mixed: in some villages matrilineal tenure is practised in others patrilineal tenure is predominant and in yet others there is a mix of the two systems. On the whole though, tenure rights are formalized and generally secure at the individual level. Growing pressure on land has been noted in interviews as well as in the literature (Matenga and Hichaambwa, 2017) for a region that has long been land abundant. Rapid in-migration, population growth and increasing commercial interests in land by large-scale, white commercial farmers are gradually closing the land frontier.

5. A household comparison – youth headed households compared with other households

Returning now to the research questions posed in the introduction we begin by discussing intensification patterns over time and how these have affected different groups of farmers, based on the age of the farm manager. Following this analysis of intensification processes we turn to a discussion of the most important agricultural assets, land, labour and livestock departing from the same perspective. The expectations raised by the theoretical literature are unequivocal: productivity is expected to be lower among youth headed households (and as such intensification as expressed in yields should be lower), while access to resources, especially land and labour should be poorer and rights to land should be weaker.

5.1. Intensification and generation – longitudinal perspectives

Household data on the major grain staples (rice, maize and sorghum) have been collected since 2002. By asking the farm manager to specify total household production for the most recent agricultural season as well as the two previous seasons, it is possible to reduce inter-seasonal variability in yields. For Mkushi – one of Zambia's grain baskets – maize is the relevant crop to consider. Indeed, in 2017 only three farmers (1.1%) did not produce any maize at all. The share of maize farmers has increased over time – in 2002, 79.7% of the households reported growing maize.

As suggested by Fig. 1, the trend in yields overall is such that they have nearly doubled since the first data collection round for all three demographic groups. Moreover, as shown in another paper, for the sample as a whole these increases are strongly statistically significant (see Andersson Djurfeldt et al., 2019). At an overarching level these trends appear to be related to the expansion of the subsidy programme, both in terms of beneficiaries as well as eligible inputs. While the prices offered by the FRA have fluctuated, demand for maize from the DRC has added to commercial incentives (Andersson Djurfeldt and Hillbom, 2016).

The data presented in Fig. 1 shows that youth-headed households have benefited from these changes – there are no statistically significant differences between the households based on the age of the farm manager for any of the years. The major conduits for reaching youth with subsidised inputs and information appear therefore to have been successful in ensuring participation in productivity gains.

5.2. Cultivated farm size, rights to land and tenure security

While intensification processes therefore were generation neutral, the question can be posed whether changes have occurred in access to land over time. As commercialization has made land more valuable the expectation is that weaker groups, such as youth generally loose out. Fig. 2 shows the evolution of mean cultivated area for the three age groups over time.

Interestingly, mean cultivated area dropped for all three groups between the first and second round of data collection, but increased for the third round for two of the groups, while stagnating for the youth

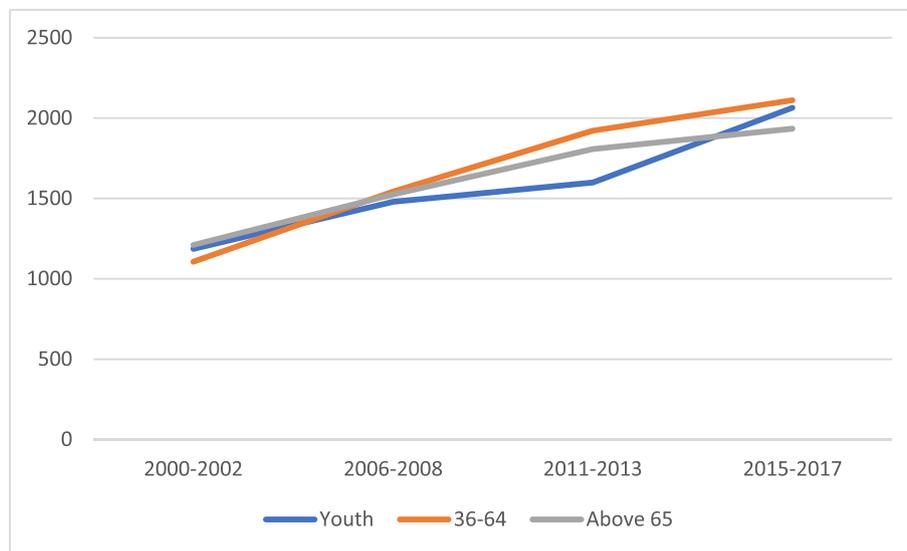


Fig. 1. Maize yields (kg/ha), three year averages per age group over time. Extreme cases have been removed for the final variable, area has been pruned at 0.1 ha when calculating the yields.

headed households. By the time of the final round of data collection, mean cultivated area was again converging between the three groups. The only significant difference in mean cultivated area is found between youth and the 36–64 age group for the third data collection round (2012), suggesting that differences are small between the groups. The general drop in farm size appears in part to be related to a labour shortage. In the qualitative interviews the inability to make use of available land was often commented on, while youth suggested that they could not engage in casual labour on other farms since their labour was needed on the family farms. Meanwhile, opportunities for engaging in piece work have opened up on nearby commercial farms run by white farmers, hence draining the villages of casual labour. This interpretation is supported also by data on the possibilities of farm expansion: 82% of the farmers stated that they would be able to expand their farm size if market conditions improved, with no significant differences between the age groups.

In terms of tenure structures and control over land, there were no significant differences between the age groups, with land security being generally strong: 95% of the respondents stated that they exercised full control over the use of their land and less than 1% of the sample had

lost land that they considered to be theirs. Tenure relations are highly formalized, with 75% of the households holding formal title or registration to their land, again with no statistically significant differences between the age groups. Very few households, and none of the youth-headed households rent land.

5.3. Labour and technology use

As theory would lead us to expect, access to labour varies strongly depending on the age of the farm manager: on average youth headed households held 2.65 able bodied workers, while the middle age group had nearly two persons more, or 4.55 workers. Finally, households with the eldest heads had 3.79 able bodied workers on average. The difference between the youth and the middle group was strongly significant (at the 0.01% level), but also the difference between the youth and the households headed by farm managers aged 65 or above was highly significant (at the 1% level). Intuitively, the more well-positioned, established households could widen this gap in labour resources further by hiring more labour than the younger households or engaging in exchange labour, but there were no differences between the age groups

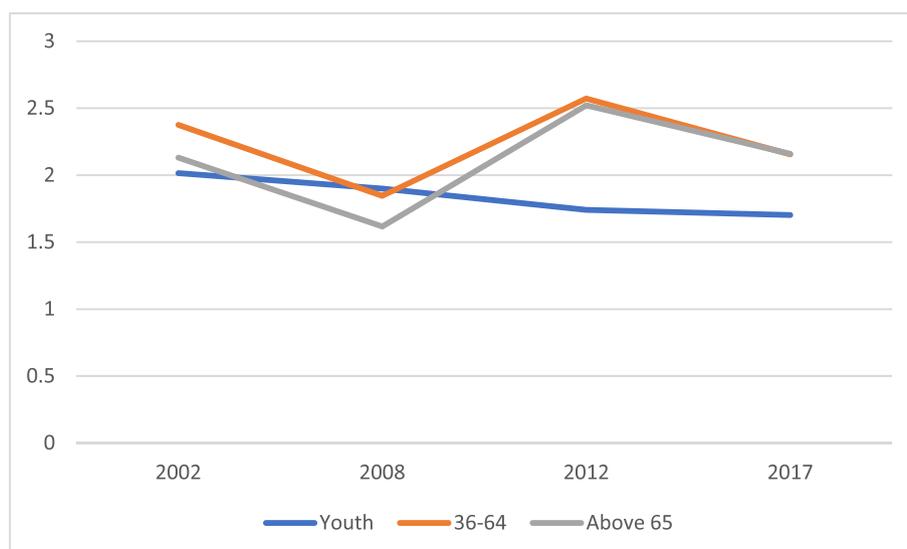


Fig. 2. Mean cultivated area by age group over time (ha). Extreme cases have been removed at the regional level.

in this respect: on average 24% of the farmers reported hiring labour on a regular basis, and only 12% participated in labour exchanges. Interestingly, there were no significant differences between the three groups in terms of perceived labour shortages over the past year, but here the small sample sizes may be affecting the statistical tests: 61% of the youth headed households reported labour shortages compared with 41% for the middle age group, who had the largest number of able-bodied workers, but the difference is not statistically significant. Since productivity (as measured in maize yields) was the same for all three groups and farm sizes were also similar, it appears therefore that younger households have higher labour productivity compared with the more established, but older households¹. Youth-headed households have also been targeted as recipients of seed fertilizer technology and through extension programmes and as such could have higher access to technology.

Here the youth divert positively from the other age groups: all of the youth headed households who grew maize reported using improved maize seeds, compared with 96% of the middle age group and 86% for the oldest households, differences that were significant at the 5% and 1% levels respectively. Fertilizer use was however nearly universal 94% with no differences between the age groups and 35% of the respondents stating that they had increased their use of fertilizer since the previous round of data collection. There were no differences in land preparation or pesticide use on maize between the age groups, either.

Using technology to successfully intensify is skills intensive, especially for new technologies, such as conservation farming that has been introduced in the villages during the past ten years. Accessing extension services to hone such skills requires interest on the parts of the recipients as well as accessibility on the part of the services. Here, the difference between the youth-headed households and the oldest households is striking: 83% of the youth headed households reported receiving regular extension advice from government staff, compared with only 51% of the households whose heads were aged 65 years or above, a difference that was strongly significant at the 1% level. Among the middle age group an average of 70% of the farm managers stated that they received government extension on a regular basis, but this difference was not statistically significant when compared with the youth-headed households. Extension services provided by NGOs were less discriminating: on average these were received regularly by 38% of the farmers, but with no differences between the age groups.

5.4. Livestock

Livestock are important as they are necessary for land preparation through ploughing and as such can raise land productivity considerably. In an accompanying paper we have shown how lack of access to livestock and the inability to hire livestock at the right time perpetuates a gender gap in yields between male and female headed households (see Andersson Djurfeldt et al., 2019). Livestock serve several purposes in a rural African setting: on the one hand they provide draught power and access to animal source foods, but on the other they may also be an important store of value, in the context of underdeveloped banking systems. Livestock can be used as an informal type of insurance, with livestock sales providing easily realisable cash for emergencies. The expectation would be that livestock is accumulated over time by established households who can build herds as a method of enhancing their savings. This expectation is reflected also in the

¹ A possible explanation for this difference could have been engagement in the nonfarm sector by the other two age groups, i.e. the use of family labour outside agriculture by larger households would mean that productivity within agriculture is the same, but the data show no significant differences between the different demographic groups in terms of diversification outside agriculture, supporting the notion that labour productivity within agriculture among youth-headed households is higher than for the other two demographic groups.

dataset: on average the youth headed households held 0.89 tropical livestock units compared with 2.70 units for the middle age group, and 1.89 for the eldest households. The difference is only statistically significant (at the 5% level) between the first two groups, however. This discrepancy is not reflected in a similar difference in land preparation methods, however – on average 43% of the maize farmers used a plough or a tractor for land preparation, suggesting that youth headed households were able to hire oxen for land preparation. In turn, this implies that age-based discrimination, and possibilities of participating in processes of intensification were less forthcoming than biases based on gender.

Summing up the data on youth-headed households so far suggests that this group has both participated in and benefited from intensification processes in maize – the major staple in the Mkushi region and the largest commercial crop. State policies and extension services geared towards raising productivity and commercialization in maize therefore appear to have been successful in reaching youth headed households. Land rights do not discriminate against youth headed households in general. To the extent that there are differences between the youth headed households and the more established households headed by older farmers, they revolve mainly around labour resources, and primarily around family labour, where the larger family sizes of older households explain the discrepancy in access to labour. Since the yields (the land productivity) for all age groups are the same, this suggests that the labour productivity of younger households is higher – a situation that seems to be explained by higher use of improved seeds and more regular use of government extension services. For youth heading their own households – a situation enabled by controlling and accessing land – hence the foothold in agriculture in general is not different from other household heads, with the exception of labour resources.

6. Youth living in households headed by older family members

For youth in households headed by older family members the situation is likely to be different from youth that have been able to independently set up their own households, establish families and transition into adulthood. The lack of opportunities to earn an income and to independently participate in agriculture may differ between the two groups of youth, but they may also be united by common generational interests. Using data from 27 qualitative interviews with youth living in households headed by older family members, we discuss differences in positionality within the households as well as in relation to agriculture. Life-cycle aspects come out as a strong explanation for the degree to which youth can participate in agriculture, when youth heading their own households are compared with youth in households headed by other family members. Nonetheless even within this latter group there are substantial differences.

Differences in positionality

As noted in the theoretical section, households and families vary vastly across Africa, seldomly adhering to the mould of the nuclear household proposed by the new household school of economics. Even within a limited geographical context such as the three study sites, there is a great deal of variation as well, with the role of youth in decision-making and agricultural production varying strongly depending on the household type. Existing theoretical perspectives on youth and agriculture do not consider such household level variation specifically and how positionality within households and particular household types affect the opportunities available to young people. Here our findings provide a possibility for theorizing the concept of opportunity space further. We identify four different household typologies that strongly affect the opportunity spaces of youth living within households headed by more senior family members. In turn, these household constellations have a crucial impact on the relationship between youth and

opportunities *outside* the household, for instance in relation to agriculture.

The first and most common typology covers youth who farm together with their parents, without access to land of their own. As such their labour contribution is used for the common good of the household: production decisions are made primarily by their parents and proceeds from the marketing of agricultural goods are kept by their parents. As children age they may become more involved in production and spending decisions, however. Independent sources of income are few for these youth and come primarily through the non-farm sector, where selling of casual labour is done to raise independent incomes for personal needs, or through charcoal burning. The latter is a highly labour-intensive pursuit, but has low barriers to entry and is engaged in by young men. The only on-farm on-f source of independent income for youth living in these households is raising of chicken (a small number), where the understanding is that all children can keep income raised in this way for themselves. Young single mothers who stay on their relative's land or with their birth families are a particularly vulnerable group of youth in this situation. These women are often placed at the mercy of their relatives and combine piece work as casual farm labourers with farming to support themselves and their children. Often, they contribute to the household by providing their labour in return for support from their parents and as such they lack an independent foothold in agriculture.

A second type of household consists of youth, especially young, unmarried men who stay with their widowed or separated mothers to support the family. They farm the family land and look after their parents and raise school fees for their younger siblings. They are the *de facto* farm manager and make all the farm and marketing decisions and take on the role of the main household provider. Their position in agriculture hence is not reliant on the goodwill of the older generation, rather they are the main decisionmakers, as such they are in practice heading their households, even if they have not married or established an independent household of their own.

Yet another variety of positionality involves young men and their wives who live in extended, multi-generational families, where they together with their children constitute the middle segment of these families. They have been allocated family land by their parents and farm independently but continue to live close to the parental generation and view the patriarch as the household head, even if he is not involved in any of their production or marketing decisions and they are not accountable to him in terms of incomes raised and saved. In effect, these young men have established their own independent households, and constitute a household within a larger family. While the informal control over this household may be considerable, their position in agriculture and their access to agrarian resources is also strengthened by the size of the family itself.

A handful of respondents were also single, unmarried men who had been allocated land by their parents and continued living with their parents, but were farming independently and were not accountable to their parents. Their access to agrarian resources was strong and they were able to raise an independent income from agriculture and can perhaps best be described as waiting to establish their own households by marrying and setting up an independent family of their own – eventually to evolve into the middle generation in an extended, multi-generational family.

7. The crucial role of land in transitioning to adulthood

Data from the qualitative group interviews with youth as well as youth organizations in the study sites details the crucial role of land in agricultural participation in general, but for transitioning into adulthood and setting up an independent household in particular. Studying only youth-headed households who have made this transition gives the impression of few structural constraints to land access, since they constitute the segment of youth for whom this transition has already

occurred. Theoretical perspectives on land accessibility suggest that the land rights of vulnerable groups such as youth are weakened in situations of growing land scarcity (White, 2012). The data suggest, however that for the youth living in households headed by other family members, this situation may apply even in a context of relative land abundance, as is the case in Mkushi.

The group interviews point to a number of processes through which young people can attain land. Small plots of family land may be allocated by the household head for personal use (as has been the tradition in many farm societies), although the person in question continues to live with the family and participate in the farming of family land. None of the youth reported having land of this kind, however. Instead inheriting or being given land by their parents to independently set up their farms and households was the channel through which most young males especially access land. Another means involved engaging in piece work in urban areas or casual labour on the white commercial farms and using the proceeds to buy land directly from the chief, or from households who were leaving the villages. A final way of attaining land, especially for women, although not mentioned in the interviews is through marriage.

Several obstacles exist to most of these channels of accessing land, however. Growing demand for land – both internally as population densities are rising, as well as increasing external pressure on land through in-migration and large scale commercial farming interests is heightening the potential for generational conflicts over land. The lack of land among the parental generation, was mentioned as one obvious limitation to allocating land to one's children. Parental control over family land in combination with growing commercial interest in land also opened up new income earning opportunities for older generations as parents were reported to be selling parts of their land to white, commercial farmers from Mkushi farm block.

Parent's control over land also enabled indirectly controlling the transitioning into adulthood of their children, however. Reluctance to allocate land to their children was related to the perception that the land would be underutilized, since the younger generation lacked capital for farm inputs and implements. Alcoholism among youth was also mentioned as a reason not to allocate land, as it was likely to be sold to finance addiction. Finally, respondents in the group interviews also argued that parents would defer from allocating land to ensure their children's caretaking of them, by preventing them from setting up independent livelihoods.

8. Perceptions of youth and perceptions of the future

While theoretical perspectives on age and agriculture essentially focus on the relative shortfalls of younger households in terms of productivity and access to major agrarian resources, an empirical body of literature stresses the growing disenchantment of young people with agriculture (and by implication the problems this poses in the context of poorly developed non-farm opportunities). Politically, keeping youth in agriculture through ensuring their opportunities to earn a living from agriculture may be as important as convincing youth that there is indeed a future in agriculture. How agriculture is perceived by youth themselves adds important nuances to perspectives that consider how youth are kept out of agriculture by elderly gatekeepers.

As noted by Leavy and Hossain (2014) aspirations are contextualized by the opportunity spaces of young people. Such aspirations are also affected by the perceptions that others have of young people. Common to all qualitative interviews was the notion that the view of youth is strongly polarized within the villages: on the one hand youth are strong, capable, hardworking and eager to improve their livelihoods and their farms, on the other they are dismissed as disrespectful drunkards, prostitutes and thieves. The problem of lacking employment opportunities outside agriculture -and the related social ills of boredom and alcoholism among youth was raised repeatedly in interviews. As noted by one respondent, a young man living in a large extended

household and farming together with his parents:

“It is good [to be young in this village] because this is the stage when we get to learn and know a lot of things, how to be productive, how to become independent, how life can be tough because it looks simple when our parents are the ones that are providing. It depends on how someone is brought up; others are drunkards and others are productive, and that is how a youth can be viewed by people, whether the youth is responsible in life or just playful”

Furthering one's education was the priority of many of the interviewees and setting up small businesses – such as shops, fish trading or trading in used clothes were the future aspirations of many of the respondents. Still, their livelihoods are highly embedded in agriculture, and in the village – only one respondent mentioned leaving agriculture altogether to leave for Lusaka to trade in lotions and clothes. Staying in the village is connected both to an agricultural livelihood, but also to caring for parents, elderly relatives or younger siblings. One respondent summarizes views that were voiced in several interviews:

“I want to continue staying here and also continue with my farming. I want to be close to mom and help my brothers and sisters go to school. So I want in future to have a business or an investment that will help me generate income and expand my farming activities”

Diversifying out of agriculture is a way of earning independent incomes while waiting for family land to be transferred to the next generation and such nonfarm options can be expanded in the future, but youth aspirations are firmly embedded in agriculture. Even respondents who envisioned leaving the village argued that they would find land elsewhere to take up agriculture closer to urban markets.

For those youth whose life cycle is unthreatened by land constraints they can be assured of eventually setting up their own households and farms when land is allocated by their parents. Labour resources grow as the household ages and children are born. For youth who are on the cusp of adulthood and dependent on their families for land to set up their own households, this transition is delayed or may even be altogether threatened.

Given their strongly differing positionality, both within the household and with respect to agriculture, the question can be asked whether there are any unifying interests at all between the interviewed youth? A few observations can be made in this regard: firstly, all the youth, regardless of their positionality within the household and in relation to agriculture demonstrate solid knowledge of and interest in agricultural techniques, being able to specify the use of particular technologies, production techniques, seasonality and marketing and prices. Inter-generational transfer of skills was occurring from the parental generation to children getting ready to set up their own farming households. Secondly, they all reported personal access to extension services, and described in detail how they attend meetings and listen to extension advice. The general impression from the interviews is of a group of committed, knowledgeable and professional young farmers eager to engage in agriculture. In group interviews especially, the policy aspects of further training of skills (establishing youth skills training centres in the villages) and providing soft loans for starting up small businesses were mentioned as support necessary to harness the latent potential of young people.

9. Conclusions

While youth policies typically delineate youth in terms of age (commonly considering particular age groups), as noted by White (2012), youth can also be defined as a status, as young people who have not yet achieved adulthood and independence. Policies, however tend to treat all people of the same age as similar, united by challenges or opportunities. The analysis above shows the mismatch between the two definitions with youth as status and youth as age group, generally not overlapping at all. The ability to establish oneself as an independent

adult in an agrarian society is strongly dependent on land. Achieving this status is related both to factors external to the household or the individual, the so-called opportunity space, but it is also conditioned by the position of earlier generations in the land market and the characteristics and particular position of the individual within the household. The control over children's independence and access to an agricultural livelihood in this sense rests as much with the parental generation as with external actors. For parents, moreover, their personal needs for care (unrelated to agriculture) and character judgments of their children may be as influential in guiding decisions on gifting land as more closely related agricultural concerns, for instance family land shortages or alternative land uses, such as renting or selling land to external actors. The variation in decision-making and independence exercised by youth living in households headed by their parents or other relatives is vast, however. The dividing line between youth headed households and those youth within households who *de facto* manage the farms and the household or live as a household within an extended household is in this sense very weak. The possibility of independence in this context relates to independent access to land. For those youth who stay with their parents without having such land, they are effectively barred from engaging in processes of intensification other than as labour.

While the results uphold the theoretical expectations of greater labour availability among more established households, theory is contradicted by the largely equal land productivity found among all age groups. Hence, the relative scarcity in labour does not translate into lower yields among younger households, suggesting that technology use, quality of labour and skills need to be considered alongside the absolute number of labour units. Meanwhile, the findings suggest that wedding theories of life-cycle and productivity with perspectives on the household is necessary to unravel the generational constraints faced by youth within households. Here cues can be taken from feminist economics and its criticism of the unitary household model.

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Appendix A. Supplementary data

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