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Youth Involvement in Small-scale Irrigation Schemes

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Abstract

Youth employment is a global policy priority and critical for economic and social growth. However, there has been limited focus on youth on small-scale irrigation schemes in sub-Saharan Africa. This study contributes to this gap and explores young people's involvement in on- and off-farm work and work away and the influences and constraints they experience. Quantitative and qualitative data were collected from six schemes in Mozambique, Tanzania and Zimbabwe, using a household survey (n=402) and focus groups (n=5). Key findings from the quantitative analysis includes: higher proportions of young people unemployed; on-farm work the dominant work for all age groups; the 15-24 age group having the highest proportion of off-farm work; young people combining irrigation with other work; household size, land area and household revenue having significant influences on young people's work; lower proportions of young people being households heads, and young household heads most likely to be male;. Young people faced similar challenges to many small-scale farmers, but their ability to contribute to scheme decision-making was limited and land access was not always equitable. Future policy initiatives for small-scale irrigation schemes should consider: how schemes are linked to job creation in their local economy; legitimate ways to foster young people's involvement in scheme decision-making; and encouraging locally appropriate innovations for equitable access to irrigation plots. Further research could help understand the complex interplay of household and individual characteristics that influence work options, the role of irrigation as a component of young people's work and barriers that limit off-farm opportunities.

Keywords: Youth employment; Equity; Participation; Small-scale irrigation; Sub-Saharan Africa

1. INTRODUCTION

Many youth in sub-Saharan Africa (SSA) experience significant income vulnerability (Scoones, 2019). As the youth population is expected to continue increasing (Proctor & Luchesi, 2012), this challenge will persist. Only one in four youths will obtain a wage job, most will be engaged in the informal economy and the majority will work on family farms or household businesses (Filmer & Fox, 2014). Engagement in the informal economy presents limited opportunity for wealth accumulation (Scoones et al., 2019). Structural constraints in African economies are the fundamental reason for the lack of jobs for young people and others in the labor force (Fox et al., 2020). The core challenges with respect to youth livelihoods in SSA the creation of more jobs and increasing the productivity of those working (Filmer & Fox, 2014).

Young people will be attracted to work that enables them to accumulate capital and is transformative in some way (Sumberg et al., 2014). Therefore, irrigation, as a potentially more productive form of farming, should be of interest to youth. The limited research available on youth and small-scale irrigation is conflicting, suggesting some youth are interested in irrigation and others are rejecting it (Scoones, 2019; Denison et al.,

2016). Choices and options are related to context and location, with areas of high agricultural growth providing more opportunities in rural areas (Yeboah et al., 2020).

Research on small-scale irrigation schemes in southern Africa finds that households typically have mixed income sources: irrigation, rain-fed farming, livestock and non-farm income earning activities (Bjornlund et al., 2019). Broad research on youth suggests that multi-income earning activities are also common among youth (Scoones, 2019), and equity issues remain a challenge (Manero and Wheeler, 2021). Again, this diversity of involvement in activities may be driven by location and context, with age and gender also possibly of relevance (Yeboah, 2020). In addition to structural constraints, many of the barriers for youth to enter and be successful in farming are common to all small-scale farmers: access to land, capital, credit, extension and information; cost of inputs and equipment; uncertain seasonal conditions; and poor soil fertility (Proctor & Lucchesi, 2012; Wheeler et al. 2017; 2020). However, these farming constraints are said to affect youth more strongly (Filmer & Fox, 2014; Okali & Sumberg, 2012), as having fewer assets and access to resources is part of being young (Ripoll et al., 2017).

Young people's socio-economic and demographic characteristics influence how they navigate their surrounding social and institutional structures (Filmer & Fox, 2014; Ripoll et al., 2017). Aspirations, resource access, financial capital, education and experience, social networks, and the stage of life course and livelihood building are particularly relevant for youth (Asciutti et al., 2016; Berckmoes & White, 2014; Irwin et al., 2018; Ripoll et al., 2017). Overall, there are many influences on access to opportunities and there will be inequality within the youth cohort, differing with respect to resources, knowledge and social barriers to enter and engage in opportunities (Yeboah et al., 2020).

This study is undertaken as part of the project entitled "*Transforming Small-scale Irrigation in Southern Africa*" (hereafter, called TISA), which has an interest in inequity within small-scale irrigation schemes. The study explores: i) how young people's engagement (or not) in on-and off-farm work and working away compares to older age groups and within the youth cohort in particular; ii) the household and individual and factors associated with young people's work options; and iii) the institutional influences on young people's involvement in irrigated farming. This paper presents a selection of findings from a larger unpublished report by Parry et al., (2021).

2. METHOD

2.1 Data collection: Face-to-face household surveys, focus groups and interviews

Six irrigation schemes involved with the TISA project were surveyed in 2014: Kiwere and Magozi in Iringa (Tanzania); Khanimambo and 25 de Setembro in Magude and Boane Districts in (Mozambique); Mkoba and Silalatshani in Vungu and Insiza Districts (Zimbabwe). For background details about the schemes and irrigation within the countries, see Mdemu et al. (2017) for Tanzania, Moyo et al. (2017) for Zimbabwe and de Sousa et al. (2017) for Mozambique.

A rural household questionnaire was firstly piloted within each scheme and enumerators were trained to ensure consistent administration of the questionnaire. Face-to-face interviews were undertaken with household heads (HHs) and/or other key household decision-makers. Overall, 402 households were surveyed, which represents 478 irrigated plots and 92%, 66% and 100% of households in the smaller schemes (Mkoba, Setembro and Khanimambo, respectively) and 47%, 60% and 20% of households in the larger schemes (Silalatshani Landela Block, Kiwere and Magozi, respectively). The survey included questions about a broad range of household demographics and farming data, including data on younger members of the household. The personal characteristics of each household member and the household's farming operations were collected, including household composition and types of work being undertaken by the household.

This study defined youth as 40 years or younger with sub-categories of 15-24; 25-30 and 31-40 to allow for comparison with categories used in the literature. Whilst the age range 35-40 may be considered unrepresentative[1] this allows for gaining an understanding of young farmers who may not yet have become household heads with their own land and who are farming as part of a household unit[2]. In this study we use the term 'work' for activities that generate income and unpaid domestic and care work was excluded. The term 'work' includes these three categorizations: i) on-farm; ii) off-farm (that is, any work not on the household land, including agricultural wages); and iii) working away (that is, living and working away from the scheme for the season). Since many work part-time across two categories, they are not mutually exclusive. It is important to note that the household surveys focused on members in the household and not those who have migrated for

[a] Common age classifications include 15-24 by the International Labour Office (Proctor & Lucchesi, 2012); 15-35 in the African Youth Charter (te Lintelo, 2012); and up to 40 in some national African legislation (White, 2012).

[2] As the paper shows, only a small proportion of household heads are under 40 years of age. Other young people are part of a household and the data does not allow differentiation whether their on-farm work is for the household or own account farming.

longer periods either permanently or temporarily. Hence, this paper does not provide data on working away for longer periods.

In 2017, five focus groups were undertaken with eight or nine young irrigation farmers each up to the age of 40. Five one-on-one interviews at four schemes were also undertaken with respected community leaders (aged 52 to 70). Participants were identified by the field staff that had worked extensively with the schemes, and were selected based on their ability to make an objective contribution to understanding youth and their issues. The qualitative discussions were undertaken in local language and were focused on: youth engagement in irrigated farming, aspirations and attitudes to farming, challenges and barriers facing young farmers, additional income sources, how to encourage young people to become engaged in farming, and opportunities going forward.

2.2 Data analysis

Descriptive statistics were calculated to understand the percentage of unemployed and those engaged in each type of work for the different age groups. The analysis was undertaken for all household members who were 15 years and older. Unemployment was defined as not being engaged in any of the three types of work (excluding those still at school and whose health was categorized as 'bed-ridden'). Within each age group, Pearson's chi-square test was used to test the association between each work type and other categorical household/farm characteristics (e.g., gender, education). Two independent sample t-tests were used to identify significant differences in continuous characteristics (e.g. age, land size, etc.) between individuals youths who engage and do not engage in each work type.

The data collected in the focus groups and interviews was translated and transcribed from local language into English. The qualitative data was then explored using Nvivo software with pragmatic and structural coding applied to collate data into the following sub-themes: challenges; encouraging engagement; gender; observations on young versus older farmers; and whether involvement of youth has changed.

3 RESULTS AND DISCUSSION

3.1 Proportions involved with different work options

The percentage unemployed was lowest for the 51-60 group (0.7%) and highest in the 15-24 group (14.7%) (Figure 1). This highlights the challenges for young people securing employment. Focus group discussion suggested that those unemployed were active in laboring for the family but were not earning an income: "*It is rare to find these young people in the village not working, they will either be helping their parents with farming activities or other off-farm works*" (male farmer, aged 38, Kiwere).

On-farm work was the dominant work option across all age groups and, therefore, an important component of income strategies. This finding accords with the literature that farming is the main livelihood activity in rural areas (World Bank, 2017). There is a complex interplay between young people's work options, which we speculate is influenced by several inter-related dynamics: life stage, household development cycles, and differing mobility. For example:

- The youngest group (15-24), is more likely to be single, and has the highest proportion with off-farm work. Young single people may have more time for off-farm work, particularly laboring work on other farms. They may also be more interested in off-farm activities as a form of exerting their economic independence and accumulating capital.
- The 25-30 age group is potentially more likely to be establishing a family and homestead. Resources for this phase of household development are critical. In this group, the male has mobility to work away while his spouse farms.
- The 31-40 group is likely to be more fully established as a household and more 'settled' with respect to farming and their livelihood activities. Hence, they have more on-farm work and less inclination to work away.

The proportions involved in different options show that on- and off-farm can be combined (Figure 1). The focus group discussions showed that off-farm activities are diverse and low income: for example, hairdresser, builder, transport and petty trade. This work is important for young people—for subsistence, to supplement farming that is often insufficient to meet needs; managing risk; and generating income to start, maintain or develop a farm—as reflected by several focus group participants: "Always, have a back-up, agriculture is an activity with a lot of risks" (male farmer, 33, 25 de Setembro); and "Off-farm(ing) [work] and small business are important since income from farming can be invested into other business and be used some time later when needed" (female farmer, 32, Kiwere).

Part of the explanation of the working away differences across the age groups may also be associated with longer-term work away, which is missing from this study. Young people are highly mobile and both genders often migrate for temporary or permanent employment (Scoones et al., 2019).

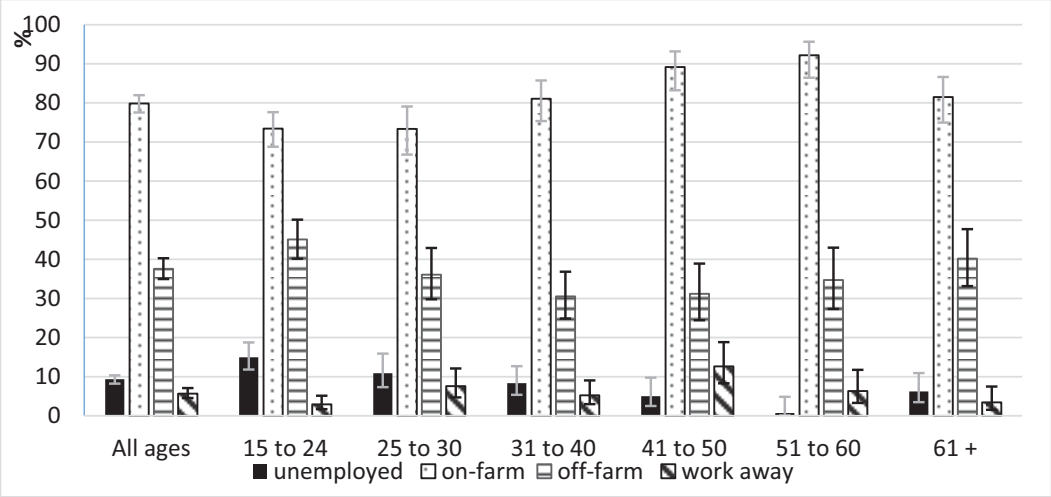

Figure 1. Unemployment and work categories (%) across all schemes with 95% confidence intervals by age group, in 2014[3]

3.2 Household influences on work options

The study also explored the associations between work options and household variables for the three youth age groups. A selection of these associations is shown in Table 1, and we discuss the strongest associations.

There are strong associations between household size and on-farm work for all youth age groups at the 1% level, with those having on-farm work being more likely to come from smaller households. Smaller families are more likely to depend on their children's labor to run the farm, and there may also be more opportunities for youth to use family plots to farm independently. For the 15-24 year-old group there is also a statistically significant association with off-farm work at the 10% level, suggesting that those with no off-farm work are from larger families. This might reflect that a larger household is less able to support young people to start an off-farm business. Alternatively, where larger households command larger farming areas, both under rainfed and irrigation, youth in the family will be constantly engaged with on-farm work and have little time to engage with off-farm work.

In the two youngest age groups, those with some on-farm work are more likely to come from households with smaller irrigated and total land areas. For the older youth group there is also a significant association but only with total land area. In households with smaller land area, there is less demand for household labor and fewer opportunities for young people to use family plots to farm independently. Hence, youth from these families, as we might expect, are most likely laboring for other households.

The association between farm size and off-farm work is only statistically significant for the youngest and the oldest age group. Those with off-farm work are more likely to be from households with smaller irrigated areas. This could reflect that households with smaller irrigated areas have a greater need to supplement household income, and as reflected above there is less need and opportunity for young people to do on-farm work. Those with off-farm work are also more likely to come from households with the largest total land area (significant in the youngest and oldest youth groups). In general, rain-fed areas will be larger relative to irrigation plots and are easier to manage while family members work off-farm. However, they generate less income, making other income opportunities more important.

The only significant association related to revenue is for working on-farm for the youngest youth group, with those having no on-farm work more likely to come from households with higher revenue. This suggests that higher income families do not need to depend on their children's on-farm work; rather, they can support their education and pursuit of off-farm business or moving to town. That there are no significant associations for other age groups might reflect the complexity of households' livelihood strategies, with total income being derived from multiple and diverse activities (Bjornlund et al., 2019).

[3] Work on-farm, off-farm and working away are not mutually exclusive.

Table 1. Association between youth work categories and selected continuous household variables in 2014[1]

	Household size (no.)[2]	*Irrigated land (ha)*	*Total land (ha)*	*Total household revenue (US$)*
Age 15-24				
Have on-farm work	6.40	0.70	1.81	1280
Have no on-farm work	7.72	0.88	2.25	3133
t test significance	***	**	**	***
Have off-farm work	6.52	0.64	2.1	1733
Have no off-farm work	6.96	0.83	1.83	2153
t test significance	*	**	*	*ns*
Age 25-30				
Have on-farm work	6.08	0.84	1.76	2557
Have no on-farm work	8.13	1.08	2.45	2508
t test significance	***	**	***	*ns*
Have off-farm work	6.82	0.83	2.06	1838
Have no off-farm work	6.56	0.97	1.93	3086
t test significance	*ns*	*ns*	*ns*	*ns*
Age 31-40				
Have on-farm work	5.91	0.99	1.67	2322
Have no on-farm work	7.48	0.89	2.36	2109
t test significance	***	*ns*	***	*ns*
Have off-farm work	6.3	0.98	2.12	1993
Have no off-farm work	6.17	0.97	1.65	2373
t test significance	*ns*	*ns*	**	*ns*

Notes: [1]Work away is not shown in the table and there was no significant difference for all age groups and household variables. [2]For example, 6.40 indicates the mean household size for an individual 15-24 having on-farm work, while for those not having on-farm work it was 7.72. ***, **, * difference is statistically significant at the 0.01, 0.05 and 0.1 level respectively for the two sample equal means t-test. ns=not significant.

3.3 Individual characteristics

Table 2 shows that 3.6% of HHs were aged 15-24, 6.9% were aged 25-30, 16.9% were aged 31-40, and more than 50% were aged 51 and over. It is not surprising that fewer young people have household headship status as, in most cases; this would require parents or grandparents to relinquish their farming plots. Household headship usually confers a form of formal land tenure through registered plot ownership, which has linkages to scheme membership, scheme decision-making forums and, potentially, improved access to finance. Low numbers of young household heads means that there is potentially a relatively smaller pool of young people with direct access to land and eligibility for scheme decision-making. The qualitative data confirms land access and participation in decision-making are both issues for young people (see section 3.4).

Across all youth groups, men were more likely to be HHs than women. This is to be anticipated in patriarchal contexts where young women are expected to move away when they marry and access land through their husband's family. It is not clear why, but this difference was more pronounced for the 25-30 age group. For the two youngest groups, male HHs are more likely to be unmarried and female HHs are more likely to be married. In general, women marry earlier than men (Tadele & Gella, 2014), and their ability to become a HH may be associated with the gender of their siblings and whether they have married locally (in some form). The youngest group of HHs may represent child-headed households. With lack of parental support, these households will likely struggle to establish themselves in farming and other activities.

The analysis of gender showed few associations (Table 4). For the youngest and oldest youth groups, significantly more men worked away. Work associations were also explored by marital status and gender and there was some evidence that marital status masked the effects of gender with on-farm gender data masking that more young married men work on-farm across all age groups compared to unmarried men. This was significant for the 25-30 age group with 90% of married men working on-farm.

The overall trend of on-farm work for young women mirrors that for young men; that is, more married women have on-farm work. This is an expected finding as young women tend to marry earlier and this brings access to land (Tadele & Gella, 2014). The averaged gender data shows a trend for more of the 15-24 group of women having off-farm work than men, which appears to be driven by a significantly higher proportion of young unmarried women (51%) having some off-farm work compared to married women in the same age group and all other age groups and genders. This may reflect Christiaensen et al.'s (2020) observation that young women have an interest in non-agricultural work as it offers greater empowerment and a move away from traditional gender roles and divisions of labor. However, this may also reflect less access to land. The data for males and females with married and unmarried combined appears to show a decrease in the proportion of those engaged in off-farm work and an increase in proportions engaged in on-farm work as age increases. This potentially shows a change in the balance of on-farm and off-farm work, as individuals grow older. It is speculated that this reflects complex underlying dynamics relating to mobility, life stage and

household development, and resources. Further, multi-livelihood activities are linked to opportunities, but also associated with survival, managing risk or changes in viability of activities (Reardon et al., 2007).

Table 2. Percentage of HHs by marital status and gender by age

	Age (%)						
	15-24	***25-30***	***31-40***	***41-50***	***51-60***	***61 +***	***Total***
HH(n=390)[1]	3.6	6.9	16.9	20.3	21.3	31.0	100
Married (n=285)	3.2	8.1	19.7	22.5	21.1	25.6	100
Not currently married (n=105)	4.8	3.8	9.5	14.3	21.9	45.7	100
HH gender:							100
Men not currently married(n=31)	12.9	12.9	16.1	9.7	16.1	32.3	100
Women not currently married(n=74)	1.4	0.0	6.8	16.2	24.3	51.4	100
Men currently married (n=251)	2.4	7.6	19.5	21.9	20.7	27.9	100
Women currently married (n=34)	8.8	11.8	20.6	26.5	23.5	8.8	100

Note: [1]Observations here are lower due to missing HH ages.

Table 4. Comparison between gender, marital status and age

	Gender (%)			***Gender & marital status (%)***					
	Male	***Female***	*chi-2test significance*	***Married men (%)***	***Unmarried men (%)***	*chi-2 test significance*	***Married women (%)***	***Unmarried women (%)***	*chi-2 test significance*
Age 15-24	n=202	n=176		n=18	n=1846	*	n=61	n=115	
On-farm	71	76	*ns*	89[1]	67[2]		81	71	ns
Off-farm	44	47	*ns*	38	45	ns	35	51	**
Work away	5	1	***	21	3	***	2	0	ns
Age 25-30	n=98	n=101		n=51	n=47	***	n=68	n=34	
On-farm	76	71	*ns*	90	60		76	62	ns
Off-farm	37	36	*ns*	31	43	ns	30	44	ns
Work away	9	7	*ns*	9	9	ns	6	8	ns
Age 31-40	n=101	n=121		n=84	n=16	**	n=100	n=22	***
On-farm	81	81	*ns*	85	63		85	59	
Off-farm	34	28	*ns*	31	47	ns	26	36	ns
Work away	9	2	**	8	11	ns	2	5	ns

Notes: [1]For example, 89% of married men (n=18) aged 15 to 24 had on farm-work; [2]67% of unmarried men (n=206) aged 15 to 24 had on-farm work. ***, **, * statistically significant at the 0.01, 0.05 and 0.1 level respectively for the two-way association test (Pearson Chi-squared) between marital status and whether working on-farm or not (working off-farm or not/whether work away or not). ns=not significant.

Comparison of the findings with the literature is not straightforward. Scoones' (2018) finding that both young men and women work away is supported. However, this appears more likely for the 25-30 group but does not vary significantly between married and unmarried individuals. The scenario that married men work away in households with children of an age to support their mother (Cousins, 2013) is partly supported, as the 25-30 group were more likely to work away: but there was no significant difference between married versus unmarried. Additionally, some married women in this age group also work away, which may be associated with being part of an extended family where others can look after children. There may also be some specific economic push or pull factors at play that make work away from the family an imperative or a better option.

3.4 Institutional influences on involvement in irrigation

Young farmers in the focus groups expressed concerns about lack of capital and borrowing opportunities and gaps in knowledge and information relating to farming and markets. These issues are comparable to other farmer's concerns on schemes (Bjornlund et al. 2017). Similarly, the main irrigation issues expressed by young farmers were also common to other farmers: poor infrastructure, canals unlined, queues for water, and issues related to water fees. In some cases, young women have difficulty with the physicality of irrigation: "*Managing water in the field is difficult… and if you can't pay [someone to help you] the best way to overcome it is asking someone here to train you*" (female farmer, 40, 25 de Setembro).

There were more comments on land access compared to water access in the focus groups, probably reflecting that land access is what gives access to water and as such the first step to involvement in irrigation.

Young farmers on Tanzanian schemes are accessing land through their parents or spouse, renting, buying or their community. They sometimes use more than one option (Table 5). It seems common for young people to start farming on family land and then gain access to more land. In general young farmers suggest access is not equitable and older farmers have larger pieces of land: "*There is no equitable access to land between young people and older people. Older people own large pieces of land … If your parents or family do not own land you are in the more difficult position to access land*" (male farmer, 38, Kiwere). From the focus group discussion we also know that it can take five to seven years for young farmers to save to rent or buy some land for irrigation farming. The numbers are small, but the challenge to access land is potentially greater for young women (Table 5), which is endorsed by the following comment: "*It is difficult for a female to be given a piece of land and when they are given they do not get the same as male children*" (male farmer, 36, Magozi). In Zimbabwe and Mozambique, land access for young farmers is mainly though families. On one scheme in Mozambique, the community had recognized the issue of access, and a number of disused irrigation plots had been brought into production to involve more young farmers who were then mentored by older farmers (de Sousa, 2017).

Table 5. Pathways to access land for farming for young people in Tanzania (Source: focus groups)

Gender (#)	Pathway to access land				
	Parent	Spouse	Rent	Buy	Other[1]
Females (6)	2	1	3	0	1
Males (10)	6	2	5	3	1
Secondary acquisition (6)	1	3	3	2	0

Note: [1] village government or clan.

On communal small-scale irrigation schemes, being the registered plot owner is often associated with scheme membership. Therefore, if young farmers are using family plots or renting land they may be excluded from formal irrigator organizations and participation in scheme decision-making: for example, "*many youth are not members of the scheme organization … this hinder[s] them to participate in decision making*" (male, 29, Magozi). At Silalatshani, youth argued that they were not represented enough in the management or marketing committees, and in 25 de Setembro there was only one young farmer on the board. There was discussion that older farmers were more powerful and were listened to more. In Mkoba and 25 de Setembro, young farmers felt that their comments were not always well received in scheme meetings: for example, "*Sometimes we stay quiet to avoid misunderstanding*" (male farmer, 28, 25 de Setembro). The value of youth participation is widely recognized in the literature, including in: extension or producer organizations (Filmer and Fox, 2014); irrigation management organizations (van Koppen, 2003); and young farmer groups (Proctor & Lucchesi, 2012). Young farmers on schemes are keen to participate in scheme decision-making, and to have leadership roles and become role models.

4 CONCLUSION

The higher unemployment for young people and dominance of on-farm work on small-scale irrigation schemes highlights the need for more opportunities for young people in rural communities. Policy initiatives for irrigation farming, should consider how schemes are linked to local job creation: for example, processing produce, information provision, marketing, and agricultural services. Existing off-farm opportunities are also important and the barriers that limit these options should also be explored in future research. Work options are often combined and the dynamics and purpose of multiple work options also requires further research, particularly the role of irrigation as a component of young people's livelihood strategies. This research would assist with the identification of policies that support young people to optimize their livelihood mix.

The main household influences on young people's work were household size, land area and revenue, though this was not consistent across all age groups or work options. The data suggests that household size and total land size have a long-term influence on youth on-farm work (significant associations for all age groups) but a short-term influence on off-farm work (significant association only for the youngest youth group). That household revenue has few associations was surprising. With respect to individual characteristics, more young married men work on-farm across all age groups compared to unmarried men. More married women also worked on-farm compared to unmarried women, though this was only significant for the 31-40 year-old group. Those who were unmarried were more likely to have off-farm work, which was only significant for the 15-24 year-old married women. It appears that a greater proportion of married people work away in the 15-25 year-old group, but this reverses for the 31-40 year-old group. These findings emphasize the complexity of associations.

The findings illustrate the complex interplay of the household and individual characteristics that influence work options for young people. Future quantitative research could address several limitations of the household survey data by: surveying youth separately and in sufficient numbers to report on schemes separately; collecting data on the mode of engagement and types of activities (e.g. whether on-farm work is for the family or own account farming and whether off-farm is farm laboring, other laboring or self-employment); collecting data on longer term work away; and considering other characteristics that have an influence (e.g. life stage and mobility).

The qualitative findings confirmed that young irrigators face similar challenges to many small-scale farmers, namely: poor irrigation infrastructure and water supply; and lack of capital and lending opportunities. There are low numbers of young heads of household on schemes. Young household heads were more likely to be men, and young female household heads were more likely to be married. therefore, low levels of plots registered to youth, which has implications for land access and youth participation in scheme decision-making forums. Whilst some young farmers are gaining access to irrigation plots, there is some inequity of access. It can take several years to raise the capital to rent or buy plots. It is also expected that there will be greater competition for rental and purchase arrangements as schemes transition to improved productivity. The pathway to inherit irrigation plots is less likely for young women, and entry into irrigation farming is restricted for young people from households without current access to irrigation plots. This study supports the observation by Collins and Mitchell (2016) that land reform should recognize the complex politics and emphasize the importance of strengthening institutions and encouraging locally appropriate innovations. Policies could have a focus on the intergenerational transfer of land, but with consideration of how youth-specific policies might impact others. Policy attention should include legitimate ways for young people to contribute to scheme decision-making processes without the need for them to be registered plot holders. There is scope for additional qualitative research to further understand the diversity and context associated with young people and their motivation in regard to work options on small-scale irrigation schemes, particularly irrigation.

There is hardly any research specifically on young people on irrigation schemes and this paper has provided important insights. Given the growing population in Africa, the proposed recommendations are vital to enhance equity on small-scale irrigation schemes and to improve young people's ability to build their livelihoods and contribute to economic and social growth.

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