www.elsevier.com/locate/worlddev

World Development Vol. 64, pp. 259–272, 2014

http://dx.doi.org/10.1016/j.worlddev.2014.06.013

Are Rural Youth in Ethiopia Abandoning Agriculture?

SOSINA BEZU and STEIN HOLDEN*

Norwegian University of Life Sciences, Aas, Norway

Summary. — This study examines current land access and livelihood choices of rural youth in Southern Ethiopia. We found that youth in rural south have limited access to agricultural land because of land scarcity and land market restrictions. We hypothesize that this forces the youth to abandon agriculture in search of other livelihoods. Our study shows that only 9% of the rural youth plan to pursue agriculture as their livelihood. We also found a sharp increase in youth outmigration in the past six years. Our econometric analyses confirm that lack of land access is forcing the youth away from an agricultural livelihood.

Key words — youth livelihood choice, land access, non-farm employment, migration, Ethiopia, Africa

1. INTRODUCTION

Youth unemployment has become a major global concern following the global economic crisis of 20–09, an event that triggered a sharp rise in youth unemployment. The current global youth unemployment rate is estimated to be 12.6% and is expected to remain high for the next five years (ILO, 2013). The political and social consequences of youth unemployment can be extensive, as evidenced in the recent political unrest in North African and Middle Eastern countries. The youth have been at the forefront of large demonstrations that have demanded reform and employment in the North African, Middle Eastern, and some European countries.

The majority of the youth in Ethiopia live in rural areas where farming has been traditionally the main livelihood of the people. As the state owns all land in Ethiopia, rural residents have been guaranteed access to land through a law that grants them a right to obtain agricultural land for free. However, it has become increasingly more difficult to fulfill this right for the young generation. Ethiopia currently faces severe land scarcity in parts of the highlands where population densities have become very high and farm sizes have become very small. As a result, land as a safety net is eroding and landlessness is emerging among the youth who are unable to stay on their parents' land. This is particularly true in parts of Southern Ethiopia where the majority of farmers cultivate less than one hectare of land.

In a country where there are restrictions on land markets and where there are virtually no large farms that can provide farm wage employment, having farmland is the most important factor that determines whether a rural resident can depend on an agricultural livelihood. In this study, we examine youth livelihood choices in rural Ethiopia using primary data collected in 2013 with supplementary data from a related survey of the same households in 2007. We believe that this is the first study to perform a careful assessment of land access and livelihood strategies of rural youth in Africa. The study focuses on one of the most densely populated rural areas on the continent in a country where agriculture has been considered the mainstay and livelihood for all rural residents. Development strategies and policies in Ethiopia, including the recent growth and transformation plan, implicitly assume that all rural residents are farmers who have access to agricultural land. Assessing the actual access to agricultural land and youth livelihood choice therefore has important policy implications. To link the current individual endowment of youth to their own choice of employment strategy, we used youth *planned livelihood strategy* rather than their current participation in the agricultural or non-agricultural sector, which may be largely driven by their parents' decisions and priorities. The paper also examines the extent of youth migration from the rural South. Our panel data from 2007 and 2013 enabled us to test the migration aspect of youth livelihood choice by examining the extent and determinants of youth migration in the past six years.

We provide novel evidence that youth in Southern Ethiopia have limited access to agricultural land in spite of their constitutional right that guarantees provision of agricultural land to all rural residents. Land cannot be bought in the market nor can it be rented on a long-term basis from other farmers. Local authorities that have been the traditional source of farmland have limited capacity to accommodate new farmers as all arable land is already occupied in these areas. As a result, while parents are now the major source of farmland, the land that can be obtained from parents through inheritance or gift is too small to establish a livelihood for a rapidly growing number of land-poor households. Thus, the youth are looking toward employment options other than agriculture, and the econometric analysis that examines determinants of livelihood choice strengthens this supposition. The results from a multinomial model indicate that larger land holdings by parents decrease the likelihood of youth choosing non-farm employment over farming. A 1% reduction in household's farm size is associated with a decline of 0.05 in the probability of a youth from that household choosing farming as a livelihood. A probit model estimation of migration decisions shows that youth migration within the last six years is negatively correlated with parents' farm size.

From the livelihood choice analysis, we learn that young people choose unskilled, off-farm wage employment as a result

*This research has been funded by GLTN - UNHABITAT and Norwegian University of Life Sciences. We would like to thank Toril Iren Pedersen and two anonymous reviewers for useful comments. We appreciate the cooperation and information we received from the Land Administration offices in the Oromiya and SNNP regions and districts where we carried out the survey. Final revision accepted: June 10, 2014.

of desperation due to a lack of land access and viable livelihood opportunities (push factors) and that urban salaried employment seems an attractive opportunity for those with the resources, education, and flexibility to explore such opportunities (pull factors). Choices of the youth from land-poor households are driven by push factors while land-rich households are more able to afford to educate their children who therefore may be able to obtain better paying jobs.

This paper is organized as follows. Section 2 presents a conceptual framework and discusses empirical literature on livelihood diversification. Section 3 provides background on land laws in Ethiopia and discusses data sources. Section 4 reports descriptive statistics while Sections 5 and 6 present empirical approach and econometric analyses, respectively. The final section presents concluding remarks.

2. CONCEPTUAL FRAMEWORK AND LITERATURE

(a) *Drivers of livelihood diversification in rural areas*

A proliferation of research on rural livelihoods in the last two decades has produced ample evidence that rural residents are not solely dependent on agriculture. There are significant levels of non-farm activities that provide either an additional source of income to farmers or serve as the only source of livelihood to landless rural residents (Ellis, 1998, 2000; Lanjouw & Lanjouw, 2001; Reardon, 1997; Reardon, Berdegue, & Escobar, 2001). Some have even argued that there is a trend toward 'deagrarianization' of rural areas, including rural areas in Africa (Bryceson, 1996, 2002; Bryceson & Jamal, 1997; Rigg, 2006).

In light of strong evidence of diversified livelihoods in rural areas, we conceptualize resource allocation decisions of rural residents as a constrained optimization problem where the existing set of incentives signals the relative returns from the diverse farm and non-farm activities and where the amount of owned and otherwise accessed resources determine the capacity to engage in these activities. In the context of employment in the non-farm sector, *the incentives* can be categorized into two groups: push and pull factors. One group of push factors is related to performance of agriculture. This includes the basic production potential given available technologies and agro-ecological characteristics as well as risk factors that may cause inter-seasonal and other transitory drops in farm income, chronic food insufficiency, and fluctuations in farm income (Reardon, Berdegue, Barrett, & Stamoulis, 2007). Another source of push factors are incomplete markets for factors, including, but not limited to, missing or incomplete land, credit, and insurance markets (Binswanger & Rosenzweig, 1986). In the absence of financial markets, individuals and households diversify their sources of income to self-insure themselves and provide working capital (Barrett, Reardon, & Webb, 2001). Rural residents who do not own agricultural land in the face of missing land markets experience the ultimate push factor. However, farmers who have land to cultivate but face frequent weather shocks may be forced to diversify into the non-farm sector as *ex ante* risk management and/or *ex post* risk-coping mechanism.

The pull factors emerge if earnings from non-agricultural employments are assessed to be higher than earnings from farm employment. The higher the returns to labor and capital in non-agricultural employment, the more attractive such employment will be compared to farming. If there is a strong and vibrant non-farm sector in the rural areas, efficient allocation of resources implies that rural residents diversify into the sector while also engaging in farming. Some of the residents could also engage fully in the non-farm sector if the returns from the non-farm sector dominate the returns from agriculture at all levels of labor and capital. However, rural areas with strong push factors but little local non-farm employment opportunity may experience high levels of outmigration, especially if they are not located within a commuting distance to other sources of employment.

The push and pull factors represent the incentives that motivate employment or investment in the non-farm sector. Whether and to what extent rural residents engage in the non-farm sector also depends on the capacity of the residents. The capacity represents not only the individual's resources but also the relevant household and community resources that she/he has access to. While the main capacity indicators in relation to non-farm employment are the human, physical and financial capitals, the physical and financial constraints are less of a problem in a well-functioning market economy because one can finance a business by borrowing. However, when markets are functioning poorly, one's human, physical and financial capitals are not easy to augment and can become binding constraints. This can lead to different outcomes for different individuals facing the same incentives but different constraints. This capacity limitation restricts resource-poor individuals and households to a few low paying activities, as evidenced in many African countries (Reardon, 1997).

(b) *Livelihood diversification in rural Africa*

Although rural areas of Africa have been typically associated with agriculture, the non-farm sector is an important source of employment and income. When considering national employment statistics, it does not seem very significant because national statistics report only primary employment. On average, rural non-farm employment accounts for 10% of full-time employment in Africa (Haggblade, Hazell, & Reardon, 2007). However, many farmers engage in non-farm activities as an additional source of income. A study that reports both primary and secondary employment shows a non-farm sector participation rate of 93% for Malawi and 75% for Ghana (Winters *et al.*, 2009). The share of income that rural households obtain from the non-farm economy may, therefore, give a better indication of the importance of non-farm activities to rural households. On average, the share of rural non-farm income to household total income is reported to be approximately 35% in Africa (Reardon *et al.*, 2007). There are, of course, variations across countries. The share ranges from 6% in Southern Mali to 93% in the unfavorable climate zones of Namibia (Reardon *et al.*, 2007).

(c) *Livelihood diversification in rural Ethiopia*

According to a national survey by Ethiopia's statistical agency, only 10% of economically active individuals in rural areas are employed in the non-agricultural sector (CSA, 2012b). However, similar to many national statistics on employment, this one also refers to primary occupation of individuals, and thus, the statistics regarding non-farm employment were much lower than those reported by the empirical studies on income diversification in rural areas. These studies show that the proportion of rural households who participate in non-farm employment ranges from 25% in Oromia (van den Berg & Kumbi, 2006) to 81% in Tigray (Woldenhanna & Oskam, 2001). Similarly, the share of non-farm income to total income is 35% in Tigray (Woldenhanna & Oskam, 2001), 20% in Hararghe (Tefera, Perret, &

Kirsten, 2005), 13% in central and southern regions of Ethiopia (Matsumoto, Kijima, & Yamano, 2006), and 8% in Oromia (van den Berg & Kumbi, 2006). Most of the non-farm activity in rural Ethiopia is self-employment. With the exception of Tigray, the majority of the households in the above studies engage in self-employment. The high level of wage employment in Tigray is a result of food-for-work and cash-for-work programs provided by the government. For example, 58% of those engaged in wage employment were engaged in food-for-work/cash-for-work programs. The study by Bezu, Barrett, and Holden (2012) uses panel data from a more representative sample that includes more than 1,400 households in 15 villages in Ethiopia and shows a household non-farm participation rate of 48%. The study further shows that the majority of households (70%) engage in non-farm self-employment activities.

(d) *Household income diversification versus individual livelihood choice*

Conceptually, the labor allocation decision in the context of utility maximization has been modeled either as an individual utility maximization problem, such as in the migration model of Todaro (Todaro, 1969), or as a household utility maximization problem, as in the spirit of Becker's family labor allocation model (Becker, 1965). More recent literature challenges the unitary household model in favor of a collective model that allows for intra-household bargaining, as in co-operative and non-cooperative bargaining models (Lundberg & Pollak, 1993; Manser & Brown, 1980; McElroy & Horney, 1981). Studying livelihood choice specifically for the youth population is challenging because the youth in rural areas often live with their parents in a household where they may have only limited influence on their own labor allocation. However, they are also at an age when they have to think about and prepare for their own independent life separate from their current household. Hence, the interests of the household and the individual members may not always overlap, especially with regard to the long-term livelihood decisions of youth members. For some of the youth, their social and legal position as minors may effectively block their exit options, unlike the case for married couples, who may each use the threat of divorce or non-cooperation to strengthen their bargaining power. It is, therefore, tricky to use the current employment participation of youth as an indicator of their individual chosen livelihood or occupation. This is because their current employment may be a result of the household maximization decision, the individuals' own long-term maximization decision, or a compromise of the two.

Land is an important determinant of livelihood in rural areas. As population increases and land scarcity becomes critical, non-farm activity and migration may become the only way out of poverty for land poor farmers as well as primary source of livelihood for the new generation of rural resident. It has been argued that the de-linking of rural livelihood from farming has been on the rise for the past few decades in Africa (Bryceson, 1996, 2002, Rigg, 2006). If land-scarce farm households participated in the non-farm sector to diversify income and cope with shocks in the past, non-farm employment may now become the only source of employment for the children from such farm households. This situation is further reinforced by changes in youth aspirations fueled by increased information and improved access to roads, which reduces transaction costs.

3. BACKGROUND AND DATA

(a) *Agricultural land access in Ethiopia*

The socialist Derg regime that came into power in 1975 through a military coup abolished the feudal system in Ethiopia and declared all land, rural or urban, to be the property of the state. All of the residents in the rural communities in Ethiopia who do not have alternative livelihood opportunities were then granted a constitutional right to obtain land as a basis for their livelihood. Although the market system and the political leadership changed in 1991, the land is still owned by the state, and the rural residents still have a constitutional right to obtain agricultural land for their livelihood. The 2005 Rural Land Administration and Land Use Proclamation includes the following articles to ensure this right (FDRE, 2005):

> *Peasant farmers/pastoralists engaged in agriculture for a living shall be given rural land free of charge (FDRE, 2005, Section 5, No. 1-A)*
>
> *Any citizen of the country who is 18 years of age or above and wants to engage in agriculture for a living shall have the right to use rural land; children who lost their mothers and fathers due to death or other situation shall have the right to use rural land through legal guardians until they attain 18 years of age (FDRE, 2005, Section 5, No. 1-B).*

This "land as a safety net" right is the basis for the prohibition of land sales in the country. This constitutional right was provided to youth through repeated land redistributions that aimed to maintain an egalitarian distribution of the land. Households accessed land based on their subsistence needs (family size) and the production potential (land quality classes) of the land (Holden & Yohannes, 2002). Increasingly, these redistributions had to be carried out by reallocating land from more land-rich to land-poor households, a situation that created tenure insecurity as the land redistribution game became a zero-sum game (Zewde & Pausewang, 2002). It was this tenure insecurity and weak land rights of individual households that undermined investments in land and created a demand for more secure land rights that ultimately led to the halting of the land redistributions and to the recent land registration and certification reform that aims to provide more secure land rights (Deininger & Jin, 2006). This implies, however, that Ethiopia has created conflicting legal rights in favor of current owners and occupiers of the land while the growing land-poor or landless youth population could not rely on their constitutional right to land being provided by the state.

With the abolition of the redistribution policy and due to the increase in land scarcity, it has become increasingly more difficult for youth to access land. Most rural communities have a long waiting list of youth who have applied to receive land from the authorities. In many places, the authorities have begun giving them small plots for building a house but too small to be used for farming purposes. As land sales are prohibited and there are restrictions on land renting, land inheritance is the main source of access to agricultural land and agricultural livelihood for rural youth. However, most households have small land holdings and large families. More than half of the households in Ethiopia currently cultivate less than one hectare of land, while the average household size is approximately five members (CSA, 2012a, 2012b).

(b) *Land policies, migration, and non-farm activities in rural Ethiopia*

Although current land holders have in theory perpetual user rights which they can also transfer to their children, their rights are in fact conditional on their continued residence in the village where their farm is located. The recent federal land use law indicated that the land of those households who stayed outside of the locality for extended period will be redistributed to the landless and land poor (FDRE, 2005). The implementation and interpretation of this law may have local variations but one important common effect is to discourage temporary or permanent migration among current land holders. In addition, farmers who have not cultivated their land for two consecutive years will lose their land user right even if they were local residents. This may create a disincentive for farmers to engage in non-farm activities as low-intensity farming may be construed as 'abandonment' by local authorities (WB, 2011). These restrictions are a continuation of the policies under the Derg regime which had even stronger controls on labor movement. Over time, such policies have contributed to a rural economy that has very little diversification and low migration (Little, Stone, Mogues, Castro, & Negatu, 2006; Rahmato, 1984).

(c) *Data*

This study is based on a household and youth survey conducted in February and March 2013. We built on a baseline study of 615 households that were surveyed in 2007. Of the original 615 households, 580 were surveyed again in 2013 and a new sample of 40 households was added. The locations and households that were included in the study were identified using stratified random sampling based on variations in agro-ecosystems, market access, and population density (urban expansion pressure). The study was carried out in sixteen villages spread out among five districts in Southern Ethiopia. Three of the districts were located in the Oromia region (Shashemene, Arsi Negelle, and Wondo Oromia), and two were located in the Southern Nations, Nationalities and Peoples (SNNP) region (Wondo Genet in the Sidama zone and Damot Sore in the Wollaita zone). The sample included three major ethnic groups with different languages. Households in the Oromia districts had larger farm sizes than those in the SNNP. Shashemene and Wondo Genet are located quite close to Awassa, the largest town in this part of Ethiopia and the administrative center of the SNNP region. Located along the main road between Awassa and Addis Ababa, Arsi Negelle and Shashemene have very good market access for their annual crop production (cereals). The cash crop producing area, Wondo Genet, has irrigation access, is located close to Shashemene and has good roads that facilitate market-oriented perennial cash crop production (sugarcane, chat, coffee). The Damot Sore district in the Wollaita zone is located in a more remote rural setting with poorer market access and, therefore, is characterized by more traditional subsistence-oriented production with perennials (enset). Further descriptions of the survey areas are given in Table 15.

We surveyed household heads and their sons or daughters who are 15–29 years of age. [1] All household heads in the sample were surveyed, but only youth who were current members of the households or who lived in the same village were included in the youth sample. [2] Each youth and household head were interviewed separately for the survey. The household heads were typically the fathers; however, in some cases, the head of household was a female. We collected information for each member of the household that was a resident in 2007, including detailed information regarding members who had left the household since 2007. [3] Household heads were asked about land gifts and inheritances to children, schooling decisions for children as well as land holdings and land certifications. The youth sample consisted of 600 individuals selected from 266 households that had one or two pairs of youth siblings. The youth survey addressed youth involvement in agriculture, land inheritance expectations, livelihood choices, and trust and cooperation issues.

4. DESCRIPTIVE STATISTICS

Table 1 provides basic overview statistics of the youth sample. We have more male youth in our sample than female. We found that 94% of the youth in our sample lived with their parents and the majority are students. School enrollment appears high with 97% having been registered in a school at least once in their lifetime. However, the temporary or permanent school dropout rate is also high with 43% stating that they have dropped out of school at least once. On average, the youth in our sample have completed seven years of education. We have proportionately more female students than male students and we also have proportionately less female drop out than male drop out in this sample. However, this may not be because of low drop out among female students in the village. Rather, it may be because most female students drop out due to marriage and we may not have them in our sample as married women typically move to their husband's village. The female youth in our sample are on average one year younger than the male youth.

(a) *Agricultural land holding*

The national level land use survey shows that the average household farm size in Ethiopia is 1.22 hectares, but 57% of the households have farm sizes less than one hectare (CSA, 2012a). The mean farm sizes in our sample are reported in Table 2. The mean farm size is 0.86 hectares, which sustains an average household size of 7 people. Half of these households cultivate 0.5 hectares or less, but there is a significant variation across survey areas. The households in the Oromia districts have larger farms, while the majority of households

Table 1. *Main characteristics of youth sample*

	Male	Female	All
Sample size	353	246	599
	Percentage		
Live with parents	95	93	94
Attended school at least once	98	97	97
Currently student	62	73	66
Dropped out of school at least once	48	35	43
Married	13	11	12
Involved in farming activity	89	67	80
	Average (mean)		
Age of respondent	19.28	18	18.76
Highest grade completed by respondent	7.36	6.55	7.19
Highest grade attained by any member in the household	9.4	8.78	9.42
Number of respondents' brothers	3.64	3.62	3.63
Number of respondents' sisters	3.5	3.34	3.44

Source: Own survey data.

Table 2. *Farm size and demographic characteristics of sample households, by district*

	Oromia region			SNNP region		Total
	Shashemene	Arsi Negelle	Wondo Oromia	Wondo Genet	Damot Sore, Wollaita	
Average land holding (in hectares)	1.15	1.38	0.84	0.55	0.52	0.86
Households with land holding $\leqslant$ 0.5 hectare (%)	26	18	43	71	76	51
Households with land holding $\leqslant$ 1 hectare (%)	58	45	75	88	95	74
Household size (current members)	7.9	7.5	7.2	7.3	6.1	7.1
Number of own children currently living with the household	5.7	5.5	4.9	5.0	3.9	4.9
Number of own children alive (including currently non-resident)	7.3	7.3	5.5	6.6	6.3	6.7
Number of observations	103	145	40	126	199	613

Source: Own survey data.

in the SNNP cultivate very small farms. Particularly striking is the farm size in Damot Sore (Wollaita), where 95% of the households cultivate less than one hectare of land. Wondo-Oromia district in the Oromia region is geographically close to the Wondo Genet district in the SNNP and has a significantly smaller average farm size than the two Oromia districts; however, it is still higher than our sample from the SNNP districts.

(b) *Current youth land holding*

Currently, Ethiopia's population is estimated to be more than 86 million (CSA, 2013a). A recent nationally representative survey in Ethiopia shows that the majority of the population is young with the youth and adolescent populations alone accounting for 41% the total population in 2011 (CSA & ICF, 2012). Furthermore, according to the 2007 census, 84% of the population in Ethiopia lives in rural areas (FDRE, 2008). Thus, the majority of the youth in Ethiopia live in rural areas. However, the majority of young people in rural Ethiopia do not have their own farmland despite their constitutional right to access land in the community in which they live. The 2012 national level land use survey shows that the youth (18–29 years of age, in this case) accounts for 21% of the rural landholders in Ethiopia. The average age of the household heads in our sample is 44, while 16% of them are younger than 30. [4] Consistent with the land scarcity differences, proportionately, more youth in Oromia are able to obtain land and establish a family with an agricultural livelihood than the youth in the SNNP. Of the households in our Oromia sample, 25% are youth, while in the SNNP, the rate is only 6%.

(c) *Youth land access options*

(i) *Land allocation from authorities*

Since 1975, youth in rural areas of Ethiopia have been obtaining agricultural land from village administrative authorities in their community or from their parents. Currently, however, land administrators in the highlands of Ethiopia have limited capacity to accommodate the young rural residents. A total of 95 youth in our sample reported to have secured some type of individual access to farm land. However, only 6 obtained land from the land administrative authorities. This demonstrates that land access from the government no longer serves as a safety net for youth.

(ii) *Youth land access through gift and inheritance from parents*

As land cannot be bought or sold in Ethiopia and because there are also restrictions on land rental markets, particularly on long-term rentals, inheritance and donations from parents have become the main source of land access for the new generation. As previously indicated, the average farm size for our sample households is 0.86 hectares. This is barely sufficient to sustain a family under the current agricultural production system. The majority of parents, however, recognize that their farm is the main source of land access for their children and believe that they need to hand down at least part of their farm before they die. In response to questions regarding land transfer to children, 90% of the household heads in our sample reported that they are willing to transfer at least part of their current farm to their children while they are still alive. On average, they intend to transfer 46% of their current holdings. With the new legal restrictions on farm sizes (see below), this may imply only informal land transfers to children in the case of very small farm sizes (Table 3).

Parents do not necessarily give their children their less desired part of the farm. In fact, proportionately, more people intend to hand over the land closer to the homestead (40%) than the land farther away from the homestead (30%). Only 3% of household heads indicated that they will transfer the less fertile land as opposed to 13% who reported the intention to transfer the more fertile land. It appears that parents hold on to their land to maintain their family and then transfer part of their land to their children as the need arises.

(iii) *Small farms, many inheritors*

As farm sizes in our study areas are small relative to the household sizes, allocating parents' land among children is a challenge. An estimate based on current land holdings of parents in our sample shows that if parents were to allocate their land to all sons and daughters, each would receive, on average, 0.22 hectares (see Table 4). This is such a small amount of land that it cannot even be formally registered as a new separate farm unit. According to the 2005 Land Use Law , "*where rural*

Table 3. *Willingness of parents to hand over farm land to their children in their life time*

District	Parents plan to hand over farm land while alive (% of respondents)	Land size to be given (% of current holding)	*N*
Shashemene	90	47	102
Arsi Negelle	82	46	144
Wondo Oromia	93	42	40
Wondo Genet	87	47	125
Damot Sore, Wollaita	90	46	197
All	88	46	608

Source: Own survey data.

Table 4. *Land holding of parents (in hectares) in relation to potential inheritors, by region*

	SNNP		Oromia		Total	
	Mean, ha	*N*	Mean, ha	*N*	Mean, ha	*N*
Farm size/household size	0.09	322	0.20	287	0.14	609
Farm size/Own children living with the household	0.14	298	0.30	278	0.22	576
Farm size/Male offspring living with the household	0.25	280	0.53	266	0.39	546

Source: Own survey data.

land is transferred by succession, it shall be made in such a way that the size of the land to be transferred is not less than the minimum size holding" (FDRE, 2005, Section 11-2). The minimum size referred to is 0.5 hectares in the annual cropping systems and 0.25 hectares in the perennial zones. Even if farmers are to bequeath all land only to their sons, the average land that each receives would still be below the minimum size for a large share of the households. More importantly, such farm sizes are too small to be the basis of a single source of livelihood under the current agricultural system.

Under these circumstances and legal restrictions, one option for maintaining formal land access for all children is a co-management strategy among siblings and/or parents. This does not, however, solve the concern for household food security unless supplementary sources of income can be found. Another option is for some of the inheritors to willingly forfeit their inheritance right or for parents to select inheritors from among their children. The risk in this case is conflict among siblings. Alternatively, as is common in many other countries, one of the inheritors may compensate the others for their share and keep the land. We have no evidence of this type of arrangement among our sample households, and it is not clear if this could be considered as land sale, which is prohibited. As these land transfer issues are increasingly pressing, some form of regulation may help to reduce possible sibling competition and within-household conflicts. About 30% of the household heads in our sample believe that there is competition for land among their children. Better off-farm employment opportunities due to rapid economic growth in the country may also reduce the pressure and facilitate youth access to other livelihood opportunities outside the family farm.

Table 5. *Households who intend to bequeath land to daughters*

District	Percentage
Shashemene (Oromia)	34.7
Arsi Negelle (Oromia)	43.8
Wondo Oromia (Oromia)	42.5
Wondo Genet (Sidama)	30.9
Damot Sore (Wollaita)	6.1
All households	27.2

Source: Own survey data.

(iv) *Female youth land access*

Currently, only 3% of all landholders in Ethiopia are young women (CSA, 2012a) even though the Ethiopian land laws provide equal land acquisition and use rights to male and female citizens. Whether young women practically have equal access to land depends on their ability to obtain land from their parents, who are now the main source of land access. One question in our survey for household heads on this issue reveals that most girls and women will not be inheriting land from their parents (Table 5). Three-fourths of the household heads in our sample admit that none of their daughters will ever inherit land from them. In Damot Sore, where farm sizes are very small, only 6% of household heads have any intention of bequeathing land to their daughters. The main source of access to land for young women must then be through marriage to a young man with land access, according to the Ethiopian tradition of women moving to the homestead of their husband upon marriage.

We expected that the recently introduced land registration would increase the probability of daughters inheriting land from parents as their names are typically registered in relation to household land holdings and land certificates. However, this does not seem to make any difference in the areas studied. The proportion of household heads who intend to bequeath land to their daughters does not differ based on land registration or certification status. It seems, however, that education has a stronger correlation with land inheritance by daughters. Household heads who intend to bequeath land to their daughters have, on average, four years of education while those who do not intend to do so have an average of 2.8 years of education; the difference is statistically significant at a 1% level of significance. Those who bequeath land to their daughters also have a higher per capita land holding, thus indicating that land scarcity contributes to the decision to exclude daughters from inheriting land (Table 6)

A parallel question for the youth exploring their expectation of land inheritance shows that young women have a lower expectation of land inheritance than young men, though their expectation is certainly higher than that for which their parents are prepared. While 74% of young men expect to inherit land, only 41% of the young women expect to do so.

Parents' expectations with regard to youth's economic activity and responsibility may differ across different cultures, which may in turn influence their decision about engaging

Table 6. *Household characteristics and the decision to bequeath land to female children*

Household character	Will daughters inherit?			Significance test
	No	Yes	Total	
Education of household head (years)	2.80	4.10	3.16	****
Age of household head	43.44	44.30	43.67	
Per capita land holding (hectares)	0.13	0.18	0.14	****
Household have land certificate	0.82	0.84	0.83	

Source: Own survey data. Significance level: ****: 0.1%.

their children in farming and on their land bequeathal decision. Table 7 summarizes land transfer and related decisions for the three main ethnic groups in our sample.

In general, getting married seems the surest way of receiving land from parents. Close to 60% of all households believe that the most appropriate time to transfer land to children is when they get married. It is most important for farmers in the Sidama ethnic group where the figure is 80%. This may have implication on how marriage and livelihood choice are related. Those who want to delay marriage know that they have less likelihood of accessing land from their parents and may thus choose to migrate or engage in non-farm activities. Adult youth from the Oromo ethnic group have a better chance of getting land than adult youth from other ethnic groups even if they are not married. One-third of the parents in the Oromo ethnic group indicates that the best time to transfer land to a child is when he or she becomes an adult. Young women have better chance of inheriting land in the Oromo communities and least chance of inheriting land in the Wollaita community.[5] It appears that children in Oromo households have more equal opportunity among themselves than in other ethnic groups that prioritize married children or male children for land transfer. The risk with such an egalitarian system is that when land inheritance or transfer is expected by all of the children, increased land scarcity may result in land-related conflicts. Our data show that 40 % of household heads in the Oromo ethnic group believe that there is competition for land among their children while only 15% of the Wollaita household heads have similar expectation, although the Wollaita households in our sample have much smaller land holdings.

(d) *Youth livelihood strategies*

(i) *Choice of livelihood/occupation*

Table 8 shows the current occupations of the youth in our sample. The majority are students, thus indicating that they are primarily engaged in developing their human capital. Proportionately, more youth in the Wondo Genet district, the cash cropping area, reported education as their primary occupation, while the highest percentage of youth who reported farming as their primary occupation is registered in the Wondo Oromia district, an area to which more people have migrated recently due to its high agricultural potential. While the youth unemployment rate is 7% for the sample, the rate is double that for the youth in Arsi Negelle.

As previously noted, 94% of the youth in our sample live with their parents and are perhaps dependent on their parents for their current sustenance as well as their education opportunities. In addition, 41% are minors (younger than 18 years of age). Thus, while the youth may be participating in the household's farm or non-farm activities, current youth participation in any productive activity may not be reflective of future livelihood strategies or occupational choices. As argued in section two, current employment in these situations may reflect the labor allocation decision of parents, of the youth or both. Nonetheless, the youth should be able to identify their future livelihood strategies based on their current preferences, skills, expected human and physical capital accumulation, and incentives from the market. Therefore, to understand the livelihood they are likely to choose, we asked youth respondents what their 'planned future livelihood/occupation' is. We emphasized the 'planned' aspect of the question during the survey by probing for concrete answers because we want to make sure that respondents do not report aspirations and wishes. Table 9 reports youth livelihood choices.

We found that a surprisingly small percentage (9%) of these rural youth chose agriculture as their future livelihood. The rest choose non-farm local wage employment, business, or urban salaried employment. Most of those who intend to engage in farming either plan to take over the farm from their parents or farm jointly with their parents. Although agricultural resettlement has been considered a way out of the land

Table 7. *Land-related expectations and decisions by ethnic groups of sample households*

	Oromo (%)	Sidama (%)	Wollaita (%)	All (%)
Female children will not inherit	60	75	92	72
When to transfer land to children				
At marriage	42	81	70	57
When son/daughter becomes adult	35	9	16	25
When both parents die	14	4	4	10
Other	9	6	10	9
Land relation and competition				
Own children work on parents land	73	83	53	67
Household head believes there is competition for land among his/her children	40	30	15	29
Sons/daughters informed whether they inherit	59	28	34	46

Source: Own survey data.

Table 8. *Main occupation of youth respondents (percentages)*

	Shashemene	Arsi Negelle	Wondo Oromia	Wondo Genet	Damot Sore	Total
Student	68	61	52	81	59	66
Farmer	24	19	33	6	13	16
Engaged in Off-farm wage employment	2	2	6	6	11	5
Engaged in business	0	5	9	4	13	6
Unemployed	6	13	0	3	5	7

Source: Own survey data.

Table 9. *Summary of preferred livelihood/occupation choice as reported by youth*

Livelihood choice	Male youth %	Female youth %	All youth %
Farming	11.7	6.2	9.4
Off-farm wage employment	3.7	1.7	2.9
Self-employment/Business	32.5	26	29.9
Urban salaried employment	52.1	66.1	57.8
Total (Observation)	100(351)	100(242)	100(593)

Source: Own survey data.

scarcity problem, particularly in the SNNP, only one person in our sample plans such resettlement. Off-farm wage employment constitutes wage employment in the village, while business could be in the village or away from the village. Urban salaried employment includes those who want to work in government offices or private companies. Approximately, half of those who chose urban salaried employment plan to first pursue higher education before seeking employment.

Table 10 displays the characteristics of youth who chose each livelihood strategy. Compared to other livelihood types, those who chose farming were older, more likely to be married, had farming experience, and expected to inherit land. We see proportionately more students among those who chose urban salaried employment than in the other livelihood. A comparison of assets across households shows that youth who chose off-farm wage employment came from poorer households and households who have a larger number of children, which is indicative of a push factor as an incentive. The youth characteristics reinforce this finding. Youth who expect to inherit land are less likely to choose off-farm wage employment compared to other livelihood strategies. These statistics seem to be consistent with earlier studies with respect to non-farm employment in Ethiopia where unskilled off-farm wage employment is shown to be the least well-paying of the non-farm employment opportunities and seems to attract the most desperate job seekers due to lower entry barriers (Bezu *et al*., 2012; Woldenhanna & Oskam, 2001). However, entry barriers may exist even for unskilled off-farm wage employment in Ethiopia due to search costs, seasonal work, and risk/uncertainty related to finding such employment (Holden, Shiferaw, & Pender, 2004). A detailed econometric analysis is provided in the next section.

(ii) *The migration angle of livelihood choice*

The urban salaried employment chosen by 58% of the rural youth, as reported in Table 9, suggest significant urban migration in the next few years. [6] However, a follow up study would be required to determine how much of the planned activity will actually occur and, eventually, how the youth respond to an expanded, local, non-farm employment opportunities.

To have some evidence on past migration among the rural youth, we collected information on the whereabouts of household members that were registered in 2007 survey. The compiled data give us information on migration in the periods 2007–13, which is reported in Table 11. We found that 15% of the youth and adolescent population in 2007 had migrated by 2013.

Damot Sore in Wollaita has the largest migration rate (31%). While this area resembled a prototype Malthusian poverty trap in 2007, it still had very little outmigration. However, from 2007 to 2013, there was a drastic change in the employment strategies of the youth in this area. From informal discussions in urban areas, we learned that youth from Wollaita have, in the recent years, 'taken over the shoe shiner market' in Addis Ababa, thus indicating that the high level of migration in our sample is not an exception. This is a remarkable change in a few years, thus suggesting that this type of migration can really explode when the internal population pressure in a subsistence community has reached a level beyond its carrying capacity. With the continued rural population growth, increasingly more rural communities will soon reach similar and comparable situations for their youth populations. Data from an intercensal survey in Ethiopia also show similar pattern at the national level. From evaluation of the origins of migrants, it is evident that historically there is more rural to rural migration than rural to urban migration but it seems to have changed in recent years. Among all migrants, the rural to rural migrants account for 37% of migrants while the rural to urban migrants account for 33%. However, among recent migrants (since 2007) rural to urban migrants account for 39% of all migrants while rural to rural migrants account for only 27% (CSA, 2013b).

While the push factors in the rural areas such as population pressure, land scarcity, lack of alternative livelihoods, and weather shocks can be major incentives for youth to migrate to urban areas, the pull factors are also as much important. The rapid economic growth Ethiopia experienced in recent years [7] created several employment opportunities in the

Table 10. *Youth and household characteristics by livelihood choice*

	Type of livelihood the youth chose							
	Farming		Off-farm wage employment		Business		Urban salaried employment	
	Mean	Std.Dev	Mean	Std.Dev	Mean	Std.Dev	Mean	Std.Dev
Individual characteristics								
Age of youth	20	3.88	18	2.67	20	3.65	18	2.95
Highest grade completed	6	3.15	6	3.54	7	3.40	8	2.52
Married youth[a]	0.30	0.46	0.12	0.33	0.18	0.38	0.06	0.23
Student[a]	0.39	0.49	0.65	0.49	0.38	0.49	0.86	0.35
Youth with farming experience[a]	0.89	0.31	0.82	0.39	0.79	0.41	0.80	0.40
Youth expect to inherit land[a]	0.69	0.47	0.50	0.52	0.57	0.50	0.61	0.49
Household characteristics								
Number of children in the household	6.02	2.65	7.00	3.64	6.34	2.93	6.64	3.08
Livestock owned (in tlu)	3.48	3.65	2.95	2.23	3.22	4.23	4.00	5.31
Value of non-livestock assets (in '000 EB)	6.17	27.79	0.94	1.02	6.07	23.60	3.46	6.76
Land holding (hectares)	1.29	0.92	0.84	0.88	1.02	0.80	1.11	0.88

Source: Own survey data.
[a] The figures refer to proportion in each livelihood choice. For example 39% of those who chose farming are students.

Table 11. *Youth migration in Ethiopia*

District name	Migration by destination (% of youth who migrated)					
	Abroad	Addis Ababa	Other towns	Other Rural Areas	All	*N*
Shashemene	1.2	0	1.2	2.1	4.6	241
Arsi Negelle	2.5	1.2	6.2	1.2	11.2	401
Wondo Oromia	0	0	1.6	0	1.6	64
Wondo Genet	0.6	2.5	3.4	0	6.5	325
Damot Sore	0.2	5.1	21.6	4.4	31.3	450
Total	1.1	2.4	9.3	2	14.8	1481

Note: Percentage of youth and adolescents (10–30 years old) who migrated during 2007–13.
Source: Own data.

construction and service sector and to some extent in the manufacturing sector in urban areas. Success of relatives, friends, and other networks that have already migrated to the urban areas typically serve as a strong positive signal for potential migrants. Moreover, a massive expansion in infrastructure, technology, and education in the last two decades also make the cities increasingly more appealing to rural residents and particularly to youth who may be more exposed to this information through the media and school. The expansion of well-serviced roads to district centers and in some cases to villages as well as the absence of restrictions on labor movement, that were in place in previous regime, all contribute toward higher interest and ability to migrate to urban areas now than before.

5. EMPIRICAL APPROACH

To analyze the determinants of livelihood choice, we estimated a multinomial logit model based on the familiar random utility framework (Maddala, 1983). The response probabilities for our multinomial logit model with four alternatives can be given as,

$$pr(y = j/\mathbf{x}) = \frac{\exp(\mathbf{X}\beta_j)}{\left[1 + \sum_{j=1}^{4} \exp(\mathbf{X}\beta_j)\right]}, \quad j = 1, \ldots 4$$

where j denotes the alternative livelihoods that include: Agriculture; Off-farm wage employment; Off-farm self employment; and Urban salaried employment. $\mathbf{X}$ is a vector that denotes factors that influence the livelihood choice of youth. The coefficients on these explanatory variables differ for each alternative. The factors that are expected to influence livelihood choice of the youth include both individual level factors and household level factors. The individual level factors are characteristics of youth (age, gender, marital status, birth rank, whether the youth is a student), and endowment of the youth. Endowment of the youth include own human capital such as education as well as networks such as having relatives in the non-agricultural livelihood. The household factors include land holdings, wealth, age, and education of the household head, and demographics. In addition we included district dummies to control for local variations in available opportunities and constraints. These local variations include differences in agro-ecology, population pressure, and access to infrastructure and information. The main hypothesis we want to test is whether land access influence livelihood choice of youth. As the law prohibits the sale and purchase of land and restricts land rent, the most important source of land access is parents' land which may be inherited or shared. Potential land access is captured by the variable 'household land holding per own child'.[8] We hypothesize that youth who have good land access are more likely to choose agricultural livelihood.

To analyze migration among the youth and adolescent, we estimated a probit model of migration outcome. We have data on all youth and adolescents who were 10–30 years in 2007. We then have another set of data from 2013 that reports which of these young people have migrated in the six years. The probit model estimates the probability of migration and explores factors that explain the migration outcome. We use the 2007 data to estimate the model. The dependent variable is a binary variable that takes the value one if the youth migrated (based on information from the 2013 survey) and zero otherwise. The explanatory variables are largely similar to those in the multinomial model of livelihood choice but we did not include individuals' network as such data were not collected in 2007. Our main hypothesis in this migration model is that youth who belong to households with larger land holdings are less likely to migrate than those youth from land poor households.

6. RESULTS AND DISCUSSION

(a) *Livelihood choice*

We estimated two models to assess the correlations between individual and household characteristics and livelihood choices. The first model includes individual characteristics of the youth, farm holdings, and household characteristics. These factors are expected to influence the relative return from and preference for agricultural and non-agricultural livelihoods. The second model includes additional variables that show siblings' involvement in local non-agricultural activities and migration as these also may affect the youth information, network, experience, and motivation. The second model also includes district dummies to test if livelihood choice differs by place of residence in rural areas. The district dummies also control for different access to infrastructure, information, and agro-ecological conditions. Because we have more than one youth per household, the standard errors are corrected for clustering at the household level. Table 12 reports the results from the models. Agriculture is the reference livelihood category in the reported model. The likelihood statistics show that the inclusion of the additional factors in the second model improves the explanatory power of the models. The results are otherwise largely consistent across the two models.

The coefficients in a multinomial model are calculated and reported in relation to the base outcome and thus not easy to interpret directly like the linear models (Wooldridge, 2002). However, the signs are informative and, in addition, average marginal effects can be predicted, which also provide useful insights. Farm size has a consistently negative and statistically significant correlation with choice of livelihood outside of agriculture. An increase in parent farm size decreases the likelihood of young men and women choosing a livelihood outside of agriculture relative to farming. This indicates that

Table 12. *Multinomial models of determinants of livelihood choice by female and male youth in Southern Ethiopia*

	Off-farm wage employment		Off-farm self employment and business		Urban salaried employment	
Variables	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Female youth	−0.333	0.087	0.306	0.491	0.740*	0.950**
	(0.70)	(0.74)	(0.41)	(0.43)	(0.40)	(0.43)
Age	−0.108	−0.144	−0.013	−0.031	−0.087	−0.100
	(0.11)	(0.11)	(0.06)	(0.06)	(0.06)	(0.07)
Education (years)	0.265	0.362*	0.067	0.116*	0.229****	0.274****
	(0.18)	(0.19)	(0.05)	(0.06)	(0.06)	(0.07)
Currently student	0.930	1.303	−0.108	0.131	1.872****	2.298****
	(0.92)	(1.06)	(0.43)	(0.44)	(0.44)	(0.46)
First born	−14.213****	−15.475****	−0.416	−0.283	−0.175	−0.087
	(0.48)	(0.52)	(0.42)	(0.44)	(0.42)	(0.44)
Married	−0.927	−0.650	−0.661	−0.459	−1.384***	−1.159**
	(1.02)	(0.96)	(0.45)	(0.45)	(0.50)	(0.53)
Farm size per own child (in hectares)	−5.329*	−7.559*	−2.691***	−2.616***	−2.205***	−2.703***
	(2.99)	(4.35)	(0.86)	(0.86)	(0.70)	(0.91)
Age of household head	−0.019	−0.005	0.003	0.007	0.007	0.013
	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
Education of household head (years)	0.127	0.072	−0.080	−0.112*	−0.010	−0.054
	(0.11)	(0.11)	(0.05)	(0.06)	(0.06)	(0.07)
Number of brothers and sisters	−0.001	0.028	0.030	0.037	0.035	0.051
	(0.13)	(0.16)	(0.09)	(0.09)	(0.09)	(0.09)
Livestock holding (tlu)	−0.004	−0.069	−0.025	−0.012	0.006	0.002
	(0.05)	(0.11)	(0.04)	(0.04)	(0.03)	(0.03)
Value of assets owned	−1.074**	−1.018**	0.155	0.311	−0.037	0.119
	(0.45)	(0.44)	(0.15)	(0.21)	(0.16)	(0.21)
Number of siblings migrated		−0.362		−0.112		−0.175
		(0.34)		(0.17)		(0.16)
Number of siblings in business		−0.173		0.739**		0.568
		(0.86)		(0.37)		(0.38)
Number of siblings in nonfarm employment		0.436		0.054		−0.088
		(0.59)		(0.17)		(0.18)
Arsi Negelle		1.825		1.088**		1.654***
		(1.39)		(0.54)		(0.51)
Wondo-Oromia		3.618*		0.527		1.598**
		(2.09)		(0.63)		(0.64)
Wondo Genet		−14.682****		0.448		0.349
		(1.30)		(0.59)		(0.64)
Damot Sore (Wollaita)		2.408**		1.701***		2.030***
		(1.14)		(0.60)		(0.65)
Constant	8.005**	6.141	0.502	−1.929	0.804	−1.884
	(3.57)	(4.15)	(1.62)	(1.93)	(1.77)	(2.06)
Prob > chi2		0.000	0.000	0.000		
Loglikelihood		−472.458	−407.336	−400.825		
Number of Obs.		566	535	535		

Note: The reference livelihood strategy (base outcome) is agriculture. The reported values are coefficients followed by standard errors in parenthesis. Significance levels: *: 10%, **: 5%, ***: 1%, ****: 0.1%.

an important factor driving rural youth away from farming is the lack of land access. The average marginal effect of changing the covariates on the probability of choosing farming as a livelihood is shown in Table 13. The results show that a 1% reduction in per capita farm size is associated with a 0.05 decline in the probability of youth choosing farming as their livelihood. Accordingly, youth from land-poor households are less likely to show interest in agricultural livelihood.

Compared to their male counterparts, young women are more likely to choose urban salaried employment than farming. This is perhaps due to the cultural influence because, in most parts of Ethiopia, agriculture is typically a man's domain. Furthermore, women and girls are less likely to inherit land from their parents, which limits their access to the basic resource for an agricultural livelihood. Controlling for the age factor, respondents who are currently studying are more likely to choose urban, salaried employment than those who are no longer students. This may be because those who are still attending school have higher hopes of achieving their objectives through education than those who are no longer pursuing an education. More education, captured in the number of successfully completed grades, increases the likelihood of choosing urban salaried employment. This is perhaps because, in addition to the impact of information on one's interest, an increase in educational achievement increases one's expectation of success in the urban sector. Education is also positively correlated with the likelihood of choosing off-farm wage employment and business, but the coefficients are significant only at the 10% level. The positive correlation between education and non-farm employment is

Table 13. *Average marginal effects of covariates on the probability of choosing farming as a livelihood strategy*

	dy/ex	Delta method		$P > z$
		Std. Err.	z	
Female youth	**−0.015**	**0.007**	**−2.210**	**0.027**
Age	0.092	0.090	1.030	0.304
Education (years)	**−0.093**	**0.026**	**−3.550**	**0.000**
Currently student	**−0.054**	**0.011**	**−4.840**	**0.000**
First born	0.003	0.008	0.440	0.662
Married	0.012	0.010	1.250	0.213
Farm size per own child (in hectares)	**0.047**	**0.014**	**3.300**	**0.001**
Age of household head	−0.034	0.031	−1.120	0.265
Education of household head (years)	0.017	0.015	1.140	0.252
Number of brothers and sisters	−0.022	0.042	−0.510	0.607
Livestock holding (tlu)	0.002	0.007	0.210	0.835
Value of asset owned	−0.104	0.104	−1.000	0.320
Arsi Negelle	**−0.028**	**0.007**	**−3.790**	**0.000**
Wondo-Oromia	**−0.005**	**0.002**	**−2.620**	**0.009**
Wondo Genet	−0.008	0.010	−0.750	0.453
Damot Sore	**−0.017**	**0.004**	**−4.070**	**0.000**
Number of siblings migrated	0.009	0.011	0.780	0.438
Number of siblings in business	**−0.007**	**0.002**	**−3.850**	**0.000**
Number of siblings in nonfarm employment	0.000	0.004	−0.050	0.964

Bold values indicate statistically significant correlation in the regression.

one of the most consistent relations found in the literature (see, for example, Reardon, 1997; Reardon *et al*., 2001; Winters *et al*., 2009).

While first-born children are less likely to engage in off-farm wage employment in relation to farming, this does not affect their decision concerning other livelihoods. This is because first-born children are more likely to inherit land, and hence, they may prefer to work in farming rather than in off-farm wage employment, pointing toward a lack of land access as a push factor to engage in less attractive off-farm, low-wage employment. Married youth are less likely to choose urban salaried employment as a livelihood option, perhaps because married people have family responsibilities and are therefore more likely to settle for what is available in the village. Marriage is often also associated with obtaining land from parents. Marital status also has a negative correlation with off-farm business, though it is statistically significant only at 10%.

Household characteristics, other than assets owned, have little effect on livelihood choice. The value of assets owned by the household to which the young person belongs is negatively correlated with the likelihood of choosing off-farm wage employment as a livelihood. This may indicate that youth from more financially stable households see agriculture as better paying than off-farm wage employment. We also found that having brothers and sisters who are engaged in business is positively correlated with the likelihood of choosing off-farm self-employment, indicative of the impact of information as well as capital access.

Spatial variations also exist such that, compared to Shashemene, young people from Arsi Negelle and Damot Sore were more likely to choose off-farm business and salaried employment over farming. This may be an indication that farming activity in Shashemene is more rewarding than it is in the other two districts or that it is easier to combine farming with non-farm activities near this small market town. Farming in Damot Sore is subsistence oriented and farm size in the area is very small. While farms in Arsi Negelle are, on average, larger than those in other areas, some of the villages have been food insecure in the past, indicating higher rainfall and poorer performance of agriculture. Youth in Wondo Genet were less likely to choose off-farm wage employment over farming, which is to be expected because Wondo Genet is a cash crop production area where agriculture yields higher returns than off-farm wage employment. However, young people in Damot Sore are more likely to choose off-farm wage employment due to the higher level of poverty, severe land scarcity and, therefore, a stronger push toward low-paying, off-farm livelihood opportunities.

In summary, it appears that young people choose unskilled off-farm wage employment if their condition is more desperate because of the lack of land access and viable livelihood opportunities (push factors), while urban salaried employment seems to be an attractive opportunity for those with the resources, education, and flexibility to explore such opportunities (pull factors). This is consistent with findings in the income diversification literature, which documents that participation in unskilled off-farm wage employment is driven by poor performance and risk in the agricultural sector (see Reardon, 1997).

(b) *Determinants of migration*

Table 14 reports results from a probit model of migration outcome. The first column reports results from a regression model that includes only individual and household level determinants. The second column shows results from a model that further includes the district dummies, as these results capture meso-level determinants such as infrastructure, market access, population pressure, and agro-ecology. A third model includes the interaction terms between farm size and district dummies to test if farm size has varying impacts across districts. The results of this model are reported in column three.

We found that education is a strong driver of youth migration. Education level is strongly positively associated with migration. Education brings information about opportunities outside of one's immediate surroundings and raises expectations for a better life, thereby encouraging youth to explore new opportunities. The coefficient for farm size is negative and highly statistically significant in the first model. This indicates that households with smaller farm sizes are more likely to see their youth members migrate. However, the significance disappears when we include district dummies, although it still

Table 14. *Factors associated with household member migration decisions*

	Model 1	Model 2	Model 3
Female youth	−0.024	0.010	0.008
	−0.090	−0.090	−0.090
Age	−0.016	−0.037	−0.039
	−0.070	−0.070	−0.070
Age, squared	0.001	0.001	0.001
	0.000	0.000	0.000
Education level	0.103****	0.110****	0.112****
	−0.020	−0.020	−0.020
Ln (Farm size), ha	−0.165***	−0.030	0.187
	−0.060	−0.070	−0.150
Female headed	−0.256	−0.243	−0.249
	−0.180	−0.180	−0.180
Age of Household head	−0.007	−0.003	−0.003
	−0.010	−0.010	−0.010
Education household head	−0.008	−0.005	−0.003
	−0.020	−0.020	−0.020
Male work force	−0.016	0.011	0.010
	−0.040	−0.040	−0.040
Female work force	−0.033	−0.022	−0.015
	−0.050	−0.050	−0.060
Household size	0.039*	0.017	0.020
	−0.020	−0.030	−0.030
Livestock (in tlu)	−0.048***	−0.029**	−0.028**
	−0.020	−0.010	−0.010
District dummies: Baseline = Shashemene			
Arsi Negelle		0.365**	0.442**
		−0.180	−0.200
Wondo Oromia		−0.428	−0.350
		−0.400	−0.400
Wondo Genet		−0.073	0.247
		−0.240	−0.260
Damot Sore (Wollaita)		1.102****	1.079****
		−0.180	−0.200
Arsi Negelle X Ln (farm size)			−0.271
			−0.200
Wondo Oromia X Ln (farmsize)			0.052
			−0.310
Wondo Genet X Ln (farmsize)			0.039
			−0.230
Damot Sore X Ln (farm size)			−0.317*
			−0.180
Constant	−1.206*	−1.731**	−1.845***
	−0.630	−0.680	−0.690
Prob > chi2	0.000	0.000	0.000
Loglikelihood	−541	−486	−483
Number of observations	1393	1393	1393

Note: Probit estimates of migration decision for adolescents and youth (age > 10 & < 30) 2007–13. Standard errors corrected for clustering at household level. Significance levels: *: 10%, **: 5%, ***: 1%, ****: 0.1%.

has a negative sign. This is perhaps because farm sizes are strongly correlated with the district dummies. Particularly, the Damot Sore district dummy is likely to capture much of the farm size effect. The third model includes an interaction variable to test whether farm size has varying impacts across districts. Land size is negatively correlated to migration in Damot Sore, where migration probability is the highest. However, it is significant only at a 10% level of significance. We see that livestock-poor households are more likely to have migrating youth members. This may imply that resource poverty is a push factor as livestock is an indicator of wealth. Livestock is also one of the things that link youth to the land through the use of oxen for ploughing, livestock herding, and/or the sale of livestock products.

7. CONCLUSIONS

In a country where almost six out of ten farm households cultivate less than one hectare of land, a growing youth population in rural areas poses a challenge in terms of ensuring access to land and to a livelihood. This study examines land access and livelihood choice of rural youth in Southern Ethiopia.

Although Ethiopia's constitution formally guarantees youth rights to rural land if they wish to establish a livelihood in agriculture, the practical applicability of this formal right depends on the availability of local land, inheritance customs, and local administrative processes for land allocation. We found that youth in rural areas in Southern Ethiopia face severe land access constraints. Land cannot be bought in the market and cannot be rented on a long-term basis from other farmers. Furthermore, as local authorities do not have unoccupied land to allocate, they cannot provide the youth with their constitutional right to land. As a consequence, parents have become the major source of farmland. However, the land that can be obtained from parents through inheritance is too small to establish a meaningful livelihood for a rapidly increasing share of the rural youth.

As a result of the lack of land access, youth are looking toward other livelihood options. Only 9% of the youth in our sample chose agricultural as their future livelihood while the others plan non-agricultural employment. However, other alternative employment opportunities are currently very limited. On the other hand, the recent expansion of the service sector and construction industries in urban areas of Ethiopia, alongside better access to infrastructure and information in rural areas created a strong pull toward urban areas. We found that youth migration has significantly increased in the last six years, especially in the most densely populated study areas with poor market access. This was spontaneous migration by the youth themselves and was not a result of publicly organized activities or policies. The econometric analysis of livelihood choice and migration shows that the lack of land access is an important driver that pushes youth out of the traditional agricultural livelihood.

Youth unemployment is a growing international challenge. We provide new evidence of a very rapid transition of youth livelihood strategies in rural Ethiopia. Inability to address these land and livelihood access problems may result in social and economic crises not only in rural areas but also in urban areas where a rapidly increasing number of youth migrate.

Some of the measures that can be taken to ameliorate the situation include: improving non-farm employment opportunities in rural areas through youth-targeted employment-generating schemes and entrepreneurial trainings; relaxation of the restriction on land rental markets; and provision of group land access to the youth for high-value crop cultivation and livestock production. In addition, the land laws should be revised to ensure sustainable and equitable land access instead of a right that cannot be fulfilled. Even if the land access and employment problems are solved in rural areas, a significant amount of rural–urban migration is perhaps unavoidable since Ethiopia still has a very small share of its population in urban areas and urbanization typically involves significant rural–urban migration. Ethiopia may avoid the negative consequences of large-scale rural–urban migration if programs are designed to study migration patterns, prepare for it, and influence its direction.

NOTES

1. There is no globally agreed upon definition of youth. The UN defines youth as persons in the age group 15–24. The African Youth Charter defines youth as persons in the age group 15–35 (UN, 2014). In this paper we define youth as persons between the ages of 15 and 29. This is based on the definition of youth used in the Ethiopia's National Youth Policy (FDRE, 2004).

2. Because the survey was combined with field experiments on trust among siblings, youth who had no sibling in the same age group (15–29) were not included in the sample.

3. For the new sample (40 households), we used recall data, first by asking who lived in that household in 2007 and then collecting current information on each of those members. To be consistent, we used the same method for households who were in the sample in 2007, but in this case, we have the list of members from the 2007 survey, which we used for cross-checking. As a result of this cross checking, we were able to determine that parents in Wollaita tend to omit daughters from their list of offspring/children, especially if they were married even if they lived with them in 2007.

4. Historically, household heads are men who brought the land into the marriage and under whom the land is registered. The exception is female-headed households. However, with the recently introduced joint land certification, the household head is not the 'land holder' of the family land, as spouses are jointly registered.

5. Note however that households in the Oromo ethnic group in our sample have higher land holdings than the Sidama and Wollaita households.

6. If we were to generalize this rate for the country's rural youth and adolescent population, the figures are staggering. Close to 17 million young people in Ethiopia may move to urban areas and establish their livelihood there in the next few years. Our sample is not nationally representative.

7. In 2012, Ethiopia was the 12th fastest growing economy in the World and in the 2004–05 to 2011–12 period. Ethiopia's economy grew at 10.6%, higher than the regional average of 5.4% (Geiger & Moller, 2013).

8. While a household may contain members other than own children and parents, it is not possible from these data to identify those members who are long-term members that may have similar land inheritance 'right' to own children. Since short-term residents are not likely to inherit/share land of the household, we used land holding/own children to denote the land that the youth may receive from parents.

REFERENCES

Barrett, C. B., Reardon, T., & Webb, P. (2001). Nonfarm income diversification and household livelihood strategies in rural Africa: Concepts, dynamics, and policy implications. *Food Policy, 26*(4), 315–331.

Becker, G. S. (1965). A theory of the allocation of time. *The Economic Journal, 75*(299), 493–517.

Bezu, S., Barrett, C. B., & Holden, S. T. (2012). Does the nonfarm economy offer pathways for upward mobility? Evidence from a panel data study in Ethiopia. *World Development, 40*(8), 1634–1646.

Binswanger, H. P., & Rosenzweig, M. R. (1986). Behavioural and material determinants of production relations in agriculture. *The Journal of Development Studies, 22*(3), 503–539.

Bryceson, D. F. (1996). Deagrarianization and rural employment in sub-Saharan Africa: A sectoral perspective. *World Development, 24*(1), 97–111.

Bryceson, D. F. (2002). The scramble in Africa: Reorienting rural livelihoods. *World Development, 30*(5), 725–739.

Bryceson, D. F., & Jamal, V. (1997). *Farewell to farms: De-agrarianisation and employment in Africa*. Ashgate Publishing Ltd..

CSAICF. (2012). *Ethiopia demographic and health survey 2011*. Addis Ababa, Ethiopia and Calverton, Maryland, USA: Central Statistical Agency and ICF International.

CSA. (2012a). *Agricultural sample survey 2011/2012, Volume IV: Report On Land Utilization*. Addis Ababa, Ethiopia: Central Statistical Agency.

CSA. (2012b). Household income, consumption and expenditure (HICE) survey 2010/11: Analytical report. *Statistical Bulletin*: Central Statistical Agency of Ethiopia.

CSA. (2013a). *National statistics abstract*. Addis Ababa, Ethiopia: Central Statistical Agency.

CSA. (2013b). *Report of the inter censal population survey*. Addis Ababa: Central Statistical Agency.

Deininger, K., & Jin, S. (2006). Tenure security and land-related investment: Evidence from Ethiopia. *European Economic Review, 50*, 1245–1277.

Ellis, F. (1998). Household strategies and rural livelihood diversification. *Journal of Development Studies, 35*(1), 1–38.

Ellis, F. (2000). *Rural livelihoods and diversity in developing countries*. Oxford: Oxford University Press.

FDRE. (2004). *National youth policy*. Addis Ababa, Federal Democratic Republic of Ethiopia.

FDRE. (2005). Federal rural land administration and utilisation proclamation. Federal Democratic Republic of Ethiopia.

FDRE. (2008). *Summary and statistical report of the 2007 population and housing census*. Federal Democratic Republic of Ethiopia: Population Census Commission.

Geiger, M., & Moller, L. C. (2013). *Ethiopia – Second economic update: Laying the foundation for achieving middle income status*. Washington, DC: World Bank Group.

Haggblade, S., Hazell, P., & Reardon, T. (2007). *Transforming the rural nonfarm economy: Opportunities and threats in the developing world*. Baltimore: Johns Hopkins University Press.

Holden, S., Shiferaw, B., & Pender, J. (2004). Non-farm income, household welfare, and sustainable land management in a less-favoured area in the Ethiopian highlands. *Food Policy, 29*(4), 369–392.

ILO. (2013). *Global employment trends for youth 2013: A generation at risk*. Geneva: International Labour Office.

Holden, S. T., & Yohannes, H. (2002). Land redistribution, tenure insecurity, and intensity of production: A study of farm households in Southern Ethiopia. *Land Economics, 78*(4), 573–590.

Lanjouw, J. O., & Lanjouw, P. (2001). The rural non-farm sector: Issues and evidence from developing countries. *Agricultural Economics, 26*(1), 1–23.

Little, P. D., Stone, M. P., Mogues, T., Castro, A. P., & Negatu, W. (2006). 'Moving in place': Drought and poverty dynamics in South Wollo, Ethiopia. *The Journal of Development Studies, 42*(2), 200–225.

Lundberg, S., & Pollak, R. A. (1993). Separate spheres bargaining and the marriage market. *Journal of Political Economy*, 988–1010.

Maddala, G. S. (1983). *Limited-dependent and qualitative variables in econometrics. Econometric Society monographs in quantitative economics*. Retrieved from WorldCat database.

Manser, M., & Brown, M. (1980). Marriage and household decision-making: A bargaining analysis. *International Economic Review, 21*(1), 31–44.

Matsumoto, T., Kijima, Y., & Yamano, T. (2006). The role of local nonfarm activities and migration in reducing poverty: Evidence from Ethiopia, Kenya, and Uganda. *Agricultural Economics, 35*(3), 449–458.
McElroy, M. B., & Horney, M. J. (1981). Nash-bargained household decisions: Toward a generalization of the theory of demand. *International Economic Review, 22*(2), 333–349.
Rahmato, D. (1984). *Agrarian reform in Ethiopia*. Nordic Africa Institute.
Reardon, T. (1997). Using evidence of household income diversification to inform study of the rural nonfarm labor market in Africa. *World Development, 25*(5), 735–747.
Reardon, T., Berdegue, J., Barrett, C. B., & Stamoulis, K. (2007). Household income diversification into rural nonfarm activities. In T. Reardon, S. Haggblade, & P. Hazell (Eds.), *Transforming the rural nonfarm economy: Opportunities and threats in the developing world*. Baltimore: Johns Hopkins University Press.
Reardon, T., Berdegue, J., & Escobar, G. (2001). Rural nonfarm employment and incomes in Latin America: Overview and policy implications. *World Development, 29*(3), 395–409.
Rigg, J. (2006). Land, farming, livelihoods, and poverty: Rethinking the links in the rural south. *World Development, 34*(1), 180–202.
Tefera, T. L., Perret, S., & Kirsten, J. F. (2005). Diversity in livelihoods and farmers strategies in the Hararghe Highlands, Eastern Ethiopia. *International Journal of Agricultural Sustainability, 2*, 133–146.
Todaro, M. P. (1969). A model of labor migration and urban unemployment in less developed countries. *The American Economic Review, 59*(1), 138–148.
UN. (2014). *Definition of youth*. United Nation Department of Economics and Social Affairs. Retrieved 1 June 2014, from <http://www.un.org/esa/socdev/documents/youth/fact-sheets>.
van den Berg, M., & Kumbi, G. E. (2006). Poverty and the rural nonfarm economy in Oromia, Ethiopia. *Agricultural Economics, 35*(Supplement 3), 469–475.
Winters, P., Davis, B., Carletto, G., Covarrubias, K., Quiñones, E. J., Zezza, A., *et al.* (2009). Assets, activities and rural income generation: Evidence from a multicountry analysis. *World Development, 37*(9), 1435–1452.
Woldenhanna, T., & Oskam, A. (2001). Income diversification and entry barriers: Evidence from the Tigray region of northern Ethiopia. *Food Policy, 26*(4), 351–365.
Wooldridge, J. M. (2002). *Econometric analysis of cross section and panel data*. Cambridge, Mass.: MIT Press.
WB. (2011). *Federal Democratic Republic of Ethiopia: Options for strengthening land administration*. Washington, DC, USA: World Bank.
Zewde, B., & Pausewang, S. (Eds.). (2002). *Ethiopia: The challenge of democracy from below*. Uppsala: Nordiska Afrikainstitutet; Addis Ababa: Forum for Social Studies.

APPENDIX A.

See Table 15.

Table 15. *Description of survey areas*

Region	District	Farm size	Agriculture	Access to roads and markets	Population
Oromia	Shashemene 4 villages	– Current average holding 1.15 ha – 22% of farms were below 0.5 ha in 2007	– Rain-fed plough agriculture – Cereal producing area	– Town of Shashemene (growing trade center) located in the district – District lies Along the road to Addis Ababa and Awassa – 4 villages at different distance from town	– 94% Oromo ethnicity – 98% Muslim
Oromia	Arsi Negelle 4 villages	– Current average holding 1.38 ha – 12% of farms were below 0.5 ha in 2007	– Rain-fed plough agriculture – Cereal producing area	– District lies along the road to Addis Ababa and Awassa – 4 villages at different distance from main road	– 92% Oromo ethnicity – 85% Muslim – Food insecure
Oromia	Wondo Oromia 2 villages	– Current average holding 0.84 ha – This sample was part of Shashemene district in 2007	– Perennial zone – Plough and hoe	– Geographically close to Wondo Genet-Sidama	– 97% Oromo ethnicity – 79% Muslim – 18% Protestant – A new district composed of communities from Sidama and Oromia zones
SNNP	Wondo Genet (Sidama) 3 villages	– Current average holding 0.55 ha – 64% of farms were below 0.5 ha in 2007	– Perennial zone – Have access to irrigation – Cash crops: sugarcane, chat, and coffee – Food crops: Maize and enset	– Good road access to towns of Awassa and Shashemene	– 60% Sidama ethnicity – 23% Oromo ethnicity – 90% Protestant
SNNP	Damot Sore (Wollaita) 4 villages	– 67% of farms were below 0.5 ha in 2007	– Perennial zone – Rain-fed subsistence agriculture – Main crops: Enset maize, root, and tuber crops	– Relatively remote area – Road access to towns not good	– 97% Wollaita ethnicity – 50% Protestant – 45% Orthodox Christian – Densely populated and poor