

Structural and cognitive drivers of small mechanisation among youth in Ethiopia

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Key highlights

- Small mechanisation entrepreneurship delivered early and superior benefits compared to public sector salaries. It can therefore attract and keep youth in agriculture.
- high-income levels are possible all year round if entrepreneurships have diversified products.
- Individual or small group (≤ 5) ownership models were highly viable for small-mechanisation entrepreneurship. There is low trust in collective ownership due to politicised process of selection business groups.
- Start-up capital and support networks were critical constraints for youth entrepreneurs because they had not made life savings.
- Low availability or acceptance of local equipment compared to Japanese etc. reduced opportunities entrepreneurial growth.
- Mechanisation-based entrepreneurship involves mobility, fits youth lifestyle aspirations when combined with ICT.
- There are future demographic dividends if mechanisation entrepreneurship is institutionalised. Like what?

Abstract

This paper analyses youth participation in small mechanisation-based entrepreneurship in Ethiopia. It is based on literature review, qualitative interviews and field questionnaire survey in the District of Asella. By virtue of their life cycle stage, youth have not saved or accumulated resources that enable access to credit, and have weak vertical networks. Their opportunity structure was low. However, by providing youth with two-wheel tractors (2WT) and allied equipment, the FACASI project enabled them to leverage small mechanisation to deliver early and multiple benefits from entrepreneurship. For instance, the average monthly income from successful entrepreneurships was US\$135, compared to average public sector monthly salary of 420 Ethiopian Birr (US\$22). This is a remarkable reality, significant to keep youth in rural agricultural economies if replicated. We conclude that mechanisation can halt city migration, by keeping youth in rural agriculture. However, mechanisation must be accompanied by entrepreneurship that generates sustainable, regular and higher benefits. Mechanisation is a pathway rather than an end in rural transformation. A pathway to youth employment, possible by enhancing access to enabling resource networks especially linkages with key organisations of support, among other entrepreneurial enablers.

Key words: *household cycle; demographic dividends, entrepreneurship*

1.0 Introduction

Agriculture directly and indirectly accounts for about 80% employment in Ethiopia. Agriculture is often the backbone of most viable livelihood options in many rural areas. For instance, about 60% of enterprises in Ethiopia are agricultural in nature. Out of these, micro and small enterprises (MSE) comprise 99%. It means MSE comprise around 60% of all private employment in the second largest population in Africa, >100 million people. Only 20% live in urban areas, and adult literacy is about 40%. Most (80%) of MSE are registered (Central Statistics Agency 2019).

Ethiopia is the most populous landlocked nation on earth, with a land area of 1,100,000 square kilometres. It is diverse; 83 languages (and ~200 dialects); 44% of it is Orthodox Christian; 34% is Islam; and 19% is Protestant Christian.

Youth, resources and entrepreneurship

The Ethiopia youth policy defines youth as part of the society who are between 15-29 years. For the purpose of this study, we shall use young adults (ages 18-35 years) category because of three reasons i) this category has legally allowable ages of workers ii) most persons become independent waged labour ii) and they are initiating their own households, with separate farm entrepreneurship from their parents. This category represents 25% of Ethiopia population (Fig 1). This category will still be 25% in 2050, the only category that will stay the same for the foreseeable future (Fig 2).

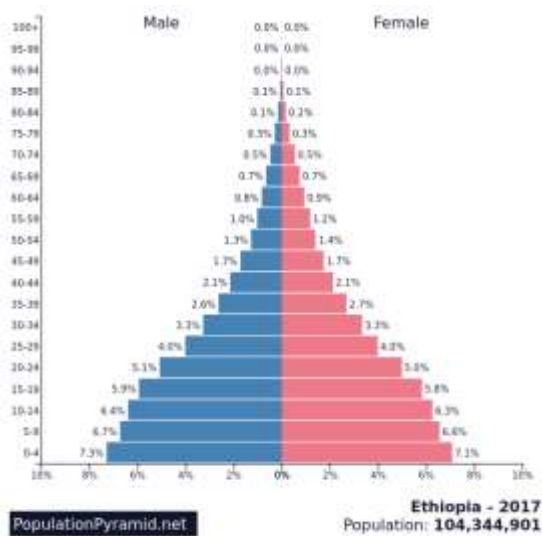


Fig. 1 Population of Ethiopia in 2017

Source: <https://www.populationpyramid.net/ethiopia/2017/>

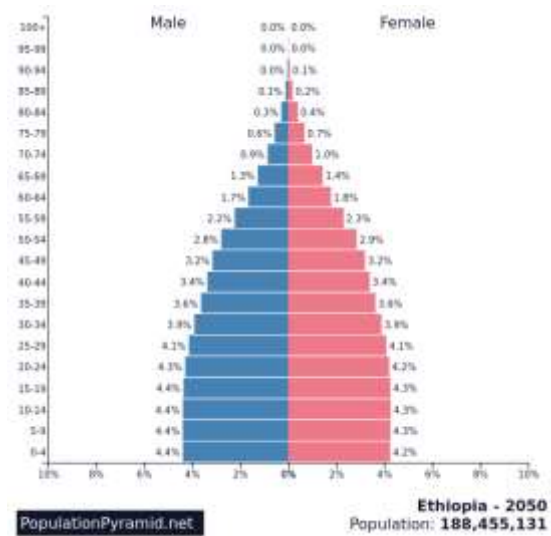


Fig. 2 Ethiopia population projections for 2050

This is the stage that household life cycle mostly begins (Wilkes 1995). Because of its relative lack of business experience, this group has limited business and institutional networks. During young adulthood, youth have limited access to land, employment, credit or simply life savings. More promising, nonetheless, is that this group is more amenable to business-oriented approaches to agriculture (e.g. Momani 2017; OECD 2014). In strategic terms, it is the most definite category for which the Ethiopian government needs a long-term policy to support (e.g. Sumberg et al., 2017); it offers a rare opportunity for long-term view on transformational planning. The age of Ethiopian farmer is increasing. If this trend continues, those within around the age of 35 will be ~60 years in 2050, which is likely to be the average farmer age if

Ethiopian agricultural trends follows similar development trajectories as more advanced economies (see also [Tanarwo 2016](#); [Liedhom and Mead 1999](#); [Mudavanhu et al., 2011](#)).

If current population growth remains same, landholding will continue to decline. More critical for Ethiopia, however, is the country will continue to be youthful for a long period, making it especially critical to generate youth employment.

Youth are an elusive target group

Sumberg et al. (2017) conclude that modernisation of agriculture that integrates youth is difficult. Youths are abandoning agriculture because it does not offer gainful employment ([Bezu and Holden 2014](#)). Mechanisation (or modernisation as referred to by Sumberg et al. 2017) without entrepreneurship cannot ensure widespread youths' integration in agriculture. This conclusion is based on historical precedent. Countries that have transformed agriculture have often benefitted from enhanced mechanisation. However, there is no direct evidence that illustrates enhanced youth inclusion or retention in agriculture through more mechanisation. For instance, amid the highly mechanised agriculture, only 5% of farmers in the EU are <35; global youth labour participation rate is declining e.g. 53% to 49% between 2000 and 2011. There is evidence, indeed, that youth participation in Ethiopia is declining, in spite of mechanisation efforts ([Bezu and Holden 2014](#)). This is important, because over 60% of the population of Ethiopia is <25, yet the proportion of farmer average age is increasingly over 44 ([Bezu and Holden 2014](#)). In view of experiences from elsewhere, mere focus on mechanisation in the absence of entrepreneurship or social innovation will not guarantee better rural incomes, equity or youth participation (e.g. [Sims and Kienzle 2017](#)).

Business environment related to MSE in Ethiopia

Ethiopia ranks lowly on ease of doing business index ([Doing Business 2018](#)). In 2017, Ethiopia was ranked 159th and 29th globally and in Africa respectively. In terms of 2018 Logistics Performance Index (indicators), Ethiopia was ranked 131.

Table 1. Ease of doing business in Ethiopia relative to selected countries

	Singapore	Mauritius	Rwanda	Kenya	Ethiopia
Africa Rank	-	1	2	3	29
Global Rank	2	20	29	61	159
Starting a Business	3	21	51	126	167
Dealing with Construction Permits	8	15	106	128	168
Getting Electricity	16	34	68	75	131
Registering Property	21	35	2	122	144
Getting Credit	32	60	3	8	175
Protecting Minority Investors	7	15	14	11	178
Paying Taxes	8	6	35	91	130
Trading across Borders	45	69	88	112	154
Enforcing Contracts	1	27	78	88	60
Resolving Insolvency	27	35	58	57	148
GDP: 1963: 2017 US\$ ratio	847m: 824b	*150m:13b	128m: 9b	926m: 75b	- : 81b

<http://www.doingbusiness.org/en/rankings?region=>

* means unclear. – means no data

Table 2. Selected economic indicators in Ethiopia, compared to Rwanda (same region in Africa)

Overview	Ethiopia	Rwanda
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	Last	Reference	Previous	Range	Last	Reference	Previous	Range
GDP annual Growth rate (%)	10.2	17-Dec	10.9	-11.1: 13.9	5.8	18-Sep	0.1	-2.2: 13.2
Unemployment rate (%)	16.8	15-Dec	17.4	16.8: 26.4	7.7	18-Sep	6.7	1.9: 13.2
Inflation rate (%)	10.4	18-Dec	10.6	-4.1: 64.2	-1	18-Nov	-3.4	-15.8: 28.1
Interest Rate (%)	7	18-Nov	7	03:11	5.5	18-Nov	5.5	5.5: 9
Balance of trade (US\$ Million)	-2806	18-Mar	-3362	-3737: -957	-99.53	18-Sep	-123	-1268: -20.58
Current account (US\$ Million)	-1436	18-Mar	-2077	-2458: 2008	-622	17-Dec	-1336	-1336: 99.12
Current account to GDP (%)	-8.5	17-Dec	-9.9	-12.6: 1.5	-14.1	17-Dec	-16.6	-16.6: 1.8
Government debt to GDP (%)	33.5	17-Dec	34.9	24.7: 41.8	40.2	17-Dec	37.6	19.5: 120
Government budget (% of GDP)	-3.3	17-Dec	-1.9	-8.9: 6.6	-4.8	17-Dec	-3.2	-5.3: -0.1
Corporate tax rate (%)	30	18-Dec	30	30:30:00	30	18-Dec	30	30:35:00
Personal income tax rate (%)	35	18-Dec	35	35:35:00	30	18-Dec	30	30:30:00

Table 3. Unincorporated business and sole traders tax in Ethiopia

Taxable business income (ETB)	Rate	Deduction (ETB)
0 – 7,200	Exempt threshold	0
7,201 – 19, 400	10%	720
19,401 – 38, 400	15%	1710
38, 401 – 63, 600	20%	3,630
63,601 – 93,600	25%	6,780
93,601 – 130,800	30%	11,460
Over 130,800	35%	18,000

Ethiopia (1 US\$ = 27 ETB)

(GFDRE 2011)

Rural businesses in Ethiopia face many barriers, which often trickle from national-level constraints. These constraints include corruption (ranked 111 out of 177), inconsistencies in tax assessments and excessive penalties, occasional delays in accessing foreign exchange, difficulties in clearing imports. Ethiopia has a relatively small business sector, which is import-dependant, and therefore vulnerable to foreign exchange shortages (Institute of Export 2019).

2.0 Methods

Questionnaire survey

A total of 20 small mech entrepreneurs were surveyed in Asella District. This survey relied upon a structured questionnaire to collect data on i) structural – mostly economic and ii) cognitive – factors that influence small mech entrepreneurship. Further data were collected using a set of qualitative tools i) Key Informant Interviews ii) FGD observation, and photography.

Data were analysed using simple statistical tabulations and calculations.

Key Informant Interviews

Key informant interviews were held among 7 officials of purposively sampled organisations. These seven were selected from the following list of organisations that provide different forms of support to small mechanisation entrepreneurship in Ethiopia:

- Federal Micro and Small, Enterprises Development Agency (of Ethiopia) – public agency
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- Ethiopia Strategy Support Program (ESSP/ IFPRI) – donor supported programme
- Ethiopian Development Research Institute (EDRI) – national research system
- Central Statistical Authority (CSA) – public agency

- f) EU, DfID, USAID, ACIAR, BMGF, BMZ – international donors
- g) Bureau of Finance and Economy Development (BoFED) – public agency
- h) Bureau of Labour and Social Affair (BoLSA) – public agency
- i) Micro Enterprise Laying Foundation for Economic development (MELFED) – foundation
- j) Development Bank of Ethiopia – commercial bank
- k) Ministry of Finance and Economic Development (MOFED) – government
- l) Micro and Small Enterprise Dynamic Economic Growth and Poverty Reduction (MSEDEGPR) – public agency
- m) Small Enterprise Assistance Fund (SEAF) – public programme
- n) ***Mechanisation leasing companies*** – private sector
- o) ***Ethiopia Institute of Agricultural Research (EIAR)*** – national research system
- p) ***Ethiopian Agricultural Transformation Agency (ATA)*** – public agency
- q) ***Ministry of Agriculture and Natural Resources*** – government
- r) ***GIZ – Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH or German*** – donor/development agency
- s) ***International Development Enterprises (iDE)*** – NGO
- t) ***Micro Finance Institutions*** – private sector

We purposively sampled the 7 organisations (*italics* above) to represent the diversity of small mechanisation network. Those interviewed were credit lender, government Ministry – Agricultural engineering unit, NGO, research institute, leasing company, key development initiative.

Qualitative research

Case research, an in-depth investigation of six purposively sampled youth entrepreneurs was done to complement the survey. The six represented i) businesses run individually ii) businesses run as groups. These were also sample based on entrepreneurs manifesting business success i.e. profit. The goal was to broadly understand underlying social and cognitive drivers underlying youth-led small mechanisation social innovation in Ethiopia.

Secondary data analysis

Efforts to uncover structural and cognitive aspects from literature. These are not however gender detailed information; there is no meaningful literature on two-wheel tractor (2WT) based or small mech social innovation in Ethiopia. Literature review therefore focused on broad structural and cognitive issues, and inferences. We have compared findings with examples from Rwanda and Uganda, where Australian Centre for International Agricultural Research (ACIAR) investments in Agricultural Innovation Platform (AIP) based social innovation have yielded in-depth knowledge (Misiko et al., 2016; Adam et al., 2018).

2.1 Sites

Asella District is located in Arsi Zone of the Oromia Region in Ethiopia. It is 175 kilometres from Addis Ababa. Asella town (in the district) has a latitude and longitude of 7°57'N 39°7'E, with an elevation of 2,430 meters. Asella is categorised as having a subtropical highland climate (FAO 2007; Cogliati et al., 2018). The seasons are only distinguished by the intensity of rain, which is highest in August and lowest in December. Coffee and wheat are among the major crops grown in Asella. Only 4% of the inhabitants have access to electricity, this zone has a road density of 45.0 kilometres per 1000 square kilometres (compared to the national average of 30 kilometres), the average rural household has 1.2 hectare of land (compared to the national average of 1.01 hectare of land and the equivalent of 1.1 heads of livestock).

16.5% of the population is in non-farm related jobs, compared to the national average of 25% (Central Statistics Agency 2019).

3.0 Findings and discussions

3.1 Individual business ownership is preferable among youths in Ethiopia

Mechanization hire service business models were nascent. Survey findings, and key informant interviews show youth-run entrepreneurs in Ethiopia worked better as individual owned entities, rather than as groups. Out of the 8 businesses 4 were individually owned and 4 were collective enterprises.

Key informant interviews revealed that beyond FACASI project, there were 35 youth groups in Ethiopia focused on agricultural small mechanisation business. Membership of each of those groups was typically less than 15. There are thousands of individual mech ownerships attempting service provision, but with little product diversification. FACASI research shows a general lack of experience sharing, which is essential in promoting widespread diversification to ensure higher sustainability levels of businesses. There are two main explanations for the few collective businesses in Ethiopia. One, there is little trust in collective businesses. This low trust emanates from a politicised process of selection business groups. Usually, government officers are mandated to select youths to benefit from business schemes. The process is often marred with poor matching of interest, skills, geography and needs. Two, local politics and networking interference. These youths have good density of reachability and connectedness. However, their networks are often political more than entrepreneurial. The perception of political capital, or free benefits from governmental systems means youth groups, as composed, rarely work hard to repay public-supported credit. Therefore, loan recovery is usually less than 5%. These groups simply disintegrate, because their main priority was not small mechanisation-based entrepreneurship. They are not formed based on niche opportunities.

3.2 small mechanisation-based business is unique

There were several merits of these small mechanisation-based businesses in rural Ethiopia. They were unique, they enhanced quality of farming, reduced time and cost of farming as illustrated in Table 4 and 5. With diversification of services offered, mechanisation-based entrepreneurship can offer income across seasons as shown in Table 5.

Table 4. Advantage of 2WT-based technologies

The value and uniqueness of 2WT-based technologies			
Unique	Quality	Time	Cost
<ul style="list-style-type: none"> • Multipurpose • can operate in area where large-scale mechanization cannot reach • The capacity of water pump mounted to 2WT can address larger area compare to small engine water pump 	<ul style="list-style-type: none"> • Compare to conventional farming system, the quality of reaping, threshing, shelling and crop establishment is very high • The quality of straw threshed with 2WT is very nice and its amount is higher for animal feed 	<ul style="list-style-type: none"> • Can reduce time of crop establishment, reaping, threshing/shelling significantly 	<ul style="list-style-type: none"> • low procurement costs of 2WT and implements • Potential for reducing production costs through reduced labour, drudgery and animal feed- higher gross Margie for farmers • reducing the amount of seed wasted by thinning and limits fertilizer losses

3.3. Small mechanisation entrepreneurship is comparatively superior in income

With diversification, small mechanisation entrepreneurship offered superior income. The main equipment owned by these businesses included 2WT, planters, reapers, threshers, water pumps, trailers, disc ploughs, and moulding boards. Common services offered were planting, reaping/harvesting, shelling, irrigation, transportation, threshing, and ploughing. Main customers were farmers (mostly small and medium scale). With such diversification, small mech entrepreneurship yielded continuous and superior incomes than public sector – see Table 5 and 6. The public sector is the largest employer in Urban Ethiopia, and one main cause of rural-urban migration.

Table 5. Profitability analysis from service providers point of view

Indicators				Increase in cost (10%)	
	NPV (\$)	IRR (%)	B/c ratio	NPV (\$)	IRR (%)
Seeder, thresher, harvester and trailer (case 1)	51,251	188%	3.36	49,081	168%
Thresher, trailer and harvester (case 2)	43,315	190%	3.59	41,542	169%
Thresher and trailer (case 3)	36,273	195%	3.56	34,762	173%
Transportation (case 4)	24,680	193%	3.61	23,678	172%
Seeder, trailer, and harvester (case 5)	35,852	177%	3.36	34,334	158%
Seeder, thresher and trailer (case 6)	40,402	184%	3.29	38,638	164%
Seeder and Trailer (case 7)	28,810	179%	3.29	27,554	159%
Seeder and harvester (case 8)	7,917	63%	1.94	7,076	55%
Seeder (case 9)	874	23%	1.15	296	18%
Harvester (case 10)	3,788	45%	1.64	3,200	39%

Table 6. Increase in gross margin for farmers as a result of mechanization

Without mechanisation	With Mech		
	Combination of accessory	Value	Percentage increase because of mech
1,146	2BFG seeder, harvester, thresher and trailer	2043	78%
	2BFG seeder, harvester and thresher	2027	77%
	2BFG seeder, harvester and trailer	1957	71%
	2BFG seeder, thresher and trailer	1942	69%
	2BFG	1840.4	61%
	Reaper/ harvester	1242	8%
	Thresher	1223	7%
	Trailer	1190	4%

Small mech entrepreneurship yields better incomes than public sector – the largest employer in Urban Ethiopia. The allure for white-collar jobs is therefore quickly losing credible premise. Two factors come to the fore in this study, one, MSE innovation models that leverage small mechanisation to deliver early benefits are critical. Table 5 shows average monthly income of a fully diversified small mech based entrepreneurship is over US\$135, compared to an average public-sector salary of about 420 Ethiopian Birr (\$22) per month. This difference is significant to attract and keep youths in rural agriculture. Besides having multiple advantages, this finding proves that youth migration to urban centres is not due to mere incomes, but rather due to other factors such as availability of entrepreneurship support networks.

3.4 Small mechanisation-based business is not season based, suits youth lifestyle

Survey findings show small tractor businesses need year-round activities to ensure higher profits, and for youth to be continuously engaged. Small mechanisation-based businesses were viable throughout the year as illustrated in Table 7 through diversification of services.

Table 7 Calendar for mechanization operation in wheat belt- Asella

Crop	Operations	Period	Total Hours available
Maize	Ploughing	March 1 – May 30	720
	Seeding/ planting	July 15 – Aug 5	160
	Harvesting	Oct – Dec	480
	Threshing	December and January	480
	Irrigation	Nov-May	1,200
	Transport to market	January December	2,864

Small mechanisation-based entrepreneurship also involves mobility, it therefore fits youth lifestyle aspirations better than for women who were found to have problems with mobility in the Zimbabwean case (also see Singh and Belwal 2008; Hundera, M.B. 2014). It fits youth’s lifestyle more when combined with ICT. It is logical for policy to position youths in diversified supply chains. Such a policy would allow rural living and ‘fashion farming’ at the same time.

3.5. Support systems for small mechanisation entrepreneurship – networks

Key informant interviews show youth entrepreneurs have limited access to resource networks, especially linkages with key organisations of support. Findings show their decision to migrate to Addis Ababa is highly rational. It is objective pursuit of resources. Key informant interviews among small mech players shows power supply or fuel and infrastructure are the most critical elements that determine profitability. These three are easier to access in Addis, along with high concentration of other resources, such as apprentice-based training. Small mechanisation-based MSE profitability is in fact inversely related to distance from the capital city. The pool of services in Addis Ababa also attracts key organisations. According to Dynamic Micro Finance Company, the location of their business cannot be wholly in rural Ethiopia. Its 75m loan pool among 3500 clients is utilised in or around Addis Ababa, majority of it among youthful borrowers. These structural support mechanisms are needed in rural areas.

3.6. Equipment, perceptions and brand

Table 5-7 show several advantage of 2WT-based technologies. These advantages however are moderated by other factors, social and cognitive. Brand preference is yet to be a major issue. Given small mechanisation entrepreneurship is nascent in Ethiopia, machine reliability has not come to the fore. However, Key Informant Interviews showed high preference for European or Japanese models among clients of a leasing company called Oromia Capital Goods Finance (OCGF). There is low acceptance of locally made equipment. This is based on cognitive drivers; past interactions among networks with other machineries, perceptions of brands and historical experiences in the broader society. To reduce these limitations, this leasing firm’s experience shows the need to invest in technical capacity through hands-on training. They cannot ‘lend machines and wait for defaults’. They rely heavily on referrals from government, and also TV and mobile promotion. They only lease machines to trained clients. To counter the perception that mechanisation is expensive, they lend to groups that demonstrate availability of raw materials, customers, and viable business ideas. They therefore do not demand collateral. They rely on government to licence MSE and machinery, provide clients with working places.

3.7 Small mech works well when products are diversified

The high-income levels discussed above are possible all year round if entrepreneurs have diversified products. Findings above show diversification is required if the enterprise has to offer

services throughout the year. Tables 5-7 illustrate that diversified products combine well to increase profitability.

Product diversification is key in small tractor mech. Product diversification however requires investments to diversify 2WT-based allied equipment. The most limiting problem for this to happen is the lack of credit for small mech MSE. The main cause is that mechanisation is rarely seen as an agricultural input. Small mech entrepreneurs are therefore unlikely to get public support for skills, insurance, etc. Not many lending institutions fully appreciate small mechanisation-based business profitability (potential), or have credit facilities available for this. There is deep-held perception that MSE default on loans. Emerging reality shows, however, that credit recovery level and rate among large borrowers is far lower. For instance, Dynamic MicroFinance Company portfolio at risk is 3.9%, lower than the national average of 5%. Unlike MSE, big borrowers can hide their wealth easily, get legal representation readily, are more politically networked, can import machinery without difficulty (e.g. excessive taxes, penalties), or are simply corrupt. With this reality, Ethiopia has an expanding elite wealth, a huge micro business class, and a negligible middle level business class. This scenario means most micro entrepreneurship do not grow to become middle level businesses. There are much more compounding problems. As stated, elite businesses are not necessarily maturing from MSE. If this was to be, Ethiopia would have enormous demographic dividends based on Figures 1 and 2. This would mean large population of diverse businesses, representative of the youth and rural populations.

3.8. Networks, support systems for small mechanisation entrepreneurship

There is negligible linkages between large private sector and MSE. Another key area of propping youths' small entrepreneurship is support to bid for government tenders, which is a preserve of large elite-led entrepreneurship. Key interviews show that a key way to achieve youth interest in government tenders is a guarantee for refunds for bidders.

When small mech businesses begin to thrive, they are stifled due to lack of continuous supply of capital, are taxed heavily (i.e. 300%) on equipment. There is no clear-cut guide on taxation level for agricultural small mech equipment. Taxation level is often at the discretion of government revenue officers. Agriculture revolution is not priority in terms of quality rural employment, compared to service, construction or manufacturing sub-sectors. In short, there is local negligence for small mechanisation based MSE.

The right support mechanisms are needed to facilitate better networks for access to business information and resources. Network is costly yet beneficial. Ethiopian experience shows diversity in an entrepreneur's network is essential, but also that too much solidarity stifles the entrepreneurship soul. A regional micro lender in Oromia Region recognises this. It is therefore investing in educated youth; skills in machinery and fabrication, capital/ credit. Beyond these, cover against numerous machinery-based business risks is critical, and if resilience is to be developed. A vital lesson is that social resources are critical; it is not just what entrepreneurs know but who they know. Who they know leads to access to credit and equipment. Beyond these, however, this study illustrates entrepreneurship is a function of motivation, opportunity structures, and access to resources. Networks do not replace the essence of this combination.

3.9 Culture, household resource cycle and rural business systems

There is a widely held perception among lenders and machinery leasing companies that it is risky to invest in youths led businesses. That youths migrate all the time, have no known residences upon leaving their parents. Key informant interviews show youths, especially those unmarried are bottom

in terms of asset accumulation. By assessing family histories, informants illustrated that family life-cycle stages and financial management practices are linked. Household head income, their age, education level and type, and residency have significant influence on incomes and savings. Family life-cycle stage matters because younger unmarried youths struggle to run businesses, partly due to lack of family labour support. Married young men had the assistance of wives, couples in their 40s or 50s with dependent children had made significant savings due to prudent resource management esp. if they were in business or employed. The older the household, the better they were, if they had had earlier longer financial planning horizons, saving plans, investment in durable assets, etc. Based on these qualitative observations, further research in Ethiopia is needed to clearly categorise family cycles and rural business systems. Such evidence may be linked to strategizing based on Fig 1 and 2 for education and public policy.

Conclusions

Individual business ownership was preferable among youths in Ethiopia. Business promotion must therefore be sensitive, even as efforts to promote collective approaches increase. First, emphasis needs to be on mechanisation diversification, to yield continuous, equitable and better incomes that keep youth in rural areas. Secondly, mechanisation-based business models must target to deliver early benefits. Third, the ever-mobile youths will be attracted and retained in rural agriculture because of multiple merits, beyond high incomes. Such merits include year-round benefits, which emanate from field and off-field mechanisation-based services. This is more feasible with the integration of ICT, especially for advertising. Fourth, support is required for enabling functional networks for mechanisation entrepreneurship that support youth-run businesses. These networks are key for investments, referrals, skills, insurance, access to government tenders, access to information and resources. In summary, youths require access to networks that facilitate access to business-enabling resources.

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